

THE  
LAW OF PATENTS

AS ILLUSTRATED BY  
LEADING CASES

WITH DISCUSSION OF PRINCIPLES,  
ANNOTATIONS, IMPORTANT STATUTES  
AND RULES

BY  
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OF

THE DISTRICT OF COLUMBIA AND NEW YORK BARS

IN TWO VOLUMES

VOLUME I

INDIANAPOLIS  
THE BOBBS-MERRILL COMPANY  
PUBLISHERS

1909

1x  
R7241p

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DEC 24 1923

# P R E F A C E

The reasons for this work, and its purpose.

Many practitioners do not have all of the reports containing the patent cases at hand; and many want, it is believed, an arrangement or compilation of the cases for reference and guidance. Many lawyers, too, in general practice, often wish to read the decisions of the courts upon a given question in which a manufacturing or inventing client is interested, as well as the comment of the text writer.

The book is intended to put into as compact a form, as is consistent with thorough treatment, the substance of the best cases under various appropriate headings, and to accompany this condensation of the cases with a text which, it is believed, will offer some features of value under present conditions. It presents also and in order for convenient reference, the statutes, rules, code, etc.

The cases run in logical order. They present, "as near as may be," a text-book of patent law in the words of the courts. They embody the facts in the many cases where the facts are so essential. They group opposing and contradictory with the "reconciling" cases; and in both the cases and the Introduction stress is put upon the illustrations of facts, especially in such live topics as Claims, Construction, Equivalents, Infringement, License, etc.

The short extracts which conclude the several topics are intended to throw side lights of illustration upon the principal cases. Sometimes a case upon an apparently settled point is presented fully that the argument of the court may appear; and sometimes condensation is obtained by merely canceling repetitions.

The language of the court is clearly separated from any notes or comments, which always appear in brackets.

In the Introduction some topics generally regarded as occasional have been enlarged in treatment because little has been said upon them elsewhere and because they are likely to become more important in the near future.

The manuscript has been delayed in publication so that the important and interesting cases of 1912 and 1913 might be included. It therefore goes to press at the end of a period of discussion of cases involving important principles, after careful deliberation and a painstaking selection of over a thousand cases from nearly six thousand cases primarily selected which are either herein presented under separate sections or discussed in some of the chosen cases.

*"Ut res magis valeat quam pereat."*

WALTER F. ROGERS.

WASHINGTON, D. C.,

January 12, 1914.

# TABLE OF CONTENTS

## VOLUME ONE.

### INTRODUCTION.

	Page
I. ORIGIN AND NATURE OF PATENTS-----	1
II. PATENTABILITY—WHAT IS PATENTABLE-----	5
The statutory classes of invention-----	6
The statutory bars -----	9
III. WHO MAY OBTAIN A PATENT-----	30
IV. THE PATENT OFFICE—ITS ORGANIZATION AND FUNCTIONS -----	31
V. APPLICATIONS—PROCEEDINGS IN THE PATENT OFFICE -----	34
VI. APPEALS FROM COMMISSIONER OF PATENTS-----	39
VII. DESIGNS -----	40
VIII. INTERFERENCES—ORIGIN AND PROCEDURE IN PATENT OFFICE -----	42
Priority—General rules -----	45
Conception and disclosure-----	46
Reduction to practice -----	47
Diligence -----	49
Originality—Ancillary and enuring inven- tions—Employer and employee-----	49
Estoppel—Concealment—Res adjudicata---	50
Appellate jurisdiction of Court of Appeals D. C. -----	51
Effect of decisions in interferences in patent office -----	52
Interfering patents -----	52
IX. LETTERS PATENT AND THEIR CONSTRUCTION AND SCOPE -----	53
Claims -----	57
Equivalents -----	62
Combination—Aggregation -----	84
Process—Method -----	100

	Page
Article—Product—Composition .....	109
Functional claims .....	118
Formal objections .....	126
Words, terms and phrases.....	129
Patents as “monopolies”.....	133
X. INFRINGEMENT .....	137
Non-use .....	140
Contributory infringement .....	140
Repair .....	142
Infringement by the United States.....	142
Combination in restraint of trade.....	144
Statute of limitations .....	144
Threats .....	145
Infringement as a question of law.....	145
Notice by marking .....	145
The limitations upon a decree in an infringe- ment suit .....	146
Some early illustrations .....	152
Some modern illustrations .....	156
Primary or pioneer inventions.....	173
Unpatented and secret inventions.....	177
XI. AMENDING, CORRECTING OR REPEALING PATENT.....	180
Reissue .....	180
Disclaimers .....	185
Corrections .....	186
Repeal .....	186
XII. TITLE, GRANT, INHERITANCE, ASSIGNMENT.....	187
XIII. LICENSES, CONTRACTS AND RESTRICTIONS.....	192
XIV. REGULATIONS OF DEALINGS IN PATENT RIGHTS AND PATENTED ARTICLES .....	199
XV. COURTS, CAUSES, PARTIES AND TRIALS.....	201
Jurisdiction .....	202
Jurisdiction—Court of claims .....	203
Jurisdiction of parties and service.....	204
Parties .....	206
Trial and pleadings .....	207
Defenses .....	208
Appeal and error .....	211
XVI. ACTIONS AT LAW .....	211
Statutory basis .....	212
Damages .....	212
Trial by jury .....	215

	Page
Practice and procedure -----	217
The conformity act -----	217
Patent causes, "like causes" -----	220
Nonsuits -----	224
Directing a verdict -----	226
Judgment non-obstante veredicto -----	228
New trials -----	229
Trial by judge -----	229
Trial by referee or auditor -----	230
Evidence -----	230
Bill of exceptions -----	230
Conclusion -----	230
XVII. SUITS IN EQUITY -----	231
XVIII. INJUNCTIONS -----	247
XIX. ACCOUNTING, PROFITS AND DAMAGES -----	253
XX. COSTS, CONTEMPTS AND FINES -----	260
Costs -----	260
Contempt -----	260

## STATUTES, RULES OF PRACTICE, DECISIONS.

I. ORIGIN AND NATURE OF PATENTS -----	262
Monopolies in England—Common law— Statute of monopolies—Constitutional pro- vision—Early patent laws of United States —Distinguishing principles of that law— Secret inventions—Statutory basis of patent contract—Patent monopoly not one in re- straint of trade—Grant of exclusion in ex- change for a disclosure.	
II. PATENTABILITY—WHAT IS PATENTABLE -----	318
<i>Statutory Classes of Invention and Principles—</i> Art—Process and method—Function of ma- chine—Force of nature—Scientific principles and ideas—Property of matter—Result or function—Product—Process and product— Machine—Article of manufacture—Compo- sition of matter.	
<i>Statutory Requisites—</i> Invention—Novelty—Utility—Want of inven- tion and tests of invention—Discovery—Ac- cident—Research—Definitions—Examples—	

	Page
Mechanical skill—Common knowledge— Common experience—Mere carrying for- ward—Portability—Strengthening—Adjust- ability—Change in form, size, proportion, degree—Change or substitution of material —Adding and omitting parts or elements— Change of location—Reversal or transposi- tion of parts—Duplication or multiplication of parts—Adaptation—Inoperativeness— Immoral object—Simplicity—Demand—Ex- tensive use—Commercial success—Turning failure into success—Increased efficiency— Old elements and old result—Old elements and new result—New elements and old re- sult—Use or advantage—Uncontemplated use or function—beneficial use and scope.	
Unclassed inventions.	
Systems and arrangements.	
Broad and narrow inventions.	
Improvements.	
<i>Statutory Bars</i> —	
Want of patentable novelty—Anticipation— State of art—Prior use—Identity—Single use—Judicial notice—Abandoned experi- ments—Secret use—Foreign use, etc.	
Prior patents and publications.	
Public use.	
Abandonment—Dedication to the public.	
Utility.	
Foreign applications and patents.	
III. WHO MAY OBTAIN A PATENT-----	655
IV. THE PATENT OFFICE—ITS ORGANIZATION AND FUNCTIONS -----	664
V. THE APPLICATION—PROCEEDINGS IN THE PATENT OFFICE ON APPEAL THEREFROM-----	673
General requisites—Drawing—Models—Speci- mens—Specification—Claims—Oath—Ex- amination—Division—Meeting an objection or rejection—Amendments and actions by applicant—Rule 70—"New matter"—Rule 75—Overcoming a disclosure—Appeals and petitions—Bill in equity under R. S., U. S.,	

	Page
Sec. 4915, Issue, forfeiture and renewals— Abandonment—Date and form of grant— Delivery—Assignments, assignees and as- signors.	
VI. COURT OF APPEALS, D. C.-----	698
VII. DESIGNS -----	704
Statutes and rules of practice—Comparison of statutes—General definitions.	
VIII. INTERFERENCES -----	733
Conditions precedent—"Interference in fact"— Divisional application—Avoiding an interfe- rence—Amendment to include matter shown but not claimed—Preliminary statements— Rights and relations of parties—Motions to dissolve—Judgment on the record—Hearing, decision and course of appeals—Priority of invention—Evidence—Burden of proof— Public use and other statutory bars—Con- ception and disclosure—Reduction to practice —Diligence — Originality—Employer and employe—Taking testimony—Bill in equity —Interfering patents.	

---

## VOLUME TWO.

IX. LETTERS-PATENT AND THEIR CONSTRUCTION AND SCOPE -----	839
Requisites—Term—Definitions—Prima facie valid—Subject of rigorous examination— But liberal construction—Ut res magis valeat quam pereat—Entitled to all uses and ad- vantages—Need not perceive or describe all benefits or advantages — Specification — Drawings—Operativeness—Claims—May be explained but not altered by reference to specification—Effect of self-imposed limita- tions—Reading in or omitting elements— New matter not permissible—Combination —Equivalents—Multifarious claims—Dedi- cation by not claiming—Effect of acquies-	



	Page
<p>cence in rejection of claims—Words and phrases in claims—Danger of attempting to broaden claims by construction—Pioneer or broad invention—Narrow invention—Reference letters—Patents construed with reference to all prior art—Double patenting—Divisional patenting—Extensive use and commercial success—Anticipation and novelty as affected by construction—Mode of applying prior art—Abandoned experiment—Infringement and anticipation—Claims not description define invention—But whole instrument may be construed together to determine meaning—Each claim, in effect, a patent—Claim may be explained but not altered by description—Effect of patent office construction—Functional claims—Not required to recite all parts associated with combination.</p>	
<p>X. AMENDING, CORRECTING, REPEALING, EXTENDING PATENTS -----</p>	1075
<p>Statutes and rules of practice—Reissue—Must be for same invention which should have been covered by original—When claims may be broader than in original patent—Error arising from inadvertence, accident or mistake, and force of grant by commissioner of patents—Reinstating cancelled or rejected claims—Requirement of reasonable diligence—“Intervening rights”—Effect of surrender of original patent—General rules and illustrations—Certificate of correction—Disclaimers—Repeal by government—Extension.</p>	
<p>XI. TITLE—GRANT, INHERITANCE, ASSIGNMENT----</p>	1146
<p>Legal and equitable—By occupancy—By assignment, grant or conveyance—By creditor’s bill—By bankruptcy—By succession or inheritance.</p>	
<p>XII. LICENSES, CONTRACTS AND RESTRICTIONS-----</p>	1187
<p>XIII. REGULATIONS OF DEALINGS IN PATENT RIGHTS AND PATENTED ARTICLES -----</p>	1283

	Page
XIV. INFRINGEMENT -----	1318
Definition—Making, using or selling—Identity —Use—Machine—Process—Composition of matter—Combination—Broad and narrow claims—Limitation of claims—Equivalents —Omission—Addition — Transposition of parts—Superiority or inferiority—Improve- ment—Before patent—After expiration of patent—Contributory—Repair and recon- struction—By government—Threats.	
XV. COURTS — PARTIES—CAUSES — JURISDICTION — ADJUDICATIONS — COMITY — PRACTICE—EVI- DENCE -----	1436
XVI. ACTIONS AT LAW—DAMAGES-----	1535
XVII. SUITS IN EQUITY -----	1545
XVIII. INJUNCTIONS -----	1581
XIX. ACCOUNTING, PROFITS AND DAMAGES-----	1622
XX. COSTS AND CONTEMPT-----	1710

# TABLE OF CASES

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

A.	
A. B. Farquhar Co. v. National Harrow Co., 102 Fed. 714,	1413
Acme Acetylene Appliance Co. v. Commercial Acetylene Co., 192 Fed. 321,	1608
Acme Acetylene Appliance Co. v. Commercial Acetylene Co., 192 Fed. 321,	251
Adam v. Folger, 120 Fed. 260,	1425, 1532, 1620
Adam v. Folger, 120 Fed. 260,	76, 78
Adams v. Bellaire Stamping Co., 141 U. S. 539,	1037
v. Burke, 17 Wall. (U. S.) 453,	1196
Adams v. Burke, 17 Wall. (U. S.) 453,	147, 196, 1244, 1263
Adams Elec. R. Co. v. Lindell R. Co., 77 Fed. 432	1032
Adams Elec. R. Co. v. Lindell R. Co., 77 Fed. 432	630, 919
Addystone Pipe &c. Co. v. United States, 175 U. S. 211	1307, 1308
Adkins v. Moore, 212 U. S. 285	1502
Adriance v. National Harrow Co., 121 Fed. 827	1435
Adriance v. National Harrow Co., 121 Fed. 827	1413
v. National Harrow Co., 98 Fed. 118,	1414
Agawam Co. v. Jordan, 7 Wall. U. S.) 583,	650, 785
Agawam Co. v. Jordan, 7 Wall. (U. S.) 583,	31, 49
Ager v. Murray, 105 U. S. 126,	1181, 1182
Alabastine Co. v. Payne, 27 Fed. 559,	150, 1254
Albright v. Teas, 106 U. S. 613,	1279
Albright v. Teas, 106 U. S. 613,	141
Allen v. Baltimore & Ohio R. Co., 114 U. S. 311,	1350, 1352
Allen v. Culp, 166 U. S. 501,	1140
Allen v. Culp, 166 U. S. 501,	1108
Allen v. Riley, 203 U. S. 347,	1285
Allen v. Riley, 203 U. S. 347,	200, 1285
v. Southern Pacific R. Co., 173 U. S. 479,	1463
Allis v. Stowell, 16 Fed. 783	1416
Ambler, Ex parte, 41 MS. Dec. 209,	689
American v. Kitsell, 35 Fed. 521,	1275
American Air Clean. Co. v. General Comp. Air &c. Co., 195 Fed. 744,	1009
American Brake-Beam Co. v. Pungs, 141 Fed. 923,	1281
American Can Co. v. Hickmott &c. Canning Co., 142 Fed. 141,	1050, 1052
American Caramel Co. v. Mills, 162 Fed. 147,	1518, 1529
American Coat Pad Co. v. Phoenix Pad Co., 113 Fed. 629,	1282
American Cotton-Tie Co. v. Bullard, 17 O. G. 379,	1245, 1268
v. McCready, 17 O. G. 515,	1254
v. McCready, Fed. Cas. No. 295,	1258
v. Simmons, 106 U. S. 89,	1245, 1268
American Crayon Co. v. Sexton, 139 Fed. 564,	1041

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

American Fibre-Chamois Co. v. Buckskin-Fibre Co., 72 Fed. 508,	950	Amy v. Watertown, 130 U. S. 304,	219
American Fibre-Chamois Co. v. Buckskin-Fibre Co., 72 Fed. 508,	726	Anderson v. Collins, 122 Fed. 451,	630, 642, 917, 1055, 1320
American Fibre-Chamois Co. v. Port Huron Mfg. Co., 72 Fed. 516,	1339	Anderson v. Collins, 122 Fed. 451,	29, 147
American Fibre-Chamois Co. v. Port Huron Mfg. Co., 72 Fed. 516,	150	Anderson &c. Mach. Works v. Potts, 108 Fed. 379,	1033, 1036
American Hide Co. v. American Tool Co., 1 Holmes (U. S.) 503,	21	Andrew v. Cross, 8 Fed. 269,	939
American Hide &c. Mach. Co. v. American Tool & Mach. Co., 4 Fish. Pat. Cas. 284,	179, 307	Andrews v. Hovey, 123 U. S. 267,	20, 623
American Lava Co. v. Steward, 155 Fed. 731,	635, 694	v. Nilson, 27 App. (D. C.) 451,	47
American Ordinance Co. v. Driggs-Seabury, 114 Fed. 936,	13	Andrews v. Thum, 67 Fed. 911,	486
American Patent Co. v. Wood, 189 Fed. 391,	663	Andrew &c. Iron Works v. Wilson Mfg. Co., 199 Fed. 798,	13
American Roll-Paper Co. v. Weston, 59 Fed. 147,	1041, 1069	Ansonia &c. Copper Co. v. Electrical Supply Co., 144 U. S. 11,	389
American Roll-Paper Co. v. Weston, 59 Fed. 147,	1070	Anthony Co. v. Gennert, 108 Fed. 396,	1051
American Sales Book Co. v. Bullivant, 117 Fed. 255,	1515	Anthony Co. v. Gennert, 108 Fed. 396,	126
American Specialty Stamping Co. v. New England Stamping Co., 176 Fed. 557,	168	Antisdell v. Chicago Hotel Cabinet Co., 89 Fed. 308,	566, 1581
American Stove Co. v. Cleveland Foundry Co., 158 Fed. 978,	1045, 1047, 1508	Appert v. Schmertz, 13 App. (D. C.) 117,	784
American Strawboard Co. v. Elkhart Egg Case Co., 84 Fed. 960,	8	Appleton v. Ecaubert, 67 Fed. 917,	390
American Sulphite Pulp Co. v. De Grasse Paper Co., 157 Fed. 660,	1428	Appleton Mfg. Co. v. Star Mfg. Co., 60 Fed. 411,	635, 966
v. De Grasse Paper Co., 193 Fed. 653,	1685	Arbetter v. Lewis, 34 App. (D. C.) 491,	113
v. Howland Falls Pulp Co., 80 Fed. 395,	1052	Arkwright, Web. Pat. Cas. 71,	12
American Tobacco Co. v. Streat, 83 Fed. 700,	1053	Arlington Mfg. Co. v. Celluloid Co., 97 Fed. 91,	528
American Tobacco Co. v. Streat, 83 Fed. 700,	128	Arlington &c. Mfg. Co. v. Booth, 78 Fed. 878,	1619
American Writing Mach. Co. v. Wagner Typewriter Co., 151 Fed. 576,	1029	Armat Mov. Picture Co. v. American Mutoscope Co., 118 Fed. 840,	662
American &c. Adv. Co. v. Jones, 142 Fed. 974,	1275	Arms'rong v. O'Neil, unreported Sup. Ct. (D. C.),	143
		Aron v. Manhattan R. Co., 132 U. S. 84,	457
		Aron v. Manhattan R. Co., 132 U. S. 84,	85, 570
		Asbestos Shingle Co. v. Johnson-Manville Co., 189 Fed. 611,	1416
		Ashcroft v. Waiworth, Holmes (U. S.) 152,	1284
		Ashton Valve Co. v. Coale &c. Valve Co., 52 Fed. 314,	837, 1026

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

Atherton Mach. Co. v. Atwood-Morrison Co., 102 Fed. 949, 1504, 1507, 1520	Barber v. National Carbon Co., 129 Fed. 370, 1211
Atlantic Works v. Brady, 107 U. S. 192, 448	Barber v. National Carbon Co., 129 Fed. 370, 194
Atlantic Works v. Brady, 107 U. S. 192, 644	v. Wood, 51
Atlas Cement Co. v. Sandusky Cement Co., 196 Fed. 385, 575	Bar Car Co. v. Chicago &c. R. Co., 110 Fed. 972, 653
Atlas Glass Co. v. Simonds Mfg. Co., 102 Fed. 642, 1014	Barnard v. Gibson, 7 How. (U. S.) 650, 1486
Attorney General v. Eastlake, 11 Hare 205, 1484, 1571	Barnes v. Straus, 2 O. G. 62, 1256
Austin Mfg. Co. v. American Wellworks, 121 Fed. 76, 1066	Barr v. Trades Council, 53 N. J. Eq. 101, 1413
Automatic Pencil Sharpener Co. v. Goldsmith, 190 Fed. 205, 1270	Barrett v. Hall, Fed. Cas. No. 1,047, 663
Automatic Pencil Sharpener Co. v. Goldsmith, 190 Fed. 205, 196	Barsaloux, Ex parte, C. D. (1878) 154, 661
Automatic Weighing Mach. Co. v. Pneumatic Scale Co., 156 Fed. 288, 750	Barton v. White, 144 Mass. 281, 1284
Automatic Weighing Mach. Co. v. Pneumatic Scale Co., 166 Fed. 288, 48	Bate v. Hammond, 129 U. S. 151, 54
Avery v. Case, 148 Fed. 214, 77	v. Sulzberger, 157 U. S. 1, 54
Ayres, In re, 123 U. S. 443, 1350, 1353	Bates v. Clark, 95 U. S. 204, 1350
	Bates v. Coe, 98 U. S. 31, 1015, 1023, 1037, 1524
	Bates v. Coe, 98 U. S. 31, 21
	Bates Mach. Co. v. Force, 149 Fed. 220, 1018
	Bauer v. O'Donnell, 33 Sup. Ct. 616, 196
	Bayliss v. Travelers' Ins. Co., 113 U. S. 316, 216
	Beach v. Hobbs, 92 Fed. 146, 1040, 1139, 1511
	Beach v. Hobbs, 82 Fed. 916, 1491
	Bean v. Smallwood, 2 Story (U. S.) 408, 15
	Beckwith v. Malleable Iron Range Co., 195 Fed. 291, 1682
Babcock v. Clarkson, 63 Fed. 607, 1276	Bedford v. Hunt, 1 Mason (U. S.) 302, 10, 577
Babcock v. Clarkson, 63 Fed. 607, 198	Beedle v. Bennett, 122 U. S. 71, 1506
Badische &c. Soda Fabrik v. Kalle, 104 Fed. 802, 648	Beers v. Haughton, 9 Pet. (U. S.) 361, 218
Bainard v. Cramme, 12 Fed. 621, 419	Beggs, Ex parte, 50 O. G. 1130, 25
Baker v. Crane Co., 138 Fed. 60, 1707	Belknap v. Schild, 161 U. S. 10, 1344
Ball v. Coker, 168 Fed. 304, 1284	Belknap v. Schild, 161 U. S. 10, 143, 152
Ball &c. Fastener Co. v. Ball Glove Fastening Co., 58 Fed. 818, 1019	Bellows v. United Elec. Mfg. Co., 160 Fed. 663, 128
v. Edgerton Mfg. Co., 96 Fed. 489, 1018, 1062	Bement v. National Harrow Co., 186 U. S. 70, 1290
Baltimore & O. R. Co. v. Hamilton, 16 Fed. 181, 219	Bement v. National Harrow Co., 186 U. S. 70, 134, 135, 141, 200, 1266
v. MuCune, 174 Fed. 991, 228	
Bannister v. Eastman, 44 O. G. 697, 32	
Barbed Wire Patent, 143 U. S. 275, 1070	

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

Benbow-Brammer Mfg. Co. v. Richmond Cedar Works, 170 Fed. 965,	75	Blease v. Garlington, 92 U. S. 1,	243
Benbow-Brammer Mfg. Co. v. Straus, 166 Fed. 114,	1041	Blessing v. Jno. Trageser Steam Copper Works, 34 Fed. 753,	951
Benbow-Brammer Mfg. Co. v. Straus, 166 Fed. 114,	75	Bloomer v. McQuewan, 14 How. (U. S.) 539,	1187
Bender v. Hoffman, 85 O. G. 1737,	671	Bloomer v. McQuewan, 14 How. (U. S.) 539,	134, 142, 1255, 1266
Benjamin v. Dale, 158 Fed. 617,	983	v. Millinger, 1 Wall. (U. S.) 340,	1255
Benjamin Elec. Mfg. Co. v. Dale Co., 141 Fed. 989,	128	Bicunt v. Grand Trunk R. Co., 61 Fed. 375,	228
v. Dale Co., 158 Fed. 617,	28	Blount v. Societe, &c., 53 Fed. 98,	1588
Benton v. Ward, 59 Fed. 411,	177	Blount v. Societe, &c., 53 Fed. 98,	164, 248
Berardini v. Tocci, 190 Fed. 329,	436	Board of Liquidation v. McComb, 92 U. S. 531,	1350
Berliner Gramophone Co. v. Seaman, 113 Fed. 750,	1532	Bobbs-Merrill v. Straus, 210 U. S. 339,	196, 1268
Berry v. Wynkoop-Hollenbeck-Crawford Co., 84 Fed. 646,	538	Bodwell v. Housman, 58 Fed. 870,	951
Bertels v. Trethaway, 175 Fed. 971,	182	Boesch v. Graff, 133 U. S. 697,	1516, 1704
Bettendorf, Ex parte, 127 O. G. 848,	728	Bonna, 52 O. G. 751,	696
Bevin Bros Mfg. Co. v. Starr, 114 Fed. 552,	41	Bonnette &c. Sprinkler Co. v. Koehler, 82 Fed. 428,	1425
Birdsall v. Coolidge, 93 U. S. 64,	1535	Bonsack v. Smith, 70 Fed. 383	930
Birdsall v. Coolidge, 93 U. S. 64,	212, 256	Booth v. Denike, 65 Fed. 45,	219
Birdsall v. Shaliol, 112 U. S. 485,	1275	Borden, Ex parte, 23 O. G. 439,	19
Birdsell v. Shaliol, 112 U. S. 485,	206, 1255, 1416	Boston v. Allen, 91 Fed. 248,	1274
Bissell Carpet-Sweeper Co. v. Goshen Sweeper Co., 72 Fed. 545,	1513, 1532	Boston &c. R. Co. v. Bemis Car-Box Co., 80 Fed. 287,	1044
Black Diamond Coal Min. Co. v. Excelsior Coal Co., 156 U. S. 611,	145, 226	v. Bemis Car-Box Co., 98 Fed. 121,	1530
Blackford v. Wilder, 28 App. (D. C.) 535,	811	Bottle Seal Co. v. De La Vergne &c. Seal Co., 47 Fed. 59,	951
Blackford v. Wilder, 28 App. (D. C.) 535,	51	Boville v. Keyworth, 7 El. & Bl. 725,	153
Blackledge v. Weir &c. Mfg. Co., 108 Fed. 71,	1180	Bowditch v. Boston, 101 U. S. 16,	228
Blanchard v. Beers, 2 Blatchf. (U. S.) 418,	154	Bowers v. Lake Superior &c. Dredging Co., 149 Fed. 983.	1272
v. Hill, 2 Atk. 484,	201	Bowker v. Dows, Fed. Cas. No. 1733,	150
v. Sprague, Fed. Cas. No. 1,518,	317	Boyd v. Cherry, 50 Fed. 279,	1254
v. Young, 11 Cush. (Mass.) 345,	1174	v. McAlpin, Fed. Cas. No. 1,748,	1340
		Boyden v. Burke, 14 How. (U. S.) 575,	693

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Boyden Power-Brake Co. v. Westinghouse Air-Brake Co., 70 Fed. 816,	175, 1051	Brown v. Davis, 116 U. S. 237,	1051
Boyer, 49 O. G. 1895,	696	v. District of Columbia, 3 Mackey (D. C.) 502,	1340
Boyer v. Keller Tool Co., 127 Fed. 130,	1051	<b>Brown v. Duchesne, 19 How. (U. S.) 183,</b>	300
Boynton Co. v. Morris Chute Co., 87 Fed. 225,	1051	Brown v. Duchesne, 19 How. (U. S.) 183,	152, 179
Bradford Belting Co. v. Kisinger-Ison, 113 Fed. 811,	1275	<b>Brown v. Guild, 23 Wall. (U. S.) 181,</b>	1074
<b>Bradley v. Eccles, 139 Fed. 447,</b>	1528	Brown v. Guild, 23 Wall. (U. S.) 181,	122, 129, 1034, 1051
Bradley v. Eccles, 126 Fed. 945,	41, 730	v. Manufacturing Co., 6 U. S. App. 427,	69
Brammer v Schroeder, 106 Fed. 918,	1027, 1428	<b>Brown v. Piper, 91 U. S. 37,</b>	489, 1456, 1521, 1529
Brennan v. Dowagiac Mfg. Co., 162 Fed. 472,	1660, 1705	Brown v. Piper, 91 U. S. 37,	437, 570, 951, 954
Brennan v. Dowagiac Mfg. Co., 162 Fed. 472,	260	v. Stilwell &c. Mfg. Co., 57 Fed. 731,	63, 67, 83
<b>Bresnahan v. Tripp &amp;c. Leveler Co., 72 Fed. 920,</b>	846, 1050	Browning Hook &c. Co. v. Tri-Eye Hook &c. Co., 199 Fed. 189,	13
Bresnahan v. Tripp &c. Leveler Co., 102 Fed. 899,	131	Brown Mfg. Co. v. Deere, 61 Fed. 972,	125
Brewer's Lessee v. Blougher, 14 Pet. (U. S.) 178,	1472	<b>Brunswick v. Klumpp, 131 Fed. 255,</b>	480
Brickill v. Hartford, 57 Fed. 216,	209	<b>Brunswick-Balke-Collender Co. v. Thum, 111 Fed. 904,</b>	1062
Briede. In re. 27 App. (D. C.) 298,	184, 1101	<b>Brush v. Condit, 132 U. S. 39,</b>	578
Briggs v. Central Ice Co., 60 Fed. 87,	499	<b>Brush Elec. Co. v. California Elec. Light Co., 52 Fed. 945,</b>	1732
<b>Briggs v. Duell, 93 Fed. 972,</b>	498	Brush Elec. Co. v. Ft. Wayne Elec. Light Co., 40 Fed. 826	131
Briggs v. Duell 93 Fed. 972	16, 132	v. Western Elec. Co., 69 Fed. 240,	131
Brigham v. Coffin, 149 U. S. 557,	102, 111, 537	v. Western Electric Co., 76 Fed. 761,	1046
<b>Brill v. Peckham Motor Truck &amp;c. Co., 108 Fed. 267,</b>	1532	<b>Bryce Bros. Co. v. National Glass Co., 116 Fed. 186,</b>	1039
Brill v. St. Louis Car Co., 80 Fed. 909,	179, 307	Bryson v. Whitehead, 1 S. & S. 74,	177
v. St. Louis Car Co., 90 Fed. 666,	1051	<b>Bullock Elec. Mfg. Co. v. General Elect. Co., 149 Fed. 409,</b>	630
Bristol v. Equitable Soc., 132 N. Y. 264,	178	Bullock Elec. Mfg. Co. v. General Elec. Co., 149 Fed. 409,	157, 158
<b>Britton v. White, 61 Fed. 93,</b>	714	<b>Bullock &amp;c. Mfg. Co. v. Westinghouse &amp;c. Mfg. Co., 129 Fed. 105,</b>	1378, 1433, 1435, 1721, 1730
Broadnax v. Central Stock Yard, 4 Fed. 214,	930	Bullock &c. Mfg. Co. v. Westinghouse &c. Mfg. Co., 129 Fed. 105,	151
Brodrick v. Mayhew, 131 Fed. 92,	930	Bulz. Ex parte, 67 O. G. 677,	390
Brooks v. Jenkins, 3 McLean (U. S.) 432,	190, 1172		
<b>Brosnahan, In re. 18 Fed. 62,</b>	1310		
Brosnahan, In re. 18 Fed. 62,	930		
<b>Brown v. Crane Co., 133 Fed. 235,</b>	501		

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Bundy Mfg. Co. v. Detroit Time-Register Co.</b> , 94 Fed. 524, 1040, 1043, 1047	<b>Campbell Print. Press Co. v. Manhattan R. Co.</b> , 49 Fed. 930, 930, 1250
<b>Bundy Mfg. Co. v. Detroit Time-Register Co.</b> , 94 Fed. 524, 76	<b>Campbell &amp;c. Mfg. Co. v. Duplex Print. Press Co.</b> , 101 Fed. 282, 1063
<b>Burdell v. Denig</b> , 92 U. S. 716, 1540	<b>Campbell &amp;c. Mfg. Co. v. Duplex Print. Press Co.</b> , 101 Fed. 282, 1046
<b>Burdell v. Denig</b> , 92 U. S. 716, 213	<b>Canda v. Michigan &amp;c. Iron Co.</b> , 124 Fed. 486, 1016, 1024, 1030, 1072, 1180, 1432
<b>Burns v. Meyer</b> , 100 U. S. 671, 63, 67, 163	<b>Canda v. Michigan &amp;c. Iron Co.</b> , 124 Fed. 486, 94
<b>Burr v. Duryee</b> , 1 Wall. (U. S.) 531, 627	<b>Cantrell v. Wallick</b> , 117 U. S. 689, 629, 1069
<b>Burr v. Duryee</b> , 1 Wall. (U. S.) 531, S. 184, 405	<b>Carlisle v. Cooper</b> , 64 Fed. 475, 219
<b>Burson v. Vogel</b> , 29 App. (D. C.) 388, 47	<b>Carlton v. Bokee</b> , 84 U. S. 463, 1035, 1055
<b>Burt v. Ivory</b> , 133 U. S. 349, 397	<b>Carnegie Steel Co. v. Brislin</b> , 124 Fed. 213, 1046
<b>Butler v. Steckel</b> , 137 U. S. 21, 460	<b>Carnegie Steel Co. v. Cambria Iron Co.</b> , 185 U. S. 403, 1073, 1526
<b>Butler v. United States</b> , 23 Ct. Cl. (U. S.) 335, 143	<b>Carr v. Rice</b> , Fed. Cas. No. 2,440, 316
<b>Butte City v. Pacific &amp;c. R. Co.</b> , 60 Fed. 90, 639	<b>Carr v. Rice</b> , 1 Fish. (U. S.) 198, 930
<b>Butterworth v. Boral</b> , 97 O. G. 1596, 626	<b>Carrol v. Hallwood</b> , 31 App. (D. C.) 165, 51
<b>Butterworth v. United States</b> , 112 U. S. 50, 666, 1014	<b>Carter Mach. Co. v. Hanes</b> , 78 Fed. 346, 1034
<b>Butterworth v. United States</b> , 112 U. S. 50, 32, 670	<b>Carver v. Braintree Mfg. Co.</b> , 8 Story (U. S.) 432, 60
<b>Button Fastener Cases</b> , 77 Fed. 288, 1260, 1266	<b>Carver v. Hyde</b> , 16 Pet. (U. S.) 513, 628, 1319
<b>Byram v. Friedberger</b> , 100 Fed. 963, 732	<b>Cary Mfg. Co. v. Neal</b> , 90 Fed. 725, 41
<b>C</b>	
<b>Cain v. Park</b> , 14 App. (D. C.) 42, 24, 50	<b>Case v. Terrell</b> , 11 Wall. (U. S.) 199, 1348
<b>Caldwell</b> , 120 O. G. 2125, 128	<b>Casein Co. v. A. M. Collins Mfg. Co.</b> , 174 Fed. 341, 182
<b>Caldwell v. Powell</b> , 73 Fed. 488, 712	<b>Casey v. Cincinnati Union</b> , 45 Fed. 135, 1413
<b>Cameron &amp;c. Tank Co. v. Knoxville</b> , 227 U. S. 39, 54	<b>Casey v. Pennsylvania Asphalt Pav. Co.</b> , 109 Fed. 744, 228
<b>Cameron &amp;c. Tank Co. v. Saratoga</b> , 159 Fed. 453, 636	<b>Casey v. Typographical Union</b> , 1413
<b>Cammeyer v. Newton</b> , 94 U. S. 225, 1107, 1348, 1350	<b>Casler, Ex parte</b> , 90 O. G. 446, 133
<b>Campbell v. Bayley</b> , 63 Fed. 463, 638	<b>Cazier v. Mackie-Lovejoy Mfg. Co.</b> , 138 Fed. 634, 78
<b>Campbell v. Haverhill</b> , 155 U. S. 610, 1515	<b>Celluloid Mfg. Co. v. American Zylonite Co.</b> , 30 Fed. 437, 151, 1254
<b>Campbell v. Haverhill</b> , 155 U. S. 610, 145, 220, 222, 1515	<b>Campbell v. American Zylonite Co.</b> , 34 Fed. 744, 222
<b>Campbell v. Richardson</b> , 76 Fed. 976, 1051	<b>Campbell v. Arlington Mfg. Co.</b> , 52 Fed. 740, 390
<b>Campbell Print. Press Co. v. Duplex Print. Press Co.</b> , 89 Fed. 331, 931	<b>Campbell v. Tower</b> , 26 Fed. 451, 389



Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Centaur Co. v. Heinsfurter</b> , 84 Fed. 955, 1231	<b>Christensen v. Westinghouse</b> , 135 Fed. 774, 1711
<b>Centaur Co. v. Heinsfurter</b> , 84 Fed. 955, 1427	<b>Christensen Eng. Co., In re</b> , 194 U. S. 458, 1719
<b>Central Foundry Co. v. Cough- lin</b> , 141 Fed. 91, 1037, 1424	<b>Christensen Eng. Co., In re</b> , 194 U. S. 458, 1717
<b>Central Nat. Bank v. Connecti- cut Mut. Life Ins. Co.</b> , 104 U. S. 54, 254, 1627	<b>Christie v. Seybold</b> , 55 Fed. 69, 741
<b>Central Transportation Co. v. Pullman's Palace Car Co.</b> , 139 U. S. 24, 224	<b>Christie v. Seybold</b> , 55 Fed. 69, 49
<b>Cerealine Mfg. Co. v. Bates</b> , 101 Fed. 272, 1021	<b>Church, Ex parte</b> , 82 O. G. 1987, 32, 670
<b>Chadwick v. Covell</b> , 151 Mass. 190, 178, 179	<b>Cimiotti Unhairing Co. v. American Fur Refining Co.</b> , 198 U. S. 399, 1033, 1326
<b>Chaffee v. Boston Belting Co.</b> , 22 How. (U. S.) 217, 1365	<b>v. American Fur Refining Co.</b> , 198 U. S. 399, 64, 67, 83, 147, 156, 975
<b>Chaffin v. Taylor</b> , 114 U. S. 309, 1352	<b>v. American &amp;c. Mach. Co.</b> , 115 Fed. 498, 1035
<b>Champlin v. Stoddart</b> , 30 Hun (N. Y.) 300, 177	<b>v. American &amp;c. Mach. Co.</b> , 115 Fed. 498, 1328
<b>Chapin v. Rosenthal</b> , 1 W. N. C. (Pa.) 106, 1284	<b>Clancy v. Troy Belting &amp;c. Co.</b> , 157 Fed. 554, 1420
<b>Chapman</b> , 120 O. G. 2440, 128	<b>Clark v. Adia</b> , L. R. 2 App. Cas. 315, 149
<b>Chappell v. United States</b> , 81 Fed. 764, 219	<b>v. Harmon &amp;c. Block Co.</b> , 149 Fed. 1001, 730
<b>Charles Boldt Co. v. Nivison- Weiskopf Co.</b> , 194 Fed. 871, 725	<b>v. Wilson</b> , 30 Fed. 372, 1066
<b>Chase v. Chase</b> , 4 O. G. 4, 663	<b>v. Wooster</b> , 119 U. S. 322, 1505, 1567, 1708
<b>Chateaugay &amp;c. Iron Co., Ex parte</b> , 128 U. S. 544, 219	<b>Clark &amp;c. Razor Co. v. Gil- lette &amp;c. Razor Co.</b> , 194 Fed. 421, 95
<b>Chauche v. Pare</b> , 75 Fed. 283, 1185	<b>Cleveland Foundry Co. v. De- troit Vapor Stove Co.</b> , 131 Fed. 853, 1019
<b>Cheatham &amp;c. Device Co. v. Transit Development Co.</b> , 197 Fed. 563, 1733	<b>Cleveland Foundry Co. v. De- troit Vapor Stove Co.</b> , 131 Fed. 853, 940
<b>Chemical Rubber Co. v. Ray- mond Rubber Co.</b> , 71 Fed. 179, 634	<b>Cleveland Foundry Co. v. Kauffman</b> , 135 Fed. 360, 1064
<b>Chester Forging &amp;c. Co. v. Tindel-Morris Co.</b> , 165 Fed. 899, 1520	<b>Clinton Wire-Cloth Co. v. Wright &amp;c. Wire-Cloth Co.</b> , 65 Fed. 425, 390
<b>Chicago &amp; N. W. R. Co. v. Kendall</b> , 167 Fed. 62, 219	<b>Clothworkers of Ipswich, God- bolt</b> 252, 2, 201
<b>Chicago &amp; N. W. R. Co. v. Sayles</b> , 97 U. S. 554, 906, 1031	<b>Clough v. Gilbert &amp;c. Mfg. Co.</b> , 106 U. S. 166, 1045
<b>Chicago &amp; N. W. R. Co. v. Sayles</b> , 97 U. S. 554, 172, 176	<b>Clough v. Gilbert &amp;c. Mfg. Co.</b> , 106 U. S. 166, 160, 174
<b>Chicago, M. &amp; St. P. R. Co. v. Metakstaff</b> , 41 C. C. A. 669, 219	<b>Clough v. Gilbert &amp;c. Mfg. Co.</b> , 106 U. S. 178, 1067
<b>v. Tompkins</b> , 176 U. S. 167, 1698	<b>Clough v. Gilbert &amp;c. Mfg. Co.</b> , 106 U. S. 178, 88, 160
<b>Chicago R. Equip. Co. v. Perry Side Bearing Co.</b> , 170 Fed. 968, 1110	<b>Cobb, Ex parte</b> , 5 O. G. 751, 109

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

<b>Coburn &amp;c. Mfg. Co. v. Chandler</b> , 97 Fed. 333, 1047	<b>Commonwealth v. Central Dist. &amp; Print. Tel. Co.</b> , 145 Pa. St. 121, 316, 1283
<b>Cochran, Ex parte</b> , C. D. (1869) 30, 22	<b>v. Edison Elec. Light Co.</b> , 145 Pa. St. 131, 1283
<b>Cochrane v. Badische &amp;c. Soda Fabrik</b> , 111 U. S. 293, 637, 1020	<b>v. Edison Elec. Light Co.</b> , 157 Pa. St. 529, 1284
<b>Cochrane v. Deneer</b> , 94 U. S. 780, 342, 1458	<b>v. Petty</b> , 96 Ky. 452, 200, 1283
<b>Cochrane v. Deener</b> , 94 U. S. 780, 233, 511, 1104	<b>v. Philadelphia Co.</b> , 145 Pa. St. 142, 1283
<b>Coffee v. Guerant</b> , 3 App. (D. C.) 497, 47	<b>v. Philadelphia Co.</b> , 157 Pa. St. 527, 1284
<b>Coffey v. United States</b> , 117 U. S. 233, 221, 222	<b>v. Westinghouse Air Brake Co.</b> , 151 Pa. St. 276, 1284
<b>Coffield v. Fletcher Mfg. Co.</b> , 167 Fed. 321, 1141	<b>v. Westinghouse &amp;c. Mfg. Co.</b> , 151 Pa. St. 265, 1283
<b>Coffin v. Ogden</b> , 85 U. S. 120, 575	<b>Comptograph Co. v. Mechanical Accountant Co.</b> , 145 Fed. 331, 1427
<b>Collander v. Griffith</b> , 2 Fed. 206, 41	<b>Computing Scale Co. v. Automatic Scale Co.</b> , 204 U. S. 609, 645, 971
<b>Colton, Ex parte</b> , 104 O. G. 1119, 731	<b>Computing Scale Co. v. Automatic Scale Co.</b> , 204 U. S. 609, 1046
<b>Colt's Patent Firearms Mfg. Co. v. New York Sporting Goods Co.</b> , 190 Fed. 553, 1007	<b>Computing Scale Co. v. National Comp. Scale Co.</b> , 79 Fed. 962, 1413
<b>Colt's Patent Firearms Mfg. Co. v. New York Sporting Goods Co.</b> , 190 Fed. 553, 156	<b>Computing Scale Co. v. National Comp. Scale Co.</b> , 79 Fed. 962, 1416
<b>Columbia v. Freeman</b> , 71 Fed. 302, 930	<b>Connors v. Ormsby</b> , 148 Fed. 13, 226
<b>Columbia Motor Car Co. v. Duerr</b> , 184 Fed. 893, 170	<b>Consolidated Brake-Shoe Co. v. Detroit Steel &amp;c. Co.</b> , 59 Fed. 902, 473
<b>Columbia Wire Co. v. Kokomo Steel &amp;c. Co.</b> , 143 Fed. 116, 1428	<b>Consolidated Car Heat. Co. v. West End St. R. Co.</b> , —, 1516
<b>Columbus Chain Co. v. Standard Chain Co.</b> , 148 Fed. 622, 1070	<b>Consolidated Elec. Mfg. Co. v. Holtzer</b> , 67 Fed. 907, 633
<b>Columbus Watch Co. v. Robbins</b> , 148 U. S. 266, 1492	<b>Consolidated Fastener Co. v. Littauer</b> , 84 Fed. 164, 1032
<b>v. Robbins</b> , 64 Fed. 384, 641	<b>Consolidated Fruit Jar Co. v. Bellaire Stamping Co.</b> , 27 Fed. 377, 21
<b>Columbus Watch Co. v. Robbins</b> , 64 Fed. 384, 122, 129, 131	<b>Consolidated Fruit Jar Co. v. Wright</b> , 94 U. S. 92, 607
<b>Commercial v. Fairbank</b> , 135 U. S. 176, 54	<b>Consolidated Fruit Jar Co. v. Wright</b> , 94 U. S. 92, 588
<b>Commercial Acetylene Co. v. Acme Acetylene Appliance Co.</b> , 188 Fed. 89, 1609	<b>Consolidated Roller Mill Co. v. Coombs</b> , 39 Fed. 803, 930, 1250
<b>Commercial Acetylene Co. v. Avery &amp;c. Lighting Co.</b> , 152 Fed. 642, 1417	
<b>Commercial Acetylene Co. v. Avery &amp;c. Lighting Co.</b> , 152 Fed. 642, 1416	
<b>Commercial Acetylene Co. v. Avery &amp;c. Lighting Co.</b> , 159 Fed. 935, 1580	

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Consolidated Rubber Tire Co. v. Diamond Rubber Co.</b> , 157 Fed. 677, 1585	<b>Cottle v. Krementz</b> , 31 Fed. 42, 389
<b>Consolidated Rubber Tire Co. v. Firestone &amp;c. Rubber Co.</b> , 151 Fed. 237, 147	<b>Cotton-Tie Co. v. Simmons</b> , 106 U. S. 89, 150
<b>Consolidated Safety Valve Co. v. Crosby &amp;c. Valve Co.</b> , 113 U. S. 157, 1020	<b>Couch v. Barnett</b> , 23 App. (D. C.) 446, 47, 772
<b>Consolidated Safety Valve Co. v. Crosby &amp;c. Valve Co.</b> , 113 U. S. 157, 148, 174, 471	<b>Coughran v. Bigelow</b> , 164 U. S. 301, 224
<b>Consolidated &amp;c. Apparatus Co. v. Woerle</b> , 29 Fed. 449, 663	<b>Coupe v. Royer</b> , 155 U. S. 565, 1705
<b>Consolidated &amp;c. Tire Co. v. Diamond Rubber Co.</b> , 162 Fed. 892, 1064	<b>Coupe v. Royer</b> , 155 U. S. 565, 83, 1356
<b>Consumers' Cotton-Oil Co. v. Ashburn</b> , 81 Fed. 331, 219	<b>Cowles &amp;c. Aluminum Co. v. Lowrey</b> , 79 Fed. 331, 628
<b>Continental Paper Bag Co. v. Eastern Paper Bag Co.</b> , 210 U. S. 405, 313, 919, 1024	<b>Cramer v. Singer Mfg. Co.</b> , 147 Fed. 917, 1510
<b>Continental Paper Bag Co. v. Eastern Paper Bag Co.</b> , 210 U. S. 405, 62, 65, 136, 140, 148, 316	<b>Cranson v. Smith</b> , 37 Mich. 309, 1288
<b>Cook v. Sterling Elec. Co.</b> , 150 Fed. 766, 1185	<b>Creighton v. Staggarty</b> , 50 Sup. Ct. 9, 199
<b>Coon v. Wilson</b> , 113 U. S. 268, 181	<b>Crocker, Ex parte</b> , 4 MS. App. Cas. 269, 661
<b>Coop v. Dr. Savage Institute</b> , 47 Fed. 890, 951	<b>Croft v. Richardson</b> , 59 How. Pr. (N. Y.) 356, 1413
<b>Corbin &amp;c. Lock Co. v. Eagle Lock Co.</b> , 150 U. S. 38, 412, 1046, 1048	<b>Crosby Valve Co. v. Safety Valve Co.</b> , 141 U. S. 454, 1698
<b>Cornell, Ex parte</b> 1 O. G. 573, 120	<b>Croskey v. Atterbury</b> , 9 App. (D. C.) 207, 778
<b>Corning v. Burden</b> , 15 How. (U. S.) 252, 339, 1029	<b>Croskey v. Atterbury</b> , 9 App. (D. C.) 207, 48
<b>Corning v. Burden</b> , 15 How. (U. S.) 252, 7, 104, 119, 687, 1014	<b>Crown Cork &amp;c. Co. v. Aluminum Stopper Co.</b> , 108 Fed. 845, 651, 652, 1022, 1139, 1524
<b>Cornish v. Keen, Web. Pat. Cas.</b> 513, 9	<b>Crown Cork &amp;c. Co. v. Aluminum Stopper Co.</b> , 108 Fed. 845, 21, 148, 930, 1429
<b>Corn Planter Cases</b> , 23 Wall. (U. S.) 232, 11	<b>Crown Cork &amp;c. Co. v. Standard Stopper Co.</b> , 136 Fed. 841, 1020, 1059, 1062
<b>Corporation v. Ransom</b> , 23 How. (U. S.) 487, 256	<b>Crown Cork &amp;c. Co. v. Standard Stopper Co.</b> , 136 Fed. 841, 28
<b>Corser v. Brattleboro Overall Co.</b> , 59 Fed. 781, 1425, 1620	<b>Crown Cork &amp;c. Co. v. State</b> , 87 Md. 687, 316
<b>Cortelyou v. Lowe</b> , 111 Fed. 1005, 1404	<b>Cunningham v. Macon &amp;c. Co.</b> , 109 U. S. 446, 1350, 1351
<b>Cote Co., Ex parte</b> , 65 O. G. 1915, 32, 670	<b>Curtis v. Atlas Co.</b> , 136 Fed. 222, 124
<b>Cottier v. Stimson</b> , 18 Fed. 689, 222	
	D
	<b>Dable Grain Shovel Co. v. Flint</b> , 137 U. S. 41, 305
	<b>Dable Grain Shovel Co. v. Flint</b> , 137 U. S. 41, 178, 179
	<b>Dale Tile Mfg. Co. v. Hyatt</b> , 125 U. S. 46, 141

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Dalzell v. Dueber Watch Case</b> Mfg. Co., 149 U. S. 315,	1185	<b>De la Vergne v. Featherstone,</b> 147 U. S. 209,	189, 317
<b>Darcy v. Allein,</b> 11 Coke 84b,	271	<b>Delaware &amp;c. Tel Co. v. Del-</b> <b>aware,</b> 3 U. S. App. 30,	1307
<b>Darcy v. Allein,</b> 11 Coke 84b, v. Allein, Noy. 173,	2 201	<b>Delemater v. Heath,</b> 58 Fed. 414,	1028
<b>Dashiell v. Grosvenor,</b> 66 Fed. 334,	1434	<b>De Loria v. Whitney,</b> 63 Fed. 611,	1423
v. Grosvenor, 162 U. S. 425,	1023	<b>De Loria v. Whitney,</b> 63 Fed. 611,	145
<b>Dashiell v. Tasker,</b> 21 App. (D. C.) 64,	784	<b>Denning &amp;c. Fence Co. v.</b> <b>American &amp;c. Wire Co.,</b> 169 Fed. 793,	123
<b>David v. Park,</b> 103 Mass. 501,	199	<b>Delsions v. La Compagnie</b> <b>Generale Transatlantique,</b> 202 U. S. 622,	923
<b>Davin,</b> 100 O. G. 452,	129	<b>Detroit United R. Co. v. Nich-</b> <b>ols,</b> 165 Fed. 289,	219
<b>Davis v. Palmer,</b> 2 Brock (U. S.) 298,	13	<b>De Valle Da Costa v. South-</b> <b>ern Pac. Co.,</b> 167 Fed. 654.	220
v. Parkman, 71 Fed. 961,	1051	<b>Devlin v. Paynter,</b> 64 Fed. 398,	1428
<b>Davis Elec. Works v. Edison</b> <b>Elec. Light Co.,</b> 60 Fed. 276, 250,	1266	<b>Devlin v. Paynter,</b> 64 Fed. 398, 67, 79,	159
<b>Davock v. Chicago &amp; N. W.</b> <b>R. Co.,</b> 69 Fed. 468,	951	<b>DeWallace v. Scott,</b> 15 App. (D. C.) 157,	784
<b>Davoll v. Brown,</b> 7 Fed. Cas. No. 3, 662,	317	<b>Dey Time-Register Co. v.</b> <b>Bundy,</b> 169 Fed. 807,	124
<b>Day v. Fair Haven &amp;c. R. Co.,</b> 132 U. S. 98,	1030	<b>Dey Time-Register Co. v. Syr-</b> <b>acuse Time Recorder Co.,</b> 161 Fed. 111,	1026
<b>Dayton &amp;c. Motor Co. v.</b> <b>Westinghouse &amp;c. Mfg. Co.,</b> 118 Fed. 562,	635, 1056	<b>Diamond Rubber Tire Co. v.</b> <b>Consolidated Rubber Tire</b> <b>Co.,</b> 220 U. S. 428,	934
<b>Dayton &amp;c. Motor Co. v.</b> <b>Westinghouse &amp;c. Mfg. Co.,</b> 118 Fed. 562,	108	<b>Diamond Rubber Tire Co. v.</b> <b>Consolidated Rubber Tire</b> <b>Co.,</b> 220 U. S. 428.	74, 146, 171
<b>De Baussett, Ex parte,</b> 43 O. G. 1583,	10	<b>Diamond &amp;c. Iron Co. v.</b> <b>Goldie,</b> 84 Fed. 972,	1041
<b>Dececo Co. v. Geo. E. Gil-</b> <b>christ Co.,</b> 125 Fed. 293,	646, 1033	<b>Dick v. Oil Well Co.,</b> 25 Fed. 105,	951
<b>Dececo Co. v. Geo. E. Gil-</b> <b>christ,</b> 125 Fed. 293,	129	<b>Dickerson v. Matheson,</b> 57 Fed. 524,	1434
<b>Decker, In re,</b> 36 App. (D. C.) 104,	115	v. Tinling. 84 Fed. 192,	1434
<b>Dederick v. Fox,</b> 56 Fed. 714,	21	<b>Diedrich v. Agricultural Co.,</b> 26 Fed. 763.	1173
<b>Deere v. J. I. Case Plow</b> <b>Works,</b> 56 Fed. 841,	84	<b>Dilg, In re,</b> 25 App. (D. C.) 9,	691
<b>Deere &amp;c. Co. v. Dowagiac</b> <b>Mfg. Co.,</b> 153 Fed. 177,	1534	<b>Dilg v. Moore,</b> 34 App. (D. C.) 106,	113
<b>Deering v. Winona Harvester</b> <b>Works,</b> 155 U. S. 286,	1069, 1072	v. London Small Arms Co., L. R. 10 Q. B. 130.	1348
<b>Deering v. Winona Harvester</b> <b>Works,</b> 155 U. S. 286.	95, 1054	<b>Dixon Wood Co. v. Pfeifer,</b> 55 Fed. 390,	940
<b>Delamar v. Delamar Min. Co.,</b> 117 Fed. 240,	1031		
<b>DeLaval Separator Co. v. Ver-</b> <b>mont Farm Mach. Co.,</b> 135 Fed. 772,	658		

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

Dobson v. Dorman, 118 U. S. 10, 732	Dunbar v. Eastern Elev. Co., 81 Fed. 201, 568
v. Hartford Carpet Co., 114 U. S. 439, 731	v. Myers, 94 U. S. 187, 544, 1145
Dobson v. Hartford Carpet Co., 114 U. S. 439, 732	Dunbar v. Myers, 94 U. S. 187, 570
Dobson v. Lees, 137 U. S. 258, 692, 1142	Dunlap v. Willbrandt &c. Mfg. Co., 151 Fed. 223, 1425
Dodge, 125 O. G. 665, 129	Dunlap v. Willbrandt &c. Mfg. Co., 151 Fed. 223, 63, 66
Dodge v. Fowler, 11 App. (D. C.) 592, 785	Dunn Mfg. Co. v. Standard Comp. Scale Co., 163 Fed. 521, 641
Dodge Coal Storage Co. v. New York Cent. & H. R. Co., 139 Fed. 976, 29	Duplex Print. Press Co. v. Cambell Print. Press &c. Co., 69 Fed. 250, 1508
Doig v. Morgan Mach. Co., 122 Fed. 460, 645	Durand v. Schulze, 61 Fed. 819, 962, 1026
Donallan v. Tannage Patent Co., 79 Fed. 385, 1515	Durand v. Schulze, 61 Fed. 819, 9, 163
Donk, 119 O. G. 965, 128	Durham v. Seymour, 6 App. (D. C.) 78, 92
Donovan, Ex parte, 52 O. G. 309, 696	
Dorsey Rake Co. v. Bradley Mfg. Co., 12 Blatchf. (U. S.) 202, 1246	E
Dosselman, In re. 37 App. (D. C.) 211, 118	Eagleton Mfg. Co. v. West &c. Mfg. Co., 111 U. S. 490, 694
Double-Pointed Tack Co. v. Two Rivers Mfg. Co., 109 U. S. 117, 557	Eagleton Mfg. Co. v. West &c. Mfg. Co., 2 Fed. 774, 914
Doville v. Moore, Dav. Pat. Cas. 361, 153	Eames v. Andrews, 112 U. S. 40, 389, 939, 943, 1104
Dowagiac Mfg. Co. v. Minne- sota Moline Plow Co., 118 Fed. 136, 1061, 1422	Eames v. Godfrey, 68 U. S. 78, 1422
v. Superior Drill Co., 115 Fed. 886, 1430	Eames v. Worchester Poly- technic Institute, 123 Fed. 67, 631
Dowers v. Richards, 151 U. S. 658, 1300	Eastern Dynamite Co. v. Key- stone Powder Mfg. Co., 164 Fed. 47, 123, 189, 190
Downton v. Yaeger Mill Co., 108 U. S. 466, 389	Eastern Paper Bag Co. v. Con- tinental Paper Bag Co., 142 Fed. 479, 500, 663
Draper v. Hatfield, 124 Mass. 53, 1174	v. Standard Paper Bag Co., 30 Fed. 63, 25, 107, 390, 401, 421, 435
Draper Co. v. American Loom Co., 161 Fed. 728, 1050, 1063, 1071, 1505	Eastman v. New York, 134 Fed. 844, 590, 692
Drawbaugh, Ex parte, 67 O. G. 929, 20	Eastwood, In re, 33 App. (D. C.) 291, 516
Dryfoss v. Weise, 124 U. S. 270, 63	Eastwood, In re. 33 App. (D. C.) 291, 73
Dubois v. Kirk, 158 U. S. 58, 1731	Eaton v. Lewis, 115 Fed. 635, 41
Dueber Watch Case Mfg. Co. v. Robbins, 75 Fed. 17, 1277	Eby v. King, 158 U. S. 366, 1138, 1142
Duer v. Corbin &c. Lock Co., 149 U. S. 216, 1054	Ecaubert v. Appleton, 67 Fed. 917, 838, 1512, 1516, 1732
Duke v. St. Louis Co., 172 Fed. 684, 229	

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Eclipse Bicycle Co. v. Farrow,</b> 199 U. S. 581,	1702	<b>Eldred v. Kirkland,</b> 130 Fed. 342,	146, 1332
<b>Eclipse Mfg. Co. v. Adkins,</b> 36 Fed. 554,	951	<b>Electrical Accumulator Co. v.</b> <b>Brush Elec. Co.,</b> 52 Fed. 130,	1016, 1073
<b>Economy &amp;c. Heater Co. v.</b> <b>Lamprey Boiler &amp;c. Co.,</b> 65 Fed. 1000,	695	<b>Electrical Accumulator Co. v.</b> <b>Brush Elec. Co.,</b> 52 Fed. 130,	28
<b>Eddleblute,</b> 52 O. G. 751,	696	<b>Electric Gas Lighting Co. v.</b> <b>Boston Elec. Co.,</b> 139 U. S.	481, 652, 1035. 1143
<b>Edison v. American Muto-</b> <b>scope Co.,</b> 114 Fed. 926,	1067, 1070	<b>Electric Mfg. Co. v. Edison</b> <b>Elec. Light Co.,</b> 61 Fed. 834,	1595, 1618
<b>v. Ira M. Smith Mercantile</b> <b>Co.,</b> 188 Fed. 925,	1272	<b>Electric Mfg. Co. v. Edison</b> <b>Elec. Light Co.,</b> 61 Fed.	834, 249, 1491, 1619
<b>Edison v. Ira M. Smith Mer-</b> <b>cantile Co.,</b> 188 Fed. 925,	196	<b>Electric R. Signal Co. v. Hall</b> <b>R. Signal Co.,</b> 114 U. S. 87,	1421
<b>v. Klaber,</b> 38 Fed. 744,	390	<b>Electric Renovator Mfg. Co. v</b> <b>Vacuum Cleaner Co.,</b> 189 Fed. 754,	1414
<b>Edison Elec. Light Co. v. Bea-</b> <b>con Vacuum &amp;c. Co.,</b> 54 Fed. 678,	1491	<b>Electric Smelting &amp;c. Co. v.</b> <b>Pittsburgh Reduction Co.,</b>	125 Fed. 926, 1026
<b>v. Bloomingdale,</b> 65 Fed. 212,	186	<b>Electric Telegraph Co. v.</b> <b>Brett,</b> 10 C. B. 838,	153
<b>v. Buckeye Electric Co.,</b> 59 Fed. 691,	186	<b>Electric &amp;c. Aluminum Co. v.</b> <b>Carborundum Co.,</b> 102 Fed.	618, 837
<b>v. Columbia Incandescent</b> <b>Lamp Co.,</b> 56 Fed. 496,	1596	<b>Elgin &amp;c. Tub Co. v. Cream-</b> <b>ery Pkg. Mfg. Co.,</b> 80 Fed.	293, 1277
<b>Edison Elec. Light Co. v. Mt.</b> <b>Morris Elec. Light Co.,</b> 58 Fed. 572,	1621	<b>Elgin &amp;c. Tub Co. v. Cream-</b> <b>ery Pkg. Mfg. Co.,</b> 80 Fed.	293, 1023
<b>Edison Elec. Light Co. v. Mt.</b> <b>Morris Elec. Light Co.,</b> 57 Fed. 642,	930	<b>Elizabeth v. American Nich-</b> <b>olson Pavement Co.,</b> 97 U. S.	126, 584, 1677, 1705
<b>Edison Elec. Light Co. v.</b> <b>Sawyer-Man Elec. Co.,</b> 53 Fed. 592,	1481	<b>Elizabeth v. American Nichol-</b> <b>son Pavement Co.,</b> 97 U.	S. 126, 20, 258, 405, 1356, 1357, 1696, 1698, 1706
<b>v. United States Elec.</b> <b>Lighting Co.,</b> 52 Fed. 300,	1020	<b>Elliott v. Wiltz,</b> 107 U. S.	711, 1350
<b>Edison Elec. Light Co., v.</b> <b>United States Elec. Lighting</b> <b>Co.,</b> 52 Fed. 300.	13, 131, 186,	<b>Ellis, In re,</b> 37 App. (D. C.)	203, 118
<b>Edmunds v. Illinois Cent. R.</b> <b>Co.,</b> 80 Fed. 78,	221	<b>Elmore v. Grymes,</b> 1 Pet. (U.	S.) 469, 217, 225
<b>Egan v. Hart,</b> 165 U. S. 188,	1300	<b>Emack v. Kane,</b> 34 Fed. 46,	1409, 1413, 1418
<b>Egbert v. Lippmann,</b> 104 U. S. 333,	587	<b>Enameling Co., Ex parte,</b> 201 U. S. 156,	253
<b>Egbert v. Lippmann,</b> 104 U. S. 333,	20	<b>Ertel v. Stahl,</b> 65 Fed. 517,	1616
<b>Elbs v. Rochester Egg-Car-</b> <b>rier Co.,</b> 203 Fed. 705,	158	<b>Estey v. Burdett,</b> 109 U. S.	633, 631
<b>Eldred v. Breitweiser,</b> 132 Fed. 251,	146		
<b>v. Kessler,</b> 106 Fed. 509,	146, 1332		
<b>Eldred v. Kirkland,</b> 130 Fed. 342,	646		

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

Estey v. Burdett, 109 U. S. 633, 1486	Florsheim v. Shilling, 137 U. S. 64, 84
Evans v. Eaton, 3 Wheat. (U. S.) 454, 1454	Flower v. Detroit, 127 U. S. 563, 1137
v. Eaton, 7 Wheat. (U. S.) 356, 1024	Folding Bed Cases, 157 U. S. 659, 1263
v. Rood. 99 Fed. 990, 1030	Fond du Lac County v. May, 137 U. S. 395, 226, 538
v. Suess &c. Glass Co., 83 Fed. 706, 1513	Foote v. Silsby, 1 Blatchf. (U. S.) 445, 323
Ewing v. Burnham, 74 Fed. 384, 220	Foote v. Silsby, 1 Blatch. (U. S.) 545, 234
Excelsior Wooden Pipe Co. v. Allen, 104 Fed. 533, 1503	v. Silsby, 2 Blatchf. (U. S.) 260, 61
v. Pacific Bridge Co., 185 U. S. 282, 1279, 1460	Forbush v. Cook, 2 Fish. (U. S.) 669, 84
Excelsior Wooden Pipe Co. v. Pacific Bridge Co., 185 U. S. 282, 142, 1262	Forehand v. United States, 23 Ct. Cl. (U. S.) 477, 204
Excelsior Wooden Pipe Co. v. Seattle, 117 Fed. 140, 1516	Forest v. Chase, 37 App. (D. C.) 179, 181
Expanded Metal Co. v. Brad- ford, 214 U. S. 365, 426	Forrest City &c. Mfg. Co. v. Barnhard, 176 Fed. 561, 96
Expanded Metal Co. v. Brand- ford, 214 U. S. 365, 8, 14, 105, 121, 176	Forsyth v. Garlock, 142 Fed. 461, 132
F	Fort Scott v. W. G. Eads Brokerage Co., 117 Fed. 51, 229
Fairbanks &c. Co. v. Stickney, 123 Fed. 79, 641, 1015	Fowler v. Dodge, 85 O. G. 1584, 671
Faries Mfg. Co. v. Brown, 121 Fed. 547, 1067	Fowler v. New York, 121 Fed. 747, 571, 1518
Farmer v. Brush, 17 O. G. 150, 23	Fowler v. New York, 121 Fed. 747, 538
Farmers' Friend Co. v. Chal- lenge Co., 128 U. S. 506, 181	Fox v. Perkins, 52 Fed. 205, 129, 1051
Farmers' Mfg. Co. v. Sprunks Mfg. Co., 127 Fed. 691, 1069	Frankfort v. Pepper, 26 Fed. 336, 193
Faultless Rubber Co. v. Star Rubber Co., 202 Fed. 927, 158	Franklin v. Illinois Mould. Co., 128 Fed. 48, 182
Fay v. Cordesman, 109 U. S. 408, 1036, 1423	Franklin Brass Co. v. Phoenix Assur. Co., 65 Fed. 773, 228
Fay v. Cordesman, 109 U. S. 408, 63	Frasch, Ex parte, 192 U. S. 566, 1499
Feather v. Queen, 6 B. & S. 257, 1348, 1350	Frasch v. Moore, 211 U. S. 1, 1498
Fefel v. Stocker, 17 App. (D. C.) 317, 774, 785	Freeman v. Asmus, 145 U. S. 226, 1142
Filter Co. v. Jackson, 140 Fed. 340, 930	Fresno &c. Pack. Co. v. Fruit Cleaning Co., 101 Fed. 826, 1180
Fire Ins. Assn. v. Wickham, 128 U. S. 426, 1493	Fried. Krupp-Aktien-Gesell- schaft v. Midvale Steel Co., 191 Fed. 588, 315
Fishburn v. Chicago, M. & St. P. R. Co., 137 U. S. 60, 229	Frost Co. v. Cohn, 119 Fed. 505, 650
Fitch v. Bragg, 8 Fed. 588, 317	Fullagar, In re, 32 App. (D. C.) 222, 799
Florsheim v. Schilling, 137 U. S. 64, 642	Fullagar, In re, 32 App. (D. C.) 222, 52

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Fuller v. Berger</b> , 120 Fed. 274, 601	<b>German Ins. Co. v. Frederick</b> , 58 Fed. 144. 228
<b>Fuller v. Berger</b> , 120 Fed. 274, 10, 930	<b>Gibbons v. United States</b> , 8 Wall. (U. S.) 269, 1349
<b>Fullerton v. Anderson</b> , 166 Fed. 443, 166	<b>Giblin v. McMullen</b> , L. R. 2 P. C. 335, 228
<b>G</b>	
<b>Gage v. Herring</b> , 107 U. S. 640, 1145	<b>Gilbert v. Knobbe</b> , 70 N. Y. 361, 316
<b>Gage v. Herring</b> , 107 U. S. 640, 1143	<b>Gill v. United States</b> , 160 U. S. 426, 1278, 1359
<b>Gallagher v. Hastings</b> , 21 App. (D. C.) 88, 50	<b>Gill v. United States</b> , 160 U. S. 426, 152, 194, 1242, 1318
<b>v. Hien</b> , 25 App. (D. C.) 77, 47	<b>Gill v. Wells</b> , 89 U. S. 1, 643, 1034, 1144
<b>Gally v. Colt's &amp;c. Fire Arms Mfg. Co.</b> , 30 Fed. 118, 1427	<b>Gimbel v. Hogg</b> , 97 Fed. 791, 720
<b>Gamewell Fire-Alarm Tel. Co. v. Brooklyn</b> , 14 Fed. 255, 206	<b>Globe Nail Co. v. United States Horse Nail Co.</b> , 19 Fed. 819, 107, 109, 389
<b>Gamewell Fire Alarm Tel. Co. v. Municipal Signal Co.</b> , 61 Fed. 208, 1508	<b>Globe Newspaper Co. v. Walker</b> , 210 U. S. 356, 223
<b>Gandy v. Main Belting Co.</b> , 143 U. S. 587, 526	<b>Globe-Wernicke Co. v. Fred Macey Co.</b> , 119 Fed. 696, 1062, 1419
<b>Gandy v. Main Belting Co.</b> , 143 U. S. 587, 110	<b>Godfrey v. Eames</b> , 68 U. S. 317, 650
<b>Garretson v. Clark</b> , 111 U. S. 120, 1641	<b>Godfrey v. Eames</b> , 68 U. S. 317, 21
<b>Garretson v. Clark</b> , 111 U. S. 120, 254, 255, 257, 259, 1672, 1697, 1698, 1706	<b>Godson</b> , 175 Coryton 262, 201
<b>Gasser</b> , C. D. (1880) 94, 696	<b>Goeble v. American R. Supply Co.</b> , 55 Fed. 825, 951
<b>Gates Iron Works v. Fraser</b> , 55 Fed. 409, 1053	<b>Gold v. Gold</b> , 34 App. (D. C.) 229, 807
<b>Gauge v. Kellog</b> , 23 Fed. 891, 419	<b>Gold v. Gold</b> , 34 App. (D. C.) 229, 51, 52, 95
<b>Gayler v. Wilder</b> , 10 How. (U. S.) 477, 307, 1149	<b>Goldie v. Diamond State Iron Co.</b> , 64 Fed. 237, 390
<b>Gayler v. Wilder</b> , 10 How. (U. S.) 477, 179, 191, 1157, 1244	<b>Gompers Case, The</b> , 221 U. S. 492, 261, 1723, 1724
<b>Gedge v. Cromwell</b> , 19 App. (D. C.) 192, 50	<b>Goodyear v. Beverly Rubber Co.</b> , 1 Cliff. (U. S.) 348, 1255
<b>General Elec. Co. v. Bullock Elec. Mfg. Co.</b> , 152 Fed. 427, 634, 1017	<b>v. Central R. Co.</b> , 2 Wall. Jr. (U. S.) 356, 155, 316, 1340
<b>General Elec. Co. v. International Specialty Co.</b> , 126 Fed. 755, 1051	<b>v. Congress Rubber Co.</b> , 3 Blatchf. (U. S.) 449, 1260
<b>General Elec. Co. v. Wagner Elec. Mfg. Co.</b> , 130 Fed. 772, 1064	<b>v. Day</b> , 2 Wall. Jr. (U. S.) 296, 233
<b>General Fire &amp;c. Co. v. Mal-lers</b> , 110 Fed. 529, 1024	<b>v. Hulihan</b> , 2 Hughes (U. S.) 492, 206
<b>General Gaslight Co. v. Match-less Mfg. Co.</b> , 129 Fed. 137, 723	<b>v. Rust</b> , 6 Blatchf. (U. S.) 229, 155
<b>Germain v. Wilgus</b> , 67 Fed. 600, 931	<b>v. Union Rubber Co.</b> , 4 Blatchf. (U. S.) 63, 1260
<b>German Bank v. United States</b> , 148 U. S. 573, 1349	<b>Goodyear Dental &amp;c. Co. v. Davis</b> , 102 U. S. 222, 1139
	<b>Goodyear Dental &amp;c. Co. v. Davis</b> , 102 U. S. 222, 8, 69



Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Goodyear &amp;c. Rubber Co. v. Rubber Tire Wheel Co.,</b> 116 Fed. 363,	633	<b>Griswold v. Harker,</b> 62 Fed. 389,	1429
<b>Goodyear &amp;c. Rubber Co. v. Rubber Tire Wheel Co.,</b> 164 Fed. 869.	147	<b>Griswold v. Harker,</b> 62 Fed. 389.	630, 919
<b>Goodyear Shoe Machinery Co. v. Jackson,</b> 112 Fed. 146,	1366	<b>Groth v. International Postal Supply Co.,</b> 61 Fed. 284,	1027
<b>Gorham Mfg. Co. v. White,</b> 81 U. S. 511.	41	<b>Guarantee &amp;c. Deposit Co. v. New Haven Gas-Light Co.,</b> 39 Fed. 268.	390
<b>Goshen Sweeper Co. v. Bissell Carpet Sweeper Co.,</b> 72 Fed. 67,	629, 1016	<b>Gunther v. Liverpool &amp;c. Ins. Co.,</b> 34 Fed. 501.	224
<b>Goshen Sweeper Co. v. Bissell Carpet Sweeper Co.,</b> 72 Fed. 67,	94	H	
<b>v. Bissell Carpet Sweeper Co.,</b> 37 U. S. App. 555,	512	<b>Haffcke v. Clark,</b> 50 Fed. 531,	1211
<b>Goss Printing-Press Co. v. Scott,</b> 108 Fed. 253,	551	<b>Haffcke v. Clark,</b> 50 Fed. 531,	198
<b>Goss Printing-Press Co. v. Scott,</b> 108 Fed. 253.	17	<b>Hagood v. Sothern,</b> 117 U. S. 52,	1350
<b>Gottfried v. Best,</b> Fed. Cas. No. 5,633.	663	<b>Hahn, Ex parte,</b> 8 O. G. 597,	119
<b>Gould v. Rees,</b> 15 Wall. (U. S.) 187.	643	<b>Hailes v. Albany Stove Co.,</b> 123 U. S. 582,	1144
<b>Graff v. Webster,</b> 195 Fed. 522,	731	<b>Hailes v. Van Wormer,</b> 20 Wall. (U. S.) 353,	84, 555, 852
<b>Graham v. Geneva Lake &amp;c. Mfg. Co.,</b> 11 Fed. 138.	29	<b>Halfpenny, Ex parte,</b> 73 O. G. 1135,	688
<b>v. McCormick,</b> 11 Fed. 859.	29	<b>Halfpenny, Ex parte,</b> 73 O. G. 1135,	38
<b>Grand Rapids v. Haney,</b> 92 Mich. 558.	1413	<b>Halfpenny, Ex parte,</b> 72 O. G. 1135,	119, 130
<b>Grand Rapids v. Warren,</b> 196 Fed. 892,	1610	<b>Halfpenny, Ex parte,</b> 53 MS. Dec. 489,	687
<b>Grand Rapids v. Warren,</b> 196 Fed. 892.	252	<b>Hall v. Frank,</b> 195 Fed. 946,	732
<b>Grant v. Raymond,</b> 6 Pet. (U. S.) 218,	313, 1509	<b>Hall v. MacNeale,</b> 107 U. S. 90,	589
<b>Grant v. Raymond,</b> 6 Pet. (U. S.) 218.	135, 136, 535, 929, 1250, 1266	<b>Hall Signal Co. v. General R. Signal Co.,</b> 153 Fed. 907,	1606, 1617
<b>Gray, Ex parte,</b> 1877 C. D. 18,	120	<b>Hall Signal Co. v. General R. Signal Co.,</b> 153 Fed. 907,	250
<b>Gray, Ex parte,</b> 114 O. G. 543.	41, 731	<b>v. Union Switch &amp;c. Co.,</b> 115 Fed. 638,	662
<b>Gray v. Grimberg,</b> 159 Fed. 138,	1506	<b>Hammerschlag Mfg. Co. v. Bancroft,</b> 32 Fed. 585.	389
<b>Gray v. Hale,</b> 1871 C. D. 129.	23	<b>Hammond v. Hart,</b> 83 O. G. 743,	44, 53
<b>Greenwald Bros. Inc. v. Enochs,</b> 183 Fed. 583.	97	<b>Hancock Inspirator Co. v. Jenks,</b> 21 Fed. 911,	94
<b>Griffin v. Swenson,</b> 15 App. (D. C.) 135,	777	<b>Hanks Dental Assn. v. International Tooth Crown Co.,</b> 194 U. S. 303,	1523
<b>Griffin v. Swenson,</b> 15 App. (D. C.) 135,	49	<b>Hanlon v. Primrose,</b> 56 Fed. 600,	951
		<b>Hans v. Louisiana,</b> 134 U. S. 1,	1350
		<b>Hapgood v. Hewitt,</b> 119 U. S. 226,	1242
		<b>Harbeck, In re,</b> 191 O. G. 586,	72

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

<b>Harder v. United States Piling Co.</b> , 160 Fed. 463, 1027	<b>Henry v. Dick</b> , 224 U. S. 1, 1258
<b>Hardinge Conical Mill Co. v. Abbe Engineering Co.</b> , 195 Fed. 936, 1005	<b>Henry v. Dick</b> , 224 U. S. 1, 140, 195, 197, 199
<b>Hart v. Ten Eyck</b> , 2 Johns. Ch. (N. Y.) 108, 254, 1627	<b>Herault, In re</b> , 29 App. (D. C.) 42, 1098
<b>Hartell v. Tilghman</b> , 99 U. S. 547, 141	<b>Herault, In re</b> , 29 App. (D. C.) 42, 184
<b>Hartman v. Park</b> , 145 Fed. 358, 931	<b>Herbert v. Butler</b> , 97 U. S. 319, 228
<b>Hartshorn, Ex parte</b> , 104 O. G. 1395, 730	<b>Herman v. Youngstown Car Mfg. Co.</b> , 191 Fed. 579, 186
<b>Hartshorn v. Saginaw Barrel Co.</b> , 119 U. S. 664, 1137	<b>Hicks v. Kelsey</b> , 18 Wall. (U. S.) 670, 12, 555
<b>Hart &amp;c. Mfg. Co. v. Anchor Elec. Co.</b> , 92 Fed. 657, 1504	<b>v. Ravcock</b> , 1 Abb. P. C. (N. Y.) 23, 201
<b>Haskell v. Ball</b> , 109 O. G. 2170, 661	<b>Hien, In re</b> , 166 U. S. 432, 699
<b>Hatch v. Moffit</b> , 15 Fed. 252, 419	<b>Hien, In re</b> , 166 U. S. 432, 39
<b>Hatch Storage Battery Co. v. Electric Storage Battery Co.</b> , 100 Fed. 975, 1051	<b>Higgs v. Goodwin</b> , 1 El. Bl. & El. 529, 153
<b>Hawks v. Swett</b> , 4 Hun (N. Y.) 146, 1244	<b>Hill v. Chicago &amp;c. R. Co.</b> , 140 U. S. 52, 1497
<b>Hay v. Heath Cycle Co.</b> , 71 Fed. 411, 1036	<b>v. United States</b> , 9 How. (U. S.) 386, 1349
<b>Hayes-Young Tie Plate Co. v. St. Louis Transit Co.</b> , 137 Fed. 80, 649	<b>v. United States</b> , 149 U. S. 593, 1349
<b>Haynes v. Maltby</b> , 3 D. & E. 438, 198	<b>Hill v. Wooster</b> , 132 U. S. 693, 694, 838
<b>Heald v. Rice</b> , 104 U. S. 749, 977	<b>Hill v. Wooster</b> , 132 U. S. 693, 53
<b>Heap v. Green</b> , 91 Fed. 792, 156	<b>Hillard v. Fisher &amp;c. Typewriter Co.</b> , 159 Fed. 439, 1057, 1067
<b>Heap v. Tremont &amp;c. Mills</b> , 82 Fed. 449, 633, 1035	<b>Hillborn v. Hale Mfg. Co.</b> , 69 Fed. 958, 1048
<b>Heaton &amp;c. Fastener Co. v. Eureka Specialty Co.</b> , 77 Fed. 288, 1243	<b>Hills v. Liverpool Gas Co.</b> , 7 L. T. (N. S.) 537, 153
<b>Heaton &amp;c. Fastener Co. v. Eureka Specialty Co.</b> , 77 Fed. 288, 135, 150, 195, 930, 1404	<b>Hobbie v. Jennison</b> , 149 U. S. 355, 1197
<b>Heaton &amp;c. Fastener Co. v. Schlochtermeyer</b> , 72 Fed. 520, 1517	<b>Hobbie v. Jennison</b> , 149 U. S. 355, 196
<b>Hedrick v. Atchison &amp;c. R. Co.</b> , 167 U. S. 673, 1300	<b>Hobbs v. Beach</b> , 180 U. S. 383, 1050
<b>Hein v. Westinghouse Air Brake Co.</b> , 164 Fed. 79, 220	<b>Hobbs v. Beach</b> , 180 U. S. 383, 125, 176, 1104
<b>Hemolin v. Hardway</b> , 138 Fed. 54, 1020	<b>Hobbs Mfg. Co. v. Gooding</b> , 111 Fed. 403, 1066
<b>Henderson v. Tompkins</b> , 60 Fed. 758, 951	<b>Hocks v. New York &amp;c. R. Co.</b> , 122 Fed. 467, 538
<b>Hendy v. Golden State &amp;c. Iron Wks.</b> , 127 U. S. 376, 1026	<b>Hodges v. Easton</b> , 106 U. S. 408, 216
<b>Henius v. Lublin</b> , 30 Fed. 838, 389	<b>Hodgson v. Dexter</b> , 1 Cranch (U. S.) 345, 1349
	<b>Hoe v. Knap</b> , 27 Fed. 204, 931
	<b>v. Miehle &amp;c. Mfg. Co.</b> , 141 Fed. 112, 931
	<b>Hoe v. Miehle &amp;c. Mfg. Co.</b> , 149 Fed. 213, 1420

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Hoff v. Ironclad Mfg. Co.,</b> 139 U. S. 326, 1068	<b>Hovey v. Rubber Tip Pencil</b> Co., 57 N. Y. 119, 1413
<b>Hoff v. Iron Clad Mfg. Co.,</b> 139 U. S. 326, 390	<b>Howard v. Bowes,</b> 31 App. (D. C.) 619, 47
<b>Hogg v. Emerson,</b> 11 How. (U. S.) 587, 290	<b>Howe v. Williams,</b> 2 Fish. Pat. Cas. 395, 95
<b>Hogg v. Emerson,</b> 11 How. (U. S.) 587, 35	<b>Howe Mach. Co. v. Coffeld</b> Motor Washer Co., 197 Fed. 541, 182
<b>Hohorst v. Hamburg-Ameri-</b> can Packet Co., 84 Fed. 354, 1622	<b>Howe Mach. Co. v. National</b> Needle Co., 134 U. S. 388, 1024
<b>v. Hamburg - American</b> Packet Co., 148 U. S. 262, 1494	<b>Hoyt v. Horne,</b> 145 U. S. 302, 71, 78, 83, 389, 405
<b>Hohorst v. Hamburg-Ameri-</b> can Packet Co., 148 U. S. 262, 1486	<b>H. S. Earle Mfg. Co. v. Clark</b> &c. Co., 154 Fed. 851, 41, 731
<b>Holder, Ex parte,</b> 107 O. G. 833, 128	<b>Hubbell v. United States,</b> 171 U. S. 203, 1508
<b>Hollister v. Benedict &amp;c. Mfg.</b> Co., 113 U. S. 59, 631, 1281	<b>v. United States,</b> 179 U. S. 77, 1044
<b>Hollister v. Benedict &amp;c. Mfg.</b> Co., 113 U. S. 59, 143, 1348	<b>Huber v. Nelson Mfg. Co.,</b> 148 U. S. 270, 1137
<b>Holloway v. Whiteley,</b> 4 Wall. (U. S.) 522, 317	<b>Huber v. Nelson Mfg. Co.,</b> 148 U. S. 270, 54, 63
<b>Holly v. Vergennes Mach. Co.,</b> 9 Blatchf. (U. S.) 327, 1254	<b>Huddart v. Grimshaw,</b> Web. Pat. Cas. 86, 15
<b>Holmes v. McGill,</b> 108 Fed. 238, 1275	<b>Hudson v. Parker,</b> 156 U. S. 281, 218
<b>Holmes v. McGill,</b> 108 Fed. 238, 198	<b>Hughey v. Sullivan,</b> 80 Fed. 72, 220
<b>Holmes v. Truman,</b> 67 Fed. 542, 1707	<b>Hulbert, Ex parte,</b> 63 O. G. 1687, 127
<b>Holt, Ex parte,</b> 68 O. G. 536, 390	<b>Hulett v. Long,</b> 15 App. (D. C.) 284, 690
<b>Holt v. Indiana Mfg. Co.,</b> 176 U. S. 68, 1463	<b>Hull v. Commissioner,</b> 9 O. G. 1339, 671
<b>Holzapfel's Compositions Co.</b> v. Rahtjen's American Com- position Co., 183 U. S. 1, 1427	<b>Humiston v. Stainthorp,</b> 2 Wall. (U. S.) 106, 1486
<b>Horine v. Wende,</b> 29 App. (D. C.) 415, 51	<b>Hunter, C. D. (1889)</b> 218, 696
<b>Hotchkiss v. Greenwood,</b> 11 How. (U. S.) 248, 439	<b>Huntington v. Laidley,</b> 176 U. S. 668, 1463
<b>Hotchkiss v. Greenwood,</b> 11 How. (U. S.) 248, 73, 555	<b>Hunt &amp;c. Pack. Co. v. Cas-</b> sidy, 53 Fed. 257, 1708
<b>Hotel Security Co. v. Lor-</b> raine, 160 Fed. 467, 538	<b>Hunt &amp;c. Pack. Co. v. Cassidy.</b> 53 Fed 257, 209, 1014
<b>Houghton v. Whitin Mach.</b> Works, 153 Fed. 740, 1138	<b>Hulbert,</b> 52 O. G. 1062, 696
<b>Houghton v. Whitin Mach.</b> Works, 153 Fed. 740, 645	<b>Hurlbut v. Schillinger,</b> 103 U. S. 456, 164, 258, 1696
<b>Houser v. Starr,</b> 203 Fed. 264, 83, 129	<b>Hutter v. De Q. Bottle Stop-</b> per Co., 128 Fed. 283, 1420
<b>Houston v. Banker and Ban-</b> nister v. Eastman, 44 O. G. 697, 32, 670	<b>Hutter v. De Q. Bottle Stop-</b> per Co., 128 Fed. 283, 13
	I
	<b>Iagen. In re.</b> 162 O. G. 538, 89
	<b>Ide v. Ball Engine Co.,</b> 144 U. S. 550, 89, 1416

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

<b>Ide v. Trorlicht &amp;c. Carpet Co.</b> , 115 Fed. 137, 642, 649, 1056	<b>Jackson v. Summerfield</b> , 112 O. G. 1212, 50
<b>Ide v. Trorlicht &amp;c. Carpet Co.</b> , 115 Fed. 137, 29, 630, 643, 919, 946	<b>Jacobs v. Baker</b> , 74 U. S. 295, 538
<b>Ideal Stopper Co. v. Crown Cork &amp;c. Co.</b> , 131 Fed. 244, 1063, 1527	<b>James v. Campbell</b> , 104 U. S. 356, 634, 1058, 1083, 1235
<b>Illinois Cent. R. Co. v. Tur-rill</b> , 110 U. S. 301, 1512	<b>James v. Campbell</b> , 104 U. S. 356, 26, 27, 143, 184, 1107, 1348
<b>Improvement &amp; R. Co. v. Munson</b> , 81 U. S. 442, 226, 228	<b>James Heekin Co. v. Baker</b> , 138 Fed. 63, 1421
<b>Incandescent Lamp Patent</b> , 159 U. S. 465, 532	<b>J. D. Park &amp;c. Co. v. Hartman</b> , 153 Fed. 24, 1067
<b>Incandescent Lamp Patent Case</b> , 159 U. S. 465, 112	<b>Jeffrey Mfg. Co. v. Independ-ent Elec. Co.</b> , 83 Fed. 191, 1052
<b>Indiana Mfg. Co. v. J. I. Case Thresh. Mach. Co.</b> , 154 Fed. 365, 1431	<b>Jenner v. Bowen</b> , 139 Fed. 556, 693
<b>Indiana Mfg. Co. v. J. I. Case Thresh. Mach. Co.</b> , 154 Fed. 365, 930	<b>Jewell v. Knight</b> , 123 U. S. 426, 1493
<b>Indiana Mfg. Co. v. Nichols &amp;c. Co.</b> , 190 Fed. 579, 1271	<b>Jewell v. Parr</b> , 13 C. B. 216, 227
<b>Indianapolis &amp; St. L. R. Co. v. Horst</b> , 93 U. S. 291, 219	<b>Jewell Filter Co. v. Jackson</b> , 140 Fed. 340, 1049, 1421
<b>Indurated Fibre Industries Co. v. Grace</b> , 52 Fed. 124, 951	<b>Jewett v. Atwood Suspender Co.</b> , 100 Fed. 647, 314
<b>International Mfg. Co. v. Brammer Mfg. Co.</b> , 138 Fed. 396, 1423	<b>Jewett v. Atwood Suspender Co.</b> , 100 Fed. 647, 1284
<b>International Tel. Mfg. Co. v. Kellogg &amp;c. Supply Co.</b> , 171 Fed. 651, 613	<b>John Kitchen Co. v. Levison</b> , 188 Fed. 658, 538
<b>International Time Rec. Co. v. Dey</b> , 142 Fed. 736, 640	<b>Johnson v. Foos Mfg. Co.</b> , 141 Fed. 73, 1432, 1533, 1731, 1733
<b>International Tooth Crown Co. v. Carmichael</b> , 44 Fed. 350, 1416	<b>Johnson v. Mueser</b> , 212 U. S. 283, 1502
<b>v. Hanks Dental Assn.</b> , 111 Fed. 916, 234, 316	<b>Johnson v. Mueser</b> , 29 App. (D. C.) 61, 804
<b>Interurban R. &amp;c. Co. v. Westinghouse &amp;c. Mfg. Co.</b> , 186 Fed. 170, 251	<b>Johnston, Ex parte</b> , 46 O. G. 1641, 25
<b>Ironclad Mfg. Co. v. Dairy-man's Mfg. Co.</b> , 143 Fed. 512, 1046, 1051	<b>Johnston v. Klopsch</b> , 88 Fed. 692, 222, 223
<b>Iron Silver Min. Co. v. Camp-bell</b> , 135 U. S. 286, 1107	<b>Jones v. Cyphers</b> , 126 Fed. 753, 633, 1525
<b>Isaacs v. Holland</b> , 4 Wash. 54, 931	<b>v. Davis</b> , 138 Fed. 62, 1028
<b>Israel v. Arthur</b> , 152 U. S. 355, 1300	<b>Justices v. United States</b> , 76 U. S. 274, 216
<b>Ives v. Hamilton</b> , 92 U. S. 341, 405	
	<b>K</b>
	<b>Kalamazoo R. Supply Co. v. Duff Mfg. Co.</b> , 113 Fed. 264, 1036, 1061
	<b>Kalem Co. v. Harper</b> , 222 U. S. 55, 1269
	<b>Kasson v. Hetherington</b> , 88 O. G. 1157, 785
	<b>Kay v. Marshall</b> , 2 Web. Pat. Cas. 34, 8
	<b>Keach, In re</b> , 14 R. I. 571, 1284
	<b>Keasbey &amp;c. Co. v. American Magnesia &amp;c. Co.</b> , 143 Fed. 490, 1526

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

<b>Keeler v. Standard Folding Bed Co.</b> , 157 U. S. 659, 1201	<b>Kirchberger v. American &amp; Burner Co.</b> , 128 Fed. 599, 693, 1069, 1073
<b>Keeler v. Standard Folding Bed Co.</b> , 157 U. S. 659, 141, 196, 197	<b>Kirk v. United States</b> , 163 U. S. 49, 179, 307
<b>Keiper v. Equitable Life Assur. Soc.</b> , 159 Fed. 206, 228	<b>Kissinger-Ison v. Bradford Belting Co.</b> , 123 Fed. 91, 1533
<b>Keller</b> , 61 O. G. 1790, 696	<b>Knapp v. Morss</b> , 150 U. S. 221, 850
<b>Kelley v. Ypsilanti &amp; C. Mfg. Co.</b> , 44 Fed. 19, 1413, 1416	<b>Knapp v. Morss</b> , 150 U. S. 224, 1048
<b>Kellogg &amp; C. Supply Co. v. International Tel. Mfg. Co.</b> , 158 Fed. 104, 613	<b>Kneas v. Schuylkill Bank</b> , 4 Wash. (U. S.) 9-12, 10
<b>Kelly v. Clow</b> , 89 Fed. 297, 846	<b>Knight v. Gavit</b> , Fed. Cas. No. 7,884, 17
<b>Kelly v. Clow</b> , 89 Fed. 297, 1046	<b>Knothe, Ex parte</b> , 102 O. G. 1294, 729
<b>v. Flynn</b> , 16 App. (D. C.) 573, 784	<b>Knudsen, Ex parte</b> , 72 O. G. 29, 686
<b>Kendall v. Winsor</b> , 62 U. S. 322, 298	<b>Knudson, Ex parte</b> , 72 O. G. 589, 38, 119, 120
<b>Kennedy v. Hazelton</b> , 128 U. S. 667, 695, 1181	<b>Koalatype Co. v. Hoke</b> , 30 Fed. 444, 951
<b>Kenney v. Bent</b> , 97 Fed. 337, 1062	<b>Kohler v. Kohler</b> , C. D. (1888) 19, 661
<b>Kennon v. Gilmer</b> , 131 U. S. 22, 216	<b>Kokomo Fence Mach. Co. v. Kitselman</b> , 189 U. S. 8, 841
<b>Kern, Ex parte</b> , 105 O. G. 2061, 730	<b>Krementz v. Cottle Co.</b> , 148 U. S. 556, 465
<b>Kessler v. Eldred</b> , 206 U. S. 285, 1332	<b>Kreplik v. Couch Patents Co.</b> , 190 Fed. 565, 1724
<b>Kessler v. Eldred</b> , 206 U. S. 285, 146, 197	<b>Krick v. Jansen</b> , 52 Fed. 823, 951
<b>Keyes v. Pueblo &amp; C. Ref. Co.</b> , 31 Fed. 560, 234	<b>Krupp v. Crozier</b> , 32 App. (D. C.) 1, 143
<b>Keystone Bridge Co. v. Phoenix Iron Co.</b> , 95 U. S. 274, 1521	<b>Kuehmsted v. Farbenfabriken</b> , 179 Fed. 701, 539
<b>Keystone Bridge Co. v. Phoenix Iron Co.</b> , 95 U. S. 274, 63, 64, 66, 69, 79, 83, 163, 863	<b>Kuhlman Elec. Co. v. General Elec. Co.</b> , 147 Fed. 709, 1018
<b>Keystone Mfg. Co. v. Adams</b> , 151 U. S. 139, 56, 69, 1356, 1698	
<b>King v. Platt</b> , 37 N. Y. 155, 316	L
<b>King Ax Co. v. Hubbard</b> , 97 Fed. 795, 1430	<b>Lackawanna Iron &amp; C. Co. v. Davis-Colby Ore &amp; C. Co.</b> , 131 Fed. 68, 1051
<b>King's County &amp; C. Fruit Co. v. United States &amp; C. Raisin Co.</b> , 182 Fed. 59, 81	<b>Lacroix v. Tyberg</b> , 33 App. (D. C.) 586, 130
<b>Kinloch Tel. Co. v. Western Elec. Co.</b> , 113 Fed. 652, 652, 1038, 1421	<b>Lahue</b> , 101 O. G. 448, 129
<b>Kinloch Tel. Co. v. Western Elec. Co.</b> , 113 Fed. 659, 644, 1042, 1510	<b>Lake Shore &amp; M. S. R. Co. v. National &amp; Shoe Co.</b> , 110 U. S. 229, 89
<b>Kinloch Tel. Co. v. Western Elec. Co.</b> , 113 Fed. 659, 630	<b>Lalance &amp; C. Mfg. Co. v. Haberman Mfg. Co.</b> , 59 Fed. 143, 390
<b>Kinnear Mfg. Co. v. Wilson</b> , 142 Fed. 970, 1048	<b>Lambert, Ex parte</b> , 135 O. G. 1581, 38, 691
<b>Kipling v. Putnam</b> , 120 Fed. 631, 180	<b>Lambert &amp; C. Engine Co. v. Lidgerwood Mfg. Co.</b> , 154 Fed. 372, 1043

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

<b>Lamb Knit Goods Co. v. Lamb Glove &amp;c. Co.</b> , 120 Fed. 267, 1144	<b>Leroy v. Tatham</b> , 14 How. (U. S.) 156, 325
<b>Lamson Consol. Store Service Co. v. Hillman</b> , 123 Fed. 416, 930	<b>Leroy v. Tatham</b> , 14 How. (U. S.) 156, 16, 61, 145
<b>Lane v. Wilcox Mfg. Co.</b> , 141 Fed. 1000, 730	<b>Lewin v. Welsbach Light Co.</b> , 81 Fed. 904, 1414
<b>Lane &amp;c. Co. v. Locke</b> , 150 U. S. 193, 1236, 1274	<b>Lewis v. Pennsylvania Steel Co.</b> , 59 Fed. 129, 1026
<b>Lane &amp;c. Co. v. Locke</b> , 150 U. S. 193, 194	<b>Lewis &amp;c. Mach. Co. v. Premi- um Mfg. Co.</b> , 163 Fed. 950, 1063
<b>Langan v. Warren &amp;c. Tool Co.</b> , 184 Fed. 720, 90, 102	<b>Library Bureau v. Macey</b> , 148 Fed. 380, 538
<b>Langford v. United States</b> , 101 U. S. 341, 1349	<b>Library Bureau v. Yawman &amp;c. Mfg. Co.</b> , 147 Fed. 245, 1515
<b>Lanyon Zinc Co. v. Brown</b> , 129 Fed. 912, 1029	<b>Lincoln Iron Works v. Mc- Whirter Co.</b> , 142 Fed. 967, 1071
<b>Lanyon Zinc Co. v. Brown</b> , 129 Fed. 912, 63, 67, 79	<b>Lindemeyer v. Hoffman</b> , 18 App. (D. C.) 1, 47, 772
<b>v. Brown</b> , 119 Fed. 918, 79	<b>Lindsay v. Stein</b> , 10 Fed. 907, 21
<b>Latham v. Armat</b> , 17 App. (D. C.) 333, 774	<b>Little v. Barreme</b> , 2 Cranch (U. S.) 169, 1350
<b>Lau Ow Bew. In re</b> , 141 U. S. 583, 1493	<b>Littlefield v. Perry</b> , 21 Wall. (U. S.) 205, 1152, 1185
<b>Laurel &amp;c. Gas. Co. v. Gal- breath &amp;c. Gas Co.</b> , 165 Fed. 162, 219	<b>Littlefield v. Perry</b> , 21 Wall. (U. S.) 205, 191, 193, 255
<b>Lawrence. Ex parte. C. D.</b> (1869-1871) 83, 90	<b>Liverpool &amp;c. Ins. Co. v. N. &amp; M. Friedman Co.</b> , 133 Fed. 713, 219
<b>Lawther v. Hamilton</b> , 124 U. S. 1, 386	<b>Livingston v. Van Ingen</b> , Fed. Cas. No. 8.420, 299
<b>Lawther v. Hamilton</b> , 124 U. S. 1, 103	<b>Livingston v. Woodworth</b> , 15 How. (U. S.) 546, 1504
<b>Lee v. Blandy. 1 Bond (U. S.) 361, 1172</b>	<b>Livingston v. Woodworth</b> , 15 How. (U. S.) 546, 1263
<b>Leeds &amp;c. Co. v. Victor Talk. Mach. Co.</b> , 213 U. S. 301, 1402	<b>Ljungstrom</b> , 119 O. G. 2235, 129
<b>Leeds &amp;c. Co. v. Victor Talk. Mach. Co.</b> , 213 U. S. 301, 54, 944	<b>Locomotive Works v. Medart</b> , 158 U. S. 68, 511
<b>Lee Injector Mfg. Co. v. Pen- Berthy Injector Co.</b> , 109 Fed. 964, 1732	<b>Loew Filter Co. v. German- American Filter Co.</b> , 107 Fed. 949, 1432
<b>Leggett v. Avery</b> , 101 U. S. 256, 511	<b>Loom Co. v. Higgins</b> , 105 U. S. 580, 837, 1066
<b>Lehigh Mining Co., In re</b> , 156 U. S. 322, 1463	<b>Loom Co. v. Higgins</b> , 105 U. S. 580, 14, 433, 517, 644, 1061
<b>Lehigh Valley Co. v. Mellon</b> , 104 U. S. 112, 63, 64, 67, 159, 865	<b>Loomis v. Hauser</b> , 19 App. (D. C.) 401, 47, 772
<b>Lein v. Myers</b> , 97 Fed. 607, 317	<b>Louisiana v. Jumel</b> , 107 U. S. 711, 1350
<b>Leon. Ex parte</b> , 164 O. G. 250, 128	<b>Lourie Implement Co. v. Len- hart</b> , 130 Fed. 122, 1038, 1429
<b>Lepper v. Randall</b> , 113 Fed. 627, 1042	<b>Lovell v. Lewis</b> , 1 Mass. 186, 10
<b>Lepper v. Randall</b> , 113 Fed. 627, 158	<b>Lovell-McConnell Mfg. Co. v. International Automobile League</b> , 202 Fed. 219, 196
	<b>Lovrein v. Banister</b> , C. D. (1880) 152, 661

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Lowrie v. Taylor, 27 App. (D. C.) 522, 47	McDonald v. Edison, 21 App. (D. C.) 527, 47, 772, 784
Lowry v. Mt. Adams & E. P. I. P. R. Co., 68 Fed. 827, 219	McDowell v. Kurtz, 77 Fed. 206, 1425, 1620
L. Schreiber &c. Co. v. Grimm, 72 Fed. 671, 634, 1023	McDuffee v. Hestonville &c. R. Co., 162 Fed. 36, 1182
v. Grimm, 43 U. S. App. 10, 514	McFarland v. Spencer, 23 Fed. 150, 582
Lull v. Clark, 22 O. G. 1535, 119	McGahey v. Virginia, 135 U. S. 662, 1350, 1354
Lupton v. White, 15 Ves. 432, 254, 1627, 1700	McGourkey v. Toledo &c. R. Co., 146 U. S. 536, 1486
Luten v. Dover Const. Co., 489 Fed. 405, 37	Machine Co. v. Murphy, 97 U. S. 120, 1038
Lynch v. Dryden, C. D. (1873) 73, 84, 86	Machine Co. v. Murphy, 97 U. S. 120, 174, 405
Lyons v. Drucker, 106 Fed. 416, 1020, 1036	McKay v. Jackman, 12 Fed. 615, 419
M	
McArthur v. Gilbert, 110 O. G. 2509, 731	McKay &c. Mach. Co. v. Dizer, 61 Fed. 102, 1041
v. Williamson, 45 Fed. 155, 222	McKeever, In re, 14 Ct. Cl. (U. S.) 396, 143
Macbeath v. Haldimand, 1 T. R. 172, 1349	McKenzie v. Cummings, 24 App. (D. C.) 462, 47
Macbeth v. Gillinder, 54 Fed. 169, 1491	McKnight v. Pohle, 22 App. (D. C.) 219, 46, 750
McBride v. Kingman, 72 Fed. 908, 317	Melay, Ex parte, 49 O. G. 1043, 661
McCarty v. Lehigh Valley R. Co., 160 U. S. 110, 862	Melish v. Roff, 141 U. S. 661, 1486
McCarty v. Lehigh Valley R. Co., 160 U. S. 110, 65, 66	McMichael &c. Mfg. Co. v. Ruth, 128 Fed. 706, 1069
McClain v. Ortmyer, 141 U. S. 419, 12, 24, 64, 65, 79	McMurray v. Mallory, 111 U. S. 97, 1136, 1143
McClurg v. Kingsland, 1 How. (U. S.) 202, 311, 1194	McNeeley v. Williams, 96 Fed. 978, 1144
McClurg v. Kingsland, 1 How. (U. S.) 202, 588	McNeil, In re, 20 App. (D. C.) 294, 91, 92, 102
McCormick v. Robinson, 124 O. G. 2903, 85	McNichols v. Wilson, 42 Iowa 385, 1174
v. Talcott, 20 How. (U. S.) 402, 175, 630, 919	McSherry Mfg. Co. v. Dowagiac Mfg. Co., 101 Fed. 716, 1040
McCormick Harvesting Mach. Co. v. Aultman, 169 U. S. 606, 1107, 1141	McSherry Mfg. Co. v. Dowagiac Mfg. Co., 101 Fed. 716, 80, 83
v. Aultman, 69 Fed. 371, 899, 1053	Magic Ruffle Co. v. Daughlas, 2 Fish. (U. S.) 333, 931
McCormick Harvesting Mach. Co. v. Aultman, 69 Fed. 371, 68, 78, 127, 132, 174	v. Elm City Co., 13 Blatchf. (U. S.) 151, 1260
McCreary v. Pennsylvania Canal Co., 141 U. S. 459, 1647	Magowan v. New York Belt-ing &c. Co., 141 U. S. 332, 628, 1061
McCreary v. Pennsylvania Canal Co., 141 U. S. 459, 27	Magowan v. New York Belt-ing &c. Co., 141 U. S. 332, 472
McCune v. Baltimore &c. R. Co., 154 Fed. 63, 1420	Mahn v. Harwood, 112 U. S. 354, 163

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

<b>Maimen v. Union Special Mach. Co.,</b> 165 Fed. 440, 640, 1530	<b>Maurer v. Dickerson,</b> 113 Fed. 870, 637, 1021
<b>Malignani v. Hill-Wright Elec. Co.,</b> 177 Fed. 430, 627	<b>Maurer v. Dickerson,</b> 113 Fed. 870, 9
<b>Manning v. Cape Ann &amp; Cycle Co.,</b> 108 U. S. 462, 654	<b>May v. Mercer County,</b> 30 Fed. 246, 219, 222
<b>Manning v. German Ins. Co.,</b> 46 C. C. A. 144, 219	<b>Mayall, Ex parte,</b> 4 O. G. 210, 127
<b>Manville Mach. Co. v. Excelsior Needle Co.,</b> 167 Fed. 538, 640	<b>Mead v. Brown,</b> 48 O. G. 397, 661
<b>Marden v. Campbell &amp; Co. Mfg. Co.,</b> 67 Fed. 809, 1514	<b>Meehan v. Valentine,</b> 145 U. S. 611, 224
<b>Market Co. v. Hoffman,</b> 101 U. S. 112, 1472	<b>Menasha &amp; Pulley Co. v. Dodge,</b> 85 Fed. 971, 1619
<b>Market Street Cable R. Co. v. Rowley,</b> 155 U. S. 621, 226	<b>Merchants' Nat. Bank v. State Nat. Bank,</b> 10 Wall. (U. S.) 604, 226, 228
<b>Marsh v. Nichols,</b> 128 U. S. 605, 304	<b>Mergenthaler v. Scudder,</b> 11 App. (D. C.) 264, 748
<b>Marsh v. Nichols,</b> 128 U. S. 605, 179, 186	<b>Mergenthaler v. Scudder,</b> 11 App. (D. C.) 264, 46
<b>Marsh v. Seymour,</b> 97 U. S. 348, 1709	<b>Merrill v. Yeomans,</b> 94 U. S. 568, 8, 63, 64, 66, 163
<b>Marsh v. Seymour,</b> 97 U. S. 348, 1014	<b>Metallic Extraction Co. v. Brown,</b> 104 Fed. 345, 67, 78, 79, 83
<b>Martin &amp; Cash-Carrier Co. v. Martin,</b> 67 Fed. 786, 1276	<b>Mexican Cent. R. Co. Ltd. v. Pickney,</b> 149 U. S. 192, 219
<b>v. Martin,</b> 71 Fed. 519, 1519	<b>Michigan Cent. R. Co. v. Consolidated Car-Heating Co.,</b> 67 Fed. 121, 906
<b>Marvel Co. v. Pearl,</b> 114 Fed. 946, 730	<b>Michigan &amp; Lumber Co. v. Rust,</b> 168 U. S. 589, 1107
<b>Marvin v. Aultman,</b> 46 Fed. 338, 222	<b>Michigan &amp; R. Co. v. Tur- rill,</b> 110 U. S. 301, 1704
<b>Mason v. Hepburn,</b> 13 App. (D. C.) 86, 788	<b>Miller v. Bridgeport Brass Co.,</b> 104 U. S. 350, 1079
<b>Mason v. Hepburn,</b> 13 App. (D. C.) 86, 24, 47, 50, 772, 798	<b>Miller v. Bridgeport Brass Co.,</b> 104 U. S. 350, 183
<b>Masseth v. Johnston,</b> 59 Fed. 612, 930	<b>Miller v. Eagle Mfg. Co.,</b> 151 U. S. 186, 976, 1074
<b>Massie,</b> 113 O. G. 2505, 129	<b>Miller v. Eagle Mfg. Co.,</b> 151 U. S. 186, 27, 68, 69, 167, 1039
<b>Mast v. Dempster Mill Mfg. Co.,</b> 82 Fed. 327, 648	<b>Miller v. Mawhinney Last Co.,</b> 105 Fed. 523, 1034
<b>v. Stover Mfg. Co.,</b> 177 U. S. 485, 506, 1490	<b>Milligan &amp; Glue Co. v. Up- ton,</b> 97 U. S. 3, 638
<b>v. Superior Drill Co.,</b> 154 Fed. 45, 1707	<b>Milloy Elec. Co. v. Thomson- Houston Elec. Co.,</b> 148 Fed. 843, 1139
<b>Matheson v. Campbell,</b> 78 Fed. 910, 1021, 1055	<b>Mills v. Darlington,</b> 38 App. (D. C.) 95, 663
<b>Matheson v. Campbell,</b> 78 Fed. 910, 113, 165	<b>Milner Seating Co. v. Yesbera,</b> 111 Fed. 386, 1517
<b>Matthes v. Burt,</b> 24 App. (D. C.) 265, 795	<b>Milner Seating Co. v. Yesbera,</b> 111 Fed. 386, 727
<b>Matthes v. Burt,</b> 24 App. (D. C.) 265, 798	<b>Milton v. Kingsley,</b> 7 App. (D. C.) 531, 50
<b>Mattullath, In re,</b> 38 App. (D. C.) 497, 697	



Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Milwaukee Carving Co. v. Brunswick - Balke - Collender Co., 126 Fed. 171, 647, 1039	Morton v. New York Eye Infirmary, 2 Fish. P. C. (U. S.) 320. 179, 307
Minnesota &c. Plow Co. v. Dowagiac Mfg. Co., 126 Fed. 746, 1513	Morton Trust Co. v. American Car. &c. Co., 129 Fed. 916, 1531
Mississippi Glass Co. v. Franzen, 143 Fed. 501, 1278	Mosler &c. Lock Co. v. Mosler, 127 U. S. 354, 637
Missouri v. Bell Telephone Co., 23 Fed. 539, 1307	Mosler &c. Lock Co. v. Mosler, 127 U. S. 354, 9, 27, 852
Missouri Pacific R. Co. v. Chicago & A. R. Co., 132 U. S. 191, 229	Mossburg v. Nutter, 135 Fed. 95, 79, 125
Mitchell v. Ewart Mfg. Co., 81 Fed. 390, 1430	Motion Picture Patents Co. v. Yankee Film Co., 192 Fed. 134, 1733
Mitchell v. Hawley, 16 Wall. (U. S.) 544, 1244, 1263	Mott v. Bennett, 2 Fish. (U. S.) 642, 931
Mitchell v. International Tailoring Co., 169 Fed. 145, 1418	Mott Iron Works v. Standard &c. Mfg. Co., 159 Fed. 135, 1065
Mitchell v. International Tailoring Co., 169 Fed. 145, 1416	Morory v. Whitney, 14 Wall. (U. S.) 620, 6, 255
Mitchell v. International Tailoring Co., 170 Fed. 91, 539	Mullen v. Mullen, 50 O. G. 837, 25, 28
Mitchell v. Tilghman, 86 U. S. 287, 628	Muller v. Lodge &c. Tool Co., 77 Fed. 621, 1016, 1053
Model Bottling Co. v. Anheuser, 190 Fed. 573, 522	Munroe v. Railway Appliance Co., 145 Fed. 646, 930
Moore v. Marsh, 74 U. S. 515, 1503	Murphy Mfg. Co. v. Excelsior Car-Roof Co., 76 Fed. 965, 1039, 1424
Moore v. Robbins, 96 U. S. 530, 1107	Murray v. Orr &c. Hardw. Co., 153 Fed. 369, 1703
Moore v. Lockwood, 8 Wall. (U. S.) 230, 405	Mygatt v. M. Schaffer-Flaim Co., 191 Fed. 836, 730
Morgan v. Daniels, 153 U. S. 120, 815	v. Zalinski, 138 Fed. 88, 41, 731
Morgan v. Daniels, 153 U. S. 120, 52	Myers v. Cunningham, 44 Fed. 346, 222
v. United States, 14 Wall. (U. S.) 531, 1349	
Morgan Engineering Co. v. Alliance Mach. Co., 176 Fed. 100, 97	N
Morgan Envelope Co. v. Albany &c. Paper Co., 152 U. S. 425, 1382	Nashville R. Co. v. Duckworth, 82 Fed. 65, 1414
Morgan Envelope Co. v. Albany &c. Paper Co., 152 U. S. 425, 128, 151, 1048	Nathan v. Howard, 143 Fed. 889, 1424, 1430
Morison v. Moat, 9 Hare 241, 177, 178, 180	National Cash Reg. Co. v. American Cash Reg. Co., 53 Fed. 367, 560, 1059
Morley Sew. Mach. Co. v. Lancaster, 129 U. S. 263, 863	National Cash Reg. Co. v. American Cash Reg. Co., 53 Fed. 367, 14, 85, 87
Morley Sew. Mach. Co. v. Lancaster, 129 U. S. 263, 126, 149, 173, 176	National Cash Reg. Co. v. Boston Cash &c. Co., 156 U. S. 502, 481
Morris v. McMillin, 112 U. S. 244, 632	v. Grobet, 153 Fed. 905, 1433
	v. Leland, 94 Fed. 502, 1522
	v New Columbus Watch Co., 129 Fed. 114, 1184

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

National Casket Co. v. Stolts, 157 Fed. 392, 580	Newcomb v. Wood, 97 U. S. 581. 230
National Co. v. Belcher, 71 Fed. 876, 547	New Departure Mfg. Co. v. Sargent, 127 Fed. 152, 1281
National Conduit &c. Co. v. Roevling's Sons Co., 158 Fed. 99, 1047	New Process Fermentation Co. v. Maus, 122 U. S. 413, 348
National Enameling Co., Ex parte. 201 U. S. 156, 1485, 1532	New Process Fermentation Co. v. Maus, 122 U. S. 413, 1073
National Enameling &c. Co. v. New England Enameling Co., 151 Fed. 19, 639, 957, 1025, 1029	Newton v. Buck, 77 Fed. 614, 1181
National Enameling &c. Co. v. New England Enameling Co., 151 Fed. 19, 162	New York v. American Cable R. Co., 60 Fed. 1016, 1170
National Folding &c Paper Co. v. American Paper &c. Co., 55 Fed. 488, 1173	New York v. American Cable R. Co., 60 Fed. 1016, 190 v. American Cable R. Co., 67 O. G. 1334, 1176
National Harrow Co. v. Hench, 83 Fed. 36, 1280	New York Bag Co. v. Union, 32 Fed. 783, 189
National Hollow B. B. Co. v. Interchangeable B. B. Co., 106 Fed. 693, 315, 630, 995, 1040	New York Belting &c. Co. v. New Jersey Car Spring &c. Co., 53 Fed. 810, 731
National Hollow B. B. Co. v. Interchangeable B. B. Co., 106 Fed. 693, 98, 630, 643, 919, 1064	New York Belting &c. Co. v. New Jersey Car Spring &c. Co., 137 U. S. 445. 41, 731, 951
National Newsboard Co. v. Elkhart Egg Case Co., 123 Fed. 431, 1427	New York Belting &c. Co. v. Sierer, 158 Fed. 819, 647, 1062
National Phonograph Co. v. Schlegel, 1268	New York Continental &c. Filtration Co. v. Sullivan, 111 Fed. 179, 220
National &c. Fertilizer Co. v. Swift, 104 Fed. 87, 637, 1072	New York Filter Co. v. Niag- ara Falls Waterworks Co., 80 Fed. 924, 1509
National &c. Mach. Co. v. Daab, 136 Fed. 891, 931	New York Filter Co. v. Schwarzwalder, 58 Fed. 577, 1416
National &c. Mach. Co. v. Hedden, 148 U. S. 482, 1035	Niedenfuhr, Ex parte, 130 O. G. 981, 663
National &c. Paper Co. v. Elsas, 86 Fed. 917, 1708	Noble v. Union River Logging R. Co., 147 U. S. 165, 1107
National Tube Co. v. Aiken, 163 Fed. 254, 640	Noonan v. Chester Park &c. Club Co., 99 Fed. 90, 1277
Neasseth v. Larkin, 111 Fed. 409, 126	Norden v. Spaulding, 24 App. (D. C.) 286, 47
Neidich v. Fosbenner, 108 Fed. 266, 1477	North Carolina v. Temple, 134 U. S. 22, 1350
Neilson v. Hartford, 1 Webs. Pat. Cas. 273-373, 321	Northwood v. Dalzell &c. Co., 100 Fed. 98, 727
Nesmith v. Sheldon, 6 Hcw. (U. S.) 41, 1494	Norton, Ex parte, 22 O. G. 1205, 41, 731
Newall v. Wilson, 2 DeG. M. & G. 282, 1491	Norton v. Jensen, 49 Fed. 859, 1526
Newark Spring Mattress Co. v. Ryan, 102 Fed. 693, 1520	Nudd v. Burrows, 91 U. S. 441, 219
Newcomb v. United States, 671	N. W. Fire Extinguisher Co. v. Philadelphia Fire Extinguisher Co., 1 B. & A. 177, 186
	O
	Ocuppaugh v. Norton, 25 App. (D. C.) 90, 47

Table of cases reported and cited. Cases reported are in black face type.  
 [References are to pages.]

Odiorne v. Amesbury Nail Factory, 2 Mason (U. S.) 28,	27	Paine v. Trask, 5 U. S. App. 283,	1176
Ogle v. Ege, 4 Wash. (U. S.) 584,	233, 931	Painter, Ex parte, 57 O. G. 999,	109
Oliver v. Rumford Chem. Works, 109 U. S. 75,	1244	<b>Palmer v. Brown</b> , 92 Fed. 925,	1057
<b>Olmsted v. Andrews</b> , 77 Fed. 835,	646	<b>v. Corning</b> , 156 U. S. 342,	1015
Opdyke, Ex parte, C. D. (1890) 39,	690	Palmer v. Hutchinson, 6 App. Cas. 619,	1349
Opdyke, Ex parte, 50 O. G. 1293,	111, 130	<b>v. Stevens</b> , 11 Cush. (Mass.) 147,	1174
<b>O'Reilly v. Morse</b> , 15 How. (U. S.) 62,	327, 629	<b>Palmer &amp;c. Tire Co. v. Lozier</b> , 90 Fed. 732,	1057
O'Reilly v. Morse, 15 How. (U. S.) 62,	100, 105	<b>Panzl v. Battle Island Paper Co.</b> , 138 Fed. 48,	1033
<b>O'Rourke Engineering Const. Co. v. McMullen</b> , 160 Fed. 933,	647	<b>Paper Bag Cases</b> , 105 U. S. 766.	1192
<b>Orr &amp;c. Hardware Co. v. Murray</b> , 163 Fed. 54,	1706	<b>Paper Bag Cases</b> , 105 U. S. 766,	194, 1255
Osborn v. Bank of United States, 9 Wheat (U. S.) 738,	1350	<b>Paper Bag Case</b> , 210 U. S. 405,	1266
Osborne, 92 O. G. 1797,	129	<b>Parke-Davis Co. v. Mulford</b> , 189 Fed. 95,	115, 128
Osborne v. Detroit, 28 Fed. 385,	218	<b>Parker v. Haworth</b> , 4 McLean (U. S.) 370,	1172
Oscanyan v. W. R. Arms Co., 103 U. S. 261,	224, 225	<b>v. Hulme</b> , Fed. Cas. No. 10,740,	16, 17
<b>Osgood Dredge Co. v. Metropolitan Dredging Co.</b> , 75 Fed. 670,	1063, 1528	<b>v. Ogdensburgh &amp; L. C. R. Co.</b> , 25 C. C. A. 205,	219
<b>Otis Elevator Co v. Portland Co.</b> , 127 Fed. 557,	1058	<b>v. Stiles</b> , 18 Fed. Cas. No. 10,749,	317
Oval Wood Dish Co. v. Sandy Creek, N. Y., Wood Mfg. Co., 60 Fed. 285,	110, 390	<b>Parker &amp;c. Co. v. Yale Clock Co.</b> , 123 U. S. 87,	1106
Overweight C. Elevator Co. v. Improved Order Red Men's Hall, 94 Fed. 155,	226	<b>Parkinson</b> , Ex parte, C. D. (1871) 251,	710
<b>P</b>			
Pacholder, Ex parte, 51 O. G. 295,	119	<b>Parks v. Booth</b> , 102 U. S. 96,	654, 1709
Pacholder, Ex parte, C. D. (1890) 55,	689	<b>Parks v. Booth</b> , 102 U. S. 96,	95
<b>Packard v. Lacing Stud Co.</b> , 70 Fed. 66,	646, 1023	<b>v. Ross</b> , 11 How. (U. S.) 362,	226
Packet Co. v. Sickles, 19 Wall. (U. S.) 611,	213, 214, 256	<b>Parson v. Colgate</b> , 15 Fed. 600,	19
Page v. Dickerson, 28 Wis. 694,	199	<b>Parsons v. Bedford</b> , 3 Pet. (U. S.) 433,	215, 218
Paine v. Parkhurst, 205 Fed. 740,	188	<b>Parsons v. Seelye</b> , 100 Fed. 452,	1529
<b>Paine v. Trask</b> , 56 Fed. 233,	1478	<b>v. Seelye</b> , 100 Fed. 455,	1017
Paine v. Trask, 56 Fed. 233,	190	<b>Patterson v. Commonwealth</b> , 97 U. S. 501, 200, 1285, 1306,	1355
		<b>Patting v. Spring Valley Coal Co.</b> , 93 Fed. 98,	219
		<b>Paul v. Hess</b> , 24 App. (D. C.) 462,	771
		<b>Paul v. Hess</b> , 24 App. (D. C.) 462,	48
		<b>Paulus v. Buck Mfg. Co.</b> , 129 Fed. 594,	1177
		<b>Peabody v. Norfolk</b> , 98 Mass. 452,	177, 179
		<b>Pearl v. Ocean Mills</b> , Fed Cas. No. 10,876,	939

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Pearson, <i>Ex parte</i> , 50 MS. Dec. 25,	689	Phoenix Knitting Wks. v. Hygienic Fleeced Underwear Co., 194 Fed. 703,	728
Pederson v. D. L. & W. R. Co., 33 Sup. Ct. 648,	229	v. Louer, 194 Fed. 700,	728
<b>Pelton Water Wheel Co. v.</b> <b>Doble</b> , 190 Fed. 760,	574	v. Rich, 194 Fed. 708,	728
<b>Penfield v. Chambers Bros.</b> <b>Co.</b> , 92 Fed. 630,	1430	<b>Pickering v. McCullough</b> , 104 U. S. 310,	555
<b>Penfield v. Chambers Bros.</b> <b>Co.</b> , 92 Fed. 630,	176	<b>Pickering v. McCullough</b> , 104 U. S. 310, 14, 84, 87, 88, 397, 642,	852
<b>Penfield v. Potts</b> , 126 Fed. 475, 1030,	1277	<b>Pilgrim Paper Co.</b> , 125 O. G. 993,	663
<b>Pennock v. Dialogue</b> , 2 Pet. (U. S.) 1,	284	<b>Piper v. Moon</b> , 10 Blatchf. (U. S.) 264.	437
<b>Pennoyer v. McConnaughy</b> . 140 U. S. 1,	1350	<b>Pitts v. Wemple</b> , 1 Biss. (U. S.) 87,	1250
<b>Pennsylvania R. Co. v. Loco-</b> <b>motive Eng. &amp;c. Co.</b> , 110 U. S. 490,	451	v. Wemple, 2 Fish. (U. S.) 11,	930
<b>Penn &amp;c. Mfg. Co. v. Conroy</b> , 159 Fed. 943,	636	<b>Pittsburg Meter Co. v. Pitts-</b> <b>burg Supply Co.</b> , 109 Fed. 644, 1031, 1421, 1424	
<b>People v. Brooklyn</b> , 156 N. Y. 417.	283	<b>Planing Mach. Co. v. Keith</b> , 101 U. S. 479,	609
v. Johnson, 159 N. Y. 70,	1283	<b>Planing Mach. Co. v. Keith</b> , 101 U. S. 479.	22, 653
<b>People's Bank v. Aetna Ins.</b> <b>Co.</b> , 74 Fed. 507.	224, 225	<b>Platt v. Fire Extinguisher</b> <b>Mfg. Co.</b> , 59 Fed. 897,	1273
<b>Perkins v. Hart</b> , 11 Wheat. (U. S.) 237.	1493	<b>Pleasants v. Fant</b> , 22 Wall. (U. S.) 116. 225, 226, 227.	228
<b>Perlman, In re</b> , 186 O. G. 560,	121	<b>Plummer v. Sargent</b> , 120 U. S. 442,	1422
<b>Perry v. Hoskins</b> , 111 Fed. 1002,	730	<b>Podelsak v. McInnerney</b> , 26 App. (D. C.) 399.	52
<b>Peter Conley Mfg. Co. v.</b> <b>Aiken</b> , 203 Fed. 699.	209	<b>Pohl v. Anchor</b> , 134 U. S. 381.	54
<b>Peters v. Hanson</b> , 129 U. S. 541,	852	<b>Poillon v. Schmidt</b> , 6 Blatch. (U. S.) 304.	10
<b>Petri v. Commercial Nat.</b> <b>Bank</b> , 142 U. S. 644.	1472	<b>Poindexter v. Greenhow</b> , 114 U. S. 270.	1352
<b>Petrie v. DeSchweintz</b> , 19 App. (D. C.) 386,	750	<b>Pope v. Clark</b> , 46 Fed. 792.	193
<b>Petrie v. DeSchweintz</b> , 19 App. (D. C.) 386.	45	<b>Pope Mfg. Co. v. Gormully &amp;c.</b> <b>Mfg. Co.</b> , 144 U. S. 248,	1184
<b>Philadelphia &amp;c. R. Co. v.</b> <b>Stimpson</b> , 14 Pet. (U. S.) 448,	627	<b>Pope Mfg. Co. v. Gormully &amp;c.</b> <b>Mfg. Co.</b> , 144 U. S. 248, 129, 1051,	1053
<b>Philadelphia &amp;c. R. Co. v.</b> <b>Stimpson</b> , 14 Pet. (U. S.) 448.	1014	v. Owsley, 27 Fed. 100.	1260
<b>Phillips, Ex parte</b> , 135 O. G. 1801,	128	<b>Porter v. Loudon</b> , 7 App. (D. C.) 64.	48
<b>Phoenix Knitting Wks. v. Hy-</b> <b>gienic Fleeced Underwear</b> <b>Co.</b> , 194 Fed. 696,	727	<b>Porter Needle Co. v. National</b> <b>Needle Co.</b> , 17 Fed. 536. 1265, 1266	
<b>Phoenix Knitting Wks. v. Hy-</b> <b>gienic Fleeced Underwear</b> <b>Co.</b> , 194 Fed. 702.	728	<b>Portland Gold Min. Co. v.</b> <b>Hermann</b> , 160 Fed. 91,	1422
		<b>Potter v. Tone</b> , 36 App. (D. C.) 181.	116
		<b>Potts v. Creager</b> , 155 U. S. 597.	494

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Potts v. Creager, 155 U. S. 597, v. Creager. 97 Fed. 78, 14, 16. 493	<b>Reed Mfg. Co. v. Smith &amp;c. Co., 107 Fed. 719, 1617, 1620</b>
<b>Powder Co. v. Powder Wks., 98 U. S. 126, 1518</b>	<b>Reedy v. Scott, 90 U. S. 352, 1528</b>
Powder Co. v. Powder Wks., 98 U. S. 126, 1102	Rees v. Gould, 15 Wall. (U. S.) 187, 919
Pratt v. Paris Gaslight &c. Co., 168 U. S. 255, 141, 1262	Reese, 113 O. G. 849, 129
Pressed Steel Car Co. v. Han- sen, 137 Fed. 403, 194, 1242	Reeves v. Keystone Bridge Co., 1 O. G. 466, 19
Proctor v. Bennis, L. R. 36 Ch. Div. 740, 149	<b>Regent Mfg. Co. v. Penn Elec Mfg. Co., 121 Fed. 80, 646, 1048</b>
Prouty v. Ruggles, 16 Pet. (U. S.) 336, 138	Regent Mfg. Co. v. Penn Elec. Mfg. Co., 121 Fed. 80, 126
<b>Provident Rubber Co. v. Good- year, 76 U. S. 788, 1068</b>	Reiche v. Smythe, 13 Wall. (U. S.) 162, 1472
Q	
Quincey Mining Co. v. Krause, 151 Fed. 1012, 663	Reichenbach v. Kelley, 17 App. (D. C.) 333, 774
R	
<b>Railroad Co. v. Dubois, 79 U. S. 47, 643</b>	<b>Rein v. Clayton, 37 Fed. 354, 307</b>
Railroad Co. v. Dubois, 79 U. S. 47, 95, 1051	Rein v. Clayton, 37 Fed. 354, 179
v. White, 101 U. S. 98, 1493	Republic Ins. Co. v. Williams, 3 Biss. (U. S.) 370, 219
Railway Co. v. Sayles, 97 U. S. 554, 75, 175, 630, 919, 939, 942	Rice v. Garnhart, 34 Wis. 453, 199
Railway Register Mfg. Co. v. North Hudson C. R. Co., 23 Fed. 593, 186	<b>Rich v. Baldwin, 133 Fed. 920, 1041</b>
Ransom v. Mayor, 1 Fish. (U. S.) 255, 930	Rich v. Close, 8 Blatchf. (U. S.) 41, 154
Ratican, In re, 36 App. (D. C.) 95, 91, 92	<b>Richards v. Chase Elevator Co., 158 U. S. 299, 570</b>
Reckendorfer v. Faber, 92 U. S. 347, 554, 555, 852	Richards v. Chase Elevator Co., 158 U. S. 299, 726, 951
<b>Red Jacket Mfg. Co. v. Davis, 82 Fed. 432, 1432</b>	Richardson v. Noyes, Fed Cas. No. 11, 792, 150
<b>Reece Button-Hole Mach. Co. v. Globe Button-Hole Mach. Co., 61 Fed. 958, 878, 1016</b>	<b>Richardson v. Osborne, 93 Fed. 828, 1507</b>
Reece Button-Hole Mach. Co. v. Globe Button-Hole Mach. Co., 61 Fed. 958, 69, 70, 79, 81, 153, 192	<b>Richmond v. Atwood, 52 Fed. 10, 1514</b>
<b>Reece Folding Mach. Co. v. Fenwick, 140 Fed. 287, 1183</b>	Rickart v. Du Bon, 103 Fed. 863, 10
Reed v. Cutter, 1 Story (U. S.) 590, 46	<b>Ries v. Barth Mfg. Co., 136 Fed. 850, 634</b>
v. Landman, 55 O. G. 1275, 696	<b>Risdon Iron &amp;c. Wks. v. Me- dart, 158 U. S. 68, 390</b>
v. Street, 34 O. G. 339, 186	Risdon Iron &c. Wks. v. Me- dart, 158 U. S. 68, 7, 8, 71, 103, 104, 105, 106, 108, 726
	<b>Robert Gair Co., In re, 196 Fed. 492, 1527</b>
	Roberts, Ex parte, C. D. (1887) 61, 25
	Roberts, Ex parte, 40 O. G. 543, 28
	<b>Roberts v. Bennett, 136 Fed. 193, 710</b>
	Roberts v. Bennett, 136 Fed. 193, 40, 226
	<b>Roberts v. Dickey, 4 Fish. (U. S.) 532, 324</b>

Table of cases reported and cited. Cases reported are in black face type.  
 [References are to pages.]

Roberts v. H. P. Nail Co., 53 Fed. 916,	94	Rubber-Tip Pencil Co. v. Howard, 20 Wall. (U. S.) 498,	555
v. Lewis, 141 U. S. 653,	219	Rubber Tire Wheel Co. v. Milwaukee Rubber Wks. Co., 154 Fed. 358,	314
Roberts v. Ryer, 91 U. S. 150,	492, 1016	Rubber Tire Wheel Co. v. Milwaukee Rubber Wks. Co., 154 Fed. 358,	930
Roberts v. Ryer, 91 U. S. 150.	512	Rudd, Ex parte. 68 O. G. 535.	390
Robertson v. Blake, 94 U. S. 728,	1707	Rude v. Westcott, 130 U. S. 152,	1642
Robinson, Ex parte, 2 Biss. (U. S.) 309.	1283	Rude v. Westcott, 130 U. S. 152,	255
Robins &c. Belt Co. v. American &c. Mach. Co., 145 Fed. 923,	1025	Rumford v. Hecker, Fed. Cas. No. 12, 132.	1416
Rodwell Sign Co. v. Tuchfarber Co., 127 Fed. 138,	1524	Rumford Chemical Works v. Hygienic Chemical Co., 159 Fed. 436,	1429, 1529
Roemer v. Simon, 95 U. S. 214,	648	Rupp &c. Co. v. Elliott, 131 Fed. 730,	1431
v. Peddie, 132 U. S. 313.	1045	Rupp &c. Co. v. Elliott, 131 Fed. 730.	930
Roemer v. Peddie, 132 U. S. 313.	412	Russell, In re, 36 App. (D. C.) 444,	114
Rogers, Ex parte. 125 O. G. 2766,	663	Russell v. Dodge, 93 U. S. 460,	1136
Rogers v. Fitch, 81 Fed. 959,	633, 1015	v. Kern, 69 Fed. 94,	1579
Rogers Typograph Co. v. Mergenthaler Linotype Co., 64 Fed. 799,	1421	v. Place, 94 U. S. 606,	1510
Rolfe v. Hoffman, 26 App. (D. C.) 336,	47	Russell v. United States. U. S. 516,	143
Root v. Lake Shore & M. S. Co., 105 U. S. 189,	1545	Ryan v. Goodwin, 3 Sumn. (U. S.) 514,	59
Root v. Lake Shore & M. S. R. Co., 105 U. S. 189,	231,	Ryder v. Wombwell, L. R. 4 Exch. 32,	228
233, 256, 1356, 1357, 1698.	1700		
Rosell v. Allen, 16 App. (D. C.) 559,	48, 784		
Rosenbach v. Dreyfuss, 2 Fed. 23,	218		
Rosenwasser v. Spieth, 129 U. S. 47,	19		
Ross-Moyer Mfg. Co. v. Randall, 104 Fed. 355,	1054		
Rowe v. Blodgett &c. Co., 112 Fed. 61,	709		
Rowe v. Blodgett &c. Co., 112 Fed. 61,	39		
v. Blodgett &c. Co., 103 Fed. 873.	41		
Royal Metal Mfg. Co. v. Art Metal Works, 121 Fed. 128,	41		
Royer v. Coupe, 29 Fed. 358.	663		
v. Coupe, 146 U. S. 524,	102, 1046, 1048		
v. Schultz Belting Co., 135 U. S. 319.	174		
Rubber Co. v. Goodyear, 9 Wall. (U. S.) 788,	8, 1698		

S

Sadler v. Hoover, 7 How. (U. S.) 646,	1493
St. Charles v. Stookey, 154 Fed. 772.	219
St. Louis Stamping Co. v. Quinby, 15 O. G. 135,	940
St. Paul Plow Works v. Starling, 340 U. S. 184.	198
Samuels v. Borrowscale, 104 Mass. 207.	1174
Sanders v. Hancock, 128 Fed. 424,	639, 1066, 1072
Sanders v. Hancock, 128 Fed. 424.	1051
Santa Clara &c. Lumber Co. v. Prescott, 102 Fed. 501,	1031
Sargent v. Seagraves, Fed. Cas. No. 12365,	1425, 1620

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Saunders, C. D. (1883) 23.	696	Seymour v. Osborne, 11 Wall.	
<b>Saunders v. Allen, 60 Fed.</b>	<b>610, 648</b>	(U. S.) 516,	
Sawin v. Guild,	1265	59, 555, 643, 919, 1014, 1051,	
Sawyer v. Edison, 25 O. G.		1106, 1107	
597,	663	<b>Shaw v. Cooper, 7 Pet. (U. S.)</b>	
<b>Sawyer Spindle Co. v. Carpen-</b>		<b>292,</b>	<b>297, 652</b>
<b>ter, 143 Fed. 976,</b>	<b>613</b>	Sheffield, In re, 64 Fed. 833.	1283
Sawyer Spindle Co. v. Carpen-		Shepard v. Adams, 168 U. S.	
ter, 143 Fed. 976,	54	618,	219
Saxe v. Hammond, 7 O. G.		v. Carrigan, 116 U. S. 593.	
781,	1256	412, 511, 1046	
Sayles v. Chicago, N. W. R.		v. Carrigan, 34 O. G. 1157.	853
Co., 2 Fish. (U. S.) 623.	21	<b>Sherman, Ex parte, 147 O. G.</b>	
<b>Sayre v. Scott, 55 Fed. 971,</b>	<b>1704</b>	<b>237,</b>	<b>730</b>
<b>Schenck v. Singer Mfg. Co., 77</b>		Sherry v. Oceanic Steam Nav.	
<b>Fed. 841,</b>	<b>1065</b>	Co., 72 Fed. 565.	220
Schillinger v. United States.		Sherwood v. Drewson, 29 App.	
155 U. S. 163,	143, 1349	(D. C.) 161,	47
Schneider v. Poultney, 21 Fed.		Shields v. Coleman, 157 U. S.	
399,	1256	168,	1463
<b>Schreiber &amp;c. Mfg. Co. v.</b>		Shumaker v. Security Life &c.	
<b>Adams Co., 117 Fed. 830,</b>	<b>1027</b>	Co., 59 Fed. 112,	228
Schuchhardt v. Allen, 1 Wall.		Sickles v. Falls Co., 2 Fish.	
(U. S.) 368,	227	(U. S.) 202,	119
Schulze-Berge, Ex parte, 42 O.		v. Gloucester Co., 3 Wall.	
G. 293,	731	Jr. (U. S.) 186.	233
<b>Scott v. Fisher &amp;c. Mach. Co.,</b>		Sieber &c. Mfg. Co. v. Chi-	
<b>145 Fed. 915,</b>	<b>1023, 1060</b>	cago Binder &c. Co., 177	
<b>v. Lazell, 160 Fed. 472,</b>	<b>1525</b>	Fed. 439.	663
<b>Seabury v. AmEnde, 152 U.</b>		<b>Siemens-Halske Elec. Co. v.</b>	
<b>S. 561.</b>	<b>522</b>	<b>Duncan Elec. Mfg. Co., 143</b>	
<b>Seal v. Bookkeeper Pub. Co.,</b>		<b>Fed. 157,</b>	<b>1503</b>
<b>130 Fed. 449,</b>	<b>1274</b>	Silverman v. Hendrickson, 19	
Seaman, In re, 4 O. G. 691,		App. (D. C.) 381.	784
710, 730		Simonds, Ex parte, C. D.	
Secretary of Treasury of Unit-		(1870) 23,	120
ed States, In re, 45 Fed.		<b>Simonds Rolling-Mach. Co. v.</b>	
396,	219	<b>Hathorn Mfg. Co., 93 Fed.</b>	
Sendelbach v. Gillette, 22 App.		<b>958,</b>	<b>414</b>
(D. C.) 168,	785	Simonds Rolling-Mach. Co. v.	
<b>Sessions v. Romadka, 145 U.</b>		Hathorn Mfg. Co., 93 Fed.	
<b>S. 29,</b>	<b>1030, 1186, 1630</b>	958.	1051
Sessions v. Romadka, 145 U.		<b>Simplex R. Appliance Co. v.</b>	
S. 29,	35, 81, 174, 255, 405	<b>Pressed Steel Car Co., 189</b>	
Sewall v. Jones, 91 U. S. 171.		<b>Fed. 71,</b>	<b>1116</b>
1019, 1419		v. Wands, 115 Fed. 517,	833
<b>Seymour v. McCormick, 16</b>		Simplex R. Appliance Co. v.	
<b>How. (U. S.) 480,</b>	<b>1541, 1707</b>	Wands, 115 Fed. 517.	53
Seymour v. McCormick, 16		<b>Simpson v. Wilson, 4 How.</b>	
How. (U. S.) 480,		<b>(U. S.) 712,</b>	<b>1158</b>
214, 255, 256		Singer v. Walmsley, 22 Fed.	
<b>Seymour v. Osborne, 11 Wall.</b>		Cas. No. 12900,	317
<b>(U. S.) 516,</b>	<b>628, 1138, 1520</b>	<b>Singer Mfg. Co. v. Cramer,</b>	
		<b>109 Fed. 652,</b>	<b>1505</b>
		v. Cramer, 192 U. S. 265.	1051

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

Singer Mfg. Co. v. Cramer, 192 U. S. 265, v. June Mfg. Co., 163 U. S. 169,	145, 226 1427	Snyder, Ex parte, 22 O. G. 1975,	37, 696
Sirocco Eng. Co. v. Monarch Ventilator Co., 184 Fed. 84.	193	Societe Anonyme Du Filtre v. Allen, 90 Fed. 815.	252
Sizer v. Many, 16 How. (U. S.) 98,	1732	Soehner v. Favorite Stove &c. Co., 84 Fed. 182,	1025
Skinner v. Carpenter, 36 App. (D. C.) 178.	181	Solar Light Co. v. Rubin,	1723
Slawson v. Grand Street R. Co., 107 U. S. 649,	1528	Solomons v. United States, 137 U. S. 342,	1233
Slawson v. Grand Street R. Co., 107 U. S. 649,	570	Solomons v. United States, 137 U. S. 342.	152, 194
Slocum v. New York Life Ins. Co., 228 U. S. 364,	220, 224, 226, 229	Sproull v. Pratt &c. Co., 108 Fed. 963,	1273
Sloss Iron &c. Co. v. South Carolina & G. R. Co., 85 Fed. 133,	224	S. S. White Dental Mfg. Co. v. Mitchell, 188 Fed. 1017,	178, 307
Sly Mfg. Co. v. Russell, 189 Fed. 61,	946	Standard Cartridge Co. v. Pe- ters Cartridge Co., 77 Fed. 630.	838
Sly Mfg. Co. v. Russell, 189 Fed. 61,	133	Standard Comp. Scale Co. v. Computing Scale Co., 126 Fed. 639,	662, 1431
Smith, Ex parte, 130 O. G. 1688,	41, 731	Standard Elev. Co. v. Crane Elev. Co., 56 Fed. 718,	1619
Smith v. Brooks, 24 App. (D. C.) 75,	47	Standard Elev. Co. v. Crane Elev. Co., 56 Fed. 718, 249,	1619
v. Cockrill, 6 Wall. (U. S.) 756,	218	Standard Elev. Co. v. Crane Elev. Co., 76 Fed. 767,	1171, 1509, 1514, 1703
Smith v. Goodyear Dental Vul- canite Co., 93 U. S. 486.	443, 1060	Standard Elev. Co. v. Crane Elev. Co., 76 Fed. 767,	190
Smith v. Goodyear Dental Vul- canite Co., 93 U. S. 486,	73, 471, 1061	Standard Oil Co. v. Southern Pacific Co., 54 Fed. 521,	632
Smith v. Nichols, 21 Wall. (U. S.) 112,	438, 629, 1419	Standard Sanitary Mfg. Co. v. Arrott, 135 Fed. 750,	1276
Smith v. Nichols, 21 Wall. (U. S.) 112.	17, 397, 555	Standard Sanitary Mfg. Co. v. United States, 226 U. S. 20.	144, 201
Smith v. Ridgely, 103 Fed. 875, 1232, 1276, 1326		Stanley v. Schwalby, 147 U. S. 508.	1476
Smith v. Vulcan Iron Works, 165 U. S. 518,	1486	State v. Butler, 3 Lea (Tenn.) 222.	1283
Smith v. Whitman Saddle Co., 148 U. S. 674,	705	v. Delaware &c. Tel. Co., 47 Fed. 633.	1307
Smith v. Whitman Saddle Co., 148 U. S. 674.	41	Steam Cutter Co. v. Sheldon, 15 Fed. 608.	1260
Smith &c. Mfg. Co. v. Bridge- port Chair Co., 46 Fed. 393,	119	Stearns v. Russell, 85 Fed. 218, 510, 1053	
Smith &c. Mfg. Co. v. Mellon, 58 Fed. 705,	652	Stearns v. Russell, 85 Fed. 218, 500	
Snider v. Bunnell, 101 O. G. 2572,	692	Stearns-Roger Mfg. Co. v. Brown, 114 Fed. 939,	1618
Snow v. Judson, 38 Barb. (N. Y.) 210,	1413	Steck, Ex parte, 98 O. G. 228.	730
		Steiner, In re, 95 Fed. 299,	1730
		Steiner v. Tabor, 178 Fed. 839.	14
		Steinmetz v. Allen, 192 U. S. 543.	36, 695, 1104



Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Stephens v. Cady, 14 How. (U. S.) 528, 199, 1284	Telephone Cases, 126 U. S. 535, 48
Stevens v. Gladding, 17 How. (U. S.) 477, 199, 1284	Temple Pump Co. v. Goss Pump &c. Co., 58 Fed. 196, 1017
Stevens v. Seher, 11 App. (D. C.) 245, 48, 784	Thatcher Heating Co. v. Burtis, 121 U. S. 286, 558
Stilwell-Bierce &c. Co. v. Eufaula Cotton Oil Co., 117 Fed. 410, 1019	Thomas v. Rocker Spring Co., 77 Fed. 420, 1048
Stimpson v. Woodman, 10 Wall. (U. S.) 117, 555	v. St. Louis &c. R. Co., 149 Fed. 753, 1518
Stimpson Computing Scale Co. v. W. F. Stimpson Co., 104 Fed. 893, 1229	Thomas v. Weeks, Fed. Cas. No. 13, 914, 663
Stimpson Computing Scale Co. v. W. F. Stimpson Co., 104 Fed. 893, 1427	Thompson, In re, 26 App. (D. C.) 426, 1106
Stimson v. Baltimore &c. R. Co., 10 How. (U. S.) 329, 1424	Thompson v. Boisselier, 114 U. S. 1, 454
Stirrat v. Excelsior Mfg. Co., 61 Fed. 980, 1053, 1054	Thomson v. Citizens' Nat. Bank, 53 Fed. 250, 1273
Stirrat v. Excelsior Mfg. Co., 61 Fed. 980, 630, 919	Thomson v. Citizens' Nat. Bank, 53 Fed. 250, 136, 643, 919
Stockwell v. Siloway, 105 Mass. 517, 1174	Thomson v. Wooster, 114 U. S. 104, 1509
Stokes v. Heller, 96 Fed. 104, 8	Thomson-Houston Elec. Co. v. Black River Trac. Co., 135 Fed. 759, 643, 651
Stone v. Greaves, 17 O. G. 397, 671	Thomson-Houston Elec. Co. v. Black River Trac. Co., 135 Fed. 759, 95
Stone v. Sprague, 1 Story (U. S.) 270, 322	Thomson-Houston Elec. Co. v. Elmira & H. R. Co., 71 Fed. 396, 638, 645, 1055
Stow v. Chicago, 104 U. S. 547, 446	Thomson-Houston Elec. Co. v. Elmira & H. R. Co., 69 Fed. 257, 127
Strom v. Weir, 83 Fed. 170, 727	Thomson-Houston Elec. Co. v. Hoosick R. Co., 82 Fed. 461, 1055
Suffolk Mfg. Co. v. Hayden, 3 Wall. (U. S.) 315, 975	v. Kelsey Elec. R. Specialty Co., 75 Fed. 1005, 1382
Suffolk Mfg. Co. v. Hayden, 3 Wall. (U. S.) 315, 27, 29, 167	Thomson-Houston Elec. Co. v. Kelsey Elec. R. Specialty Co., 75 Fed. 1005, 991, 1266
Sullivan v. Redfield, 1 Paine (U. S.) 441, 931	Thomson-Houston Elec. Co. v. Lorain Steel Co., 117 Fed. 249, 630
Sutter v. Robinson, 119 U. S. 530, 511, 853, 1046, 1053	v. Ohio Brass Co., 80 Fed. 712, 984, 1397, 1419, 1511, 1533, 1620
Sydeman v. Thoma, 32 App. (D. C.) 362, 774	Thomson-Houston Elec. Co. v. Ohio Brass Co., 80 Fed. 712, 28, 150, 167
Sydeman v. Thoma, 32 App. (D. C.) 362, 47	Thomson-Houston Elec. Co. v. Union R. Co., 86 Fed. 636, 1032
	v. Western Elec. Co., 72 Fed. 530, 1016, 1021
<b>T</b>	
Tannage Patent Co. v. Zahn, 70 Fed. 1003, 518	
Taylor v. Sawyer Spindle Co., 75 Fed. 301, 521, 1028, 1483, 1569, 1618	
Telephone Cases, 126 U. S. 1, 352, 627, 648, 837	
Telephone Cases, 126 U. S. 1, 101	

Table of cases reported and cited. Cases reported are in black face type.  
[References are to pages.]

<b>Thompson-Houston Elec. Co. v. Western Elec. Co.</b> , 158 Fed. 813, 1059	<b>Underwood v. Gerber</b> , 149 U. S. 224, 27, 102, 109, 110, 111, 537
<b>Thomson Meter Co. v. National Meter Co.</b> , 106 Fed. 519, 126	<b>Union Carbide Co. v. American Carbide Co.</b> , 181 Fed. 104, 542
<b>Thorsen, Ex parte</b> , 63 O. G. 1688, 127	<b>Union Carbide Co. v. American Carbide Co.</b> , 181 Fed. 104, 116
<b>Tilden-Thurber Co. v. Theodore W. Foster &amp; Co.</b> , 195 Fed. 538, 731	<b>Union Distilling Co. v. Schneider</b> , 29 App. (D. C.) 1, 1502
<b>Tilghman v. Proctor</b> , 102 U. S. 708, 343, 1335	<b>Union Match Co. v. Diamond Match Co.</b> , 162 Fed. 148, 1052
<b>Tilghman v. Proctor</b> , 102 U. S. 708, 101, 149	<b>Union Match Co. v. Diamond Match Co.</b> , 162 Fed. 148, 161
<b>v. Proctor</b> , 125 U. S. 136, 1356	<b>Union Paper Bag Co. v. Advance Bag Co.</b> , 194 Fed. 126, 129
<b>Toledo, St. L. &amp; W. R. Co. v. Reardon</b> , 159 Fed. 366, 219	<b>Union Paper-Bag Mach. Co. v. Standard Paper Bag Co.</b> , 29 Fed. 96, 389
<b>Toomey v. London &amp; B. &amp; S. C. R. Co.</b> , 3 C. B. (N. S.) 146, 227	<b>v. Waterbury</b> , 39 Fed. 389, 401, 421, 435
<b>Topliff v. Topliff</b> , 145 U. S. 156, 1060, 1089, 1690	<b>v. Waterbury</b> , 70 Fed. 240, 8, 104
<b>Topliff v. Topliff</b> , 145 U. S. 156, 181, 184, 1104	<b>Union Steam Pump Co. v. Battle Creek Steam Pump Co.</b> , 104 Fed. 337, 1421
<b>Torrent &amp; Co. Lumber Co. v. Rodgers</b> , 112 U. S. 659, 1140	<b>Union Typewriter Co. v. Smith</b> , 181 Fed. 966, 992
<b>Torrey v. Hancock</b> , 184 Fed. 61, 1511	<b>Union Typewriter Co. v. Smith</b> , 181 Fed. 966, 29, 167
<b>Torrey v. Hancock</b> , 184 Fed. 61, 93	<b>v. Smith</b> , 173 Fed. 298, 626
<b>Transit Development Co. v. Cheatham Elec. Switching Device Co.</b> , 194 Fed. 963, 1484	<b>Union Water Meter Co. v. Desper</b> , 101 U. S. 332, 1028, 1428
<b>Traver v. Brown</b> , 14 App. (D. C.) 34, 774	<b>United Shirt &amp; Co. v. Beattie</b> , 149 Fed. 736, 640, 659, 914
<b>Travers v. American Cordage Co.</b> , 64 Fed. 771, 210, 390, 401, 421, 435	<b>United States v. Allen</b> , 192 U. S. 543, 1068
<b>v. Beyer</b> , 26 Fed. 450, 150, 1254	<b>United States v. Allen</b> , 192 U. S. 543, 672, 691
<b>Tucker, Ex parte</b> , 97 O. G. 187, 731	<b>United States v. Allen</b> , 203 U. S. 476, 822
<b>Tuttle v. Claffin</b> , 76 Fed. 227, 1519, 1709	<b>United States v. Allen</b> , 203 U. S. 476, 672
<b>Tuttle v. Matthews</b> , 28 Fed. 98, 1416	<b>United States v. American Bell Tel. Co.</b> , 159 U. S. 548, 1471
<b>Tyler v. Boston</b> , 74 U. S. 327, 1031, 1523	<b>v. American Bell Tel. Co.</b> , 167 U. S. 224, 313, 1117, 1145
	<b>United States v. American Bell Tel. Co.</b> , 167 U. S. 224, 135, 149, 187
U	
<b>Uhlman v. Bartholomae &amp; Co. Brew. Co.</b> , 390	
<b>Underwood v. Gerber</b> , 149 U. S. 224, 639	

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

United States v. American Bell Tel. Co., 128 U. S. 315, 21, 1107	United States Rifle &c. Co. v. Whitney Arms Co., 118 U. S. 22, 649, 651
v. American Bell Tel. Co., 29 Fed. 17, 1250	United States Rifle &c. Co. v. Whitney Arms Co., 118 U. S. 22, 22, 23. 653
United States v. Berdan Fire- arms Mfg. Co., 156 U. S. 552, 1423	United States Seeded Raisin Co. v. Griffin, 126 Fed. 364. 930
United States v. Berdan Co., 156 U. S. 552, 1349	United States &c. Guaranty Co. v. Standard Paving Co., 95 Fed. 137, 636
United States v. Burns, 12 Wall. (U. S.) 246, 1433	Universal Adding Mach. Co. v. Comptograph Co., 146 Fed. 981, 612
United States v. Burns, 12 Wall. (U. S.) 246, 1348, 1349, 1433	Universal Brush Co. v. Sonn, 154 Fed. 665, 1422
v. Elliott, 25 Int. Rev. 319, 222	Universal Brush Co. v. Sonn, 154 Fed. 665. 63, 67
United States v. Harvey Steel Co., 196 U. S. 310, 1518	Untermeyer v. Freund, 58 Fed. 205, 732
United States v. Joint Traffic Assn., 171 U. S. 505, 1307	Unwin v. Wolseley, 1 T. R. 674. 1349
v. Jones, 131 U. S. 1, 1349	Usher v. Scranton R. Co., 132 Fed. 405, 229
v. McLemore, 4 How. (U. S.) 286, 1349	
v. Missouri, K. & T. R. Co., 141 U. S. 358. 1108	V
United States v. Moore, 30 App. (D. C.) 464. 825	Vance v. Campbell, 1 Black (U. S.) 427, 95, 1034
United States v. Moore, 30 App. (D. C.) 464, 32, 51, 672	Van Doren v. Pennsylvania R. Co., 93 Fed. 260, 219
v. Nashville, C. & St. L. R. Co., 118 U. S. 120, 1476	Van Epps v. United Box &c. Co., 143 Fed. 869, 1072
v. Palmer, 128 U. S. 262, 1107, 1348, 1349	Van Epps v. United Box &c. Co., 143 Fed. 869. 940
v. Ramsey, 158 Fed. 488. 230	Vavasseur v. Krupp. 9 Ch. Div. 351, 152, 1350, 1355
v. Schurz, 102 U. S. 378, 1107	Vermont Farm Mach. Co. v. Gibson, 56 Fed. 143, 390
United States v. Standard Sanitary Mfg. Co., 191 Fed. 172, 315	Victor Talk. Mach. Co. v. American Graphophone Co., 140 Fed. 160, 29
United States v. Stone. 2 Wall. (U. S.) 525. 1107	Victor Talk. Mach. Co. v. Fair. 123 Fed. 424. 1274, 1280
v. Trans-Missouri Freight Assn., 166 U. S. 290, 1307	Victor Talk. Mach. Co., v. Fair. 123 Fed. 424. 930
United States Credit System Co. v. American Credit In- demnity, 59 Fed. 139, 538	v. Greenberg. 1724
United States Fastener Co. v. Bradley, 149 Fed. 222, 930	v. Spiegel, 1724
United States Mitis Co. v. De- troit Steel &c. Co., 122 Fed. 863, 1506	Vinke, 96 O. G. 2061, 129
United States Peg-Wood &c. Co. v. B. F. Sturtevant Co., 125 Fed. 382, 1043, 1047	Vinton v. Hamilton, 104 U. S. 485, 12
United States Repair &c. Co. v. Assyrian Asphalt Co., 100 Fed. 965, 1032	Virtue v. Creamery Pkg. Co., 179 Fed. 115, 1418
	Virtue v. Creamery Pkg. Mfg. Co., 227 U. S. 8, 144, 201
	Vose v. Singer, 4 Allen (Mass.) 226, 316

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Vrooman v. Penhollow, 179 Fed. 296,	662	<b>Weatherhead v. Coupe, 147 U.</b> <b>S. 322,</b>	638
<b>Vulcan Iron Works v. Smith,</b> 62 Fed. 444,	1430	<b>Weatherhead v. Coupe, 147 U.</b> <b>S. 322,</b>	102
W		Weaver, 81 O. G. 967,	130
<b>Wagner Typewriter Co. v.</b> <b>Wyckoff, 151 Fed. 585,</b>	1431	<b>Webber v. Virginia, 103 U. S.</b> <b>344,</b>	200, 1283
<b>Wales v. Waterbury Mfg. Co.,</b> 101 Fed. 126,	1706	<b>Weber v. Automobile &amp;c. Mfg.</b> <b>Co., 190 Fed. 189,</b>	182
<b>Wales v. Waterbury Mfg. Co.,</b> 101 Fed. 126,	253, 257	<b>Webster v. Cooper, 10 How.</b> <b>(U. S.) 54,</b>	1494
<b>Wall v. Chesapeake &amp; O. R.</b> <b>Co., 37 C. C. A. 129,</b>	219	<b>Webster Loom Co. v. Higgins,</b> 105 U. S. 580,	74
<b>Wallace v. Holmes, 9 Blatchf.</b> <b>(U. S.) 65,</b>	150	<b>Webster's Pat. Cas. 207,</b>	14
<b>v. Holmes, 1 O. G. 117,</b>	1256	<b>Weil, Ex parte, 173 O. G.</b> <b>1081,</b>	660
<b>v. Noyes, 13 Fed. 172,</b>	389	<b>Weil, Ex parte, 173 O. G. 1081,</b>	31
<b>Waltham Watch Co. v. Keene,</b> 202 Fed. 225,	196	<b>Weirman v. Shaw Stocking</b> <b>Co., 157 Fed. 928,</b>	111
<b>Wanamaker v. Enterprise Mfg.</b> <b>Co., 53 Fed. 791,</b>	1494	<b>Weisgerber v. Clowney, 131</b> <b>Fed. 477,</b>	730
<b>Warren v. Keep, 155 U. S. 265,</b> 260,	1701	<b>Wells v. Curtis, 66 Fed. 318,</b>	1017
<b>Warren Bros. Co. v. Owosso,</b> 166 Fed. 309,	1059	<b>v. Jacques, 5 O. G. 364,</b>	94
<b>Warren Co. v. Rosenblatt, 80</b> <b>Fed. 540,</b>	1015	<b>Wells Glass Co. v. Henderson,</b> 67 Fed. 930,	8
<b>Warren Featherbone Co. v.</b> <b>Landauer, 151 Fed. 130,</b>	1418	<b>Welsbach Light Co. v. Amer-</b> <b>ican &amp;c. Lamp Co., 98 Fed.</b> <b>613,</b>	622
<b>Warren Featherbone Co. v.</b> <b>Landauer, 151 Fed. 130,</b>	1416	<b>v. Appollo Incandescent &amp;c.</b> <b>Co., 96 Fed. 332,</b>	618
<b>Warren Steam Pump Co. v.</b> <b>Blake &amp;c. Pump Works, 163</b> <b>Fed. 263,</b>	641	<b>Welsbach Light Co. v. Appollo</b> <b>Incandescent &amp;c. Co., 96</b> <b>Fed. 332,</b>	54
<b>Washburn &amp;c. Mfg. Co. v. Beat</b> <b>'Em All Barbed Wire Co.,</b> 143 U. S. 275,	470	<b>Welsbach Light Co. v. Cosmo-</b> <b>politan &amp;c. Light Co., 104</b> <b>Fed. 83,</b>	662, 1582
<b>Washburn &amp;c. Mfg. Co. v.</b> <b>Beat 'Em All Barbed Wire</b> <b>Co., 143 U. S. 275,</b>	171	<b>Welsbach Light Co. v. Cosmo-</b> <b>politan &amp;c. Light Co., 100</b> <b>Fed. 648,</b>	663
<b>Washington &amp;c. Packet Co. v.</b> <b>Sickles, 65 U. S. 333,</b>	1510	<b>Sunlight Incandescent &amp;c.</b> <b>Co., 87 Fed. 221,</b>	166
<b>Waterman v. Mackenzie, 138</b> <b>U. S. 252,</b>	1159	<b>Welsbach Light Co. v. Union</b> <b>Incandescent Light Co., 101</b> <b>Fed. 131,</b>	965, 1420
<b>Waterman v. Mackenzie, 138</b> <b>U. S. 252,</b>	191	<b>Welsbach Light Co. v. Union</b> <b>Incandescent Light Co., 101</b> <b>Fed. 131,</b>	8, 163
<b>Waterman v. Shipman, 55 Fed.</b> <b>982,</b>	1164	<b>Werner v. King, 96 U. S. 218,</b>	632
<b>Waterman v. Shipman, 55 Fed.</b> <b>982,</b>	191	<b>Wessel v. United Mattress</b> <b>Mach. Co., 139 Fed. 11,</b>	1513
<b>Watson v. Belfield, 35 O. G.</b> <b>1112,</b>	662	<b>West v. Rae, 33 Fed. 45,</b>	951
<b>Watson v. Thomas, 23 App.</b> <b>(D. C.) 65,</b>	785	<b>West Disinfecting Co. v.</b> <b>Frank, 146 Fed. 388,</b>	41, 731
		<b>Western Elec. Co. v. La Rue,</b> 139 U. S. 601.	461

Table of cases reported and cited. Cases reported are in black face type.

[References are to pages.]

Western Elec. Co. v. La Rue, 139 U. S. 601,	79, 83	Westinghouse Elec. Co. v. Wagner Elec. &c. Co., 225 U. S. 604,	1692
Western Elec. Co. v. North Elec. Co., 135 Fed. 79,	567, 694, 1505, 1576	Westinghouse Elec. &c. Co. v. Wagner Elec. &c. Co., 225 U. S. 604,	258
Western Elec. Co. v. Robert- son, 142 Fed. 471,	1060	Westinghouse &c. Mfg. Co. v. New England Granite Co., 110 Fed. 753,	1070
Western Elec. Co. v. Robert- son, 142 Fed. 471,	145, 226	v. Union Carbide Co., 117 Fed. 495,	1061
Western Elec. Co. v. Roches- ter Tel. Co., 145 Fed. 31,	486	Westmoreland Specialty Co. v. Hogan, 167 Fed. 327,	1017
v. Sperry Elec. Co., 58 Fed. 186,	653	Westmoreland Specialty Co. v. Hogan, 167 Fed. 327,	940
Western Elec. Co. v. Sperry Elec. Co., 58 Fed. 186,	21	Weston, In re, 17 App. (D. C.) 431,	417
Western Elec. Co. v. Sperry Elec. Co., 59 Fed. 295,	1340	Weston, In re, 17 App. (D. C.) 431,	107
Western Elec. Co. v. Sperry Elec. Co., 59 Fed. 295,	187	Weston v. Huermons, 2 Vict. L. R. Eq. 121,	177
Western Elec. Co. v. William- Abbott Elec. Co., 108 Fed. 952,	1056, 1058	Wheulton v. Hardesty, 8 El. & Bl. 266,	227
Western Tel. Mfg. Co. v. American Elec. Tel. Co., 131 Fed. 75,	1022, 1428	White v. Allen, 2 Cliff. (U. S.) 224,	747
Western Union Tel. Co. v. American Bell Tel. Co., 125 Fed. 342,	1216, 1272	White v. Dunbar, 119 U. S. 47, 1025,	1137
Western Union Tel. Co. v. Burgess, 108 Fed. 26,	219	White v. Dunbar, 119 U. S. 47, 63, 64, 66, 79, 83.	163
Westinghouse v. Boyden Pow- er-Brake Co., 170 U. S. 537, 397,	645	v. Hunter, 47 Fed. 819, 1425,	1620
Westinghouse v. Boyden Pow- er-Brake Co., 170 U. S. 537, 8, 104, 105, 109,	175	v. Peerless, 111 Fed. 190,	930
v. Edison Elec. Light Co., 63 Fed. 588.	1051	v. Rankin, 144 U. S. 628.	1262
Westinghouse v. New York Air-Brake Co., 140 Fed. 545,	1668	Whiteley v. Swayne, 74 U. S. 685,	837
Westinghouse v. New York Air-Brake Co., 140 Fed. 545,	257	Whitney v. Emmett, 1 Bald. (U. S.) 304,	930
Westinghouse Air-Brake Co. v. Christensen Engineering Co., 129 Fed. 437,	1071	Wickelman v. A. B. Dick Co., 88 Fed. 264,	1074
v. Great Northern R. Co., 88 Fed. 258,	1071	Wickersham v. Singer, 29 Fed. No. 17, 610.	317
v. New York Air-Brake Co., 63 Fed. 962.	1039	Wiens, 101 O. G. 1369.	129
Westinghouse Elec. &c. Co. v. Dayton Fan. &c. Co., 106 Fed. 724,	29	Wilder v. Kent, 15 Fed. 217, 1265,	1284
Westinghouse Elec. Co. v. Stanley Instrument Co., 133 Fed. 167,	1018, 1050, 1060, 1511	Wilcox &c. Mach. Co. v. Mer- row Mach. Co., 93 Fed. 206,	644
		Williams v. Star Stand Co., 35 Fed. 369,	199
		v. Williams, 3 Meriv. 157.	180
		Williams Calk Co. v. Kemmer- er, 145 Fed. 928,	712
		Williams Calk Co. v. Never- slip Mfg. Co., 136 Fed. 210	41
		Willis v. McCullen, 29 Fed. 641,	150, 1254

Table of cases reported and cited. Cases reported are in black face type.  
 [References are to pages.]

Wilson v. Barnum, Fed. Cas. No. 17787, 233	Woods, In re, 143 U. S. 202, 1491
<b>Wilson v. Consolidated Store-Service Co., 88 Fed. 286, 1601, 1621</b>	Woodworth v. Curtis, 2 W. & M. (U. S.) 524, 1235
Wilson v. Consolidated Store-Service Co., 88 Fed. 286, 250, 1425, 1620	v. Edwards, 2 Robb Pat. Cas. 610, 233
v. Rousseau, 4 How. (U. S.) 646, 134, 142, 1250	v. Hall, 1 W. & M. (U. S.) 248, 186
<b>Wilson v. Sandford, 10 How. (U. S.) 99, 1278</b>	Wooster v. Calhoun, 11 Blatchf. (U. S.) 215, 397
Wilson v. Sandford, 10 How. (U. S.) 99, 141, 142, 1250	Worden v. Fisher, 11 Fed. 505, 663
<b>Winans v. Denmead, 15 How. (U. S.) 330, 632</b>	Wren v. Weild, L. R., 4 Q. B. 730, 1413
Winans v. Denmead, 15 How. (U. S.) 330, 13, 69, 70, 71, 78, 79, 81, 82, 160, 175	Wright v. Postel, 44 Fed. 352, 747
<b>Winans v. New York &amp;c. R. Co., 21 How. (U. S.) 88, 1526</b>	v. Randel, 8 Fed. 591, 189
Winchester R. Arms Co. v. Olmstead, 203 Fed. 493, 196	v. Wilson, 11 Rich. L. (S. Car.) 144, 199
Wintermute v. Redington, 1 Fish. (U. S.) 243, 930	v. Yuengling, 155 U. S. 47, 19
Wirt v. Hicks, 46 Fed. 71, 930	Wyckoff v. Wagner, 88 Fed. 515, 930
Wise v. Grand Ave. R. Co., 33 Fed. 277, 233	<b>Wyeth v. Stone, 1 Story (U. S.) 273, 322</b>
Wisheart, 101 O. G. 3107, 129	Y
<b>Wolff Truck Frame Co. v. American Steel Foundries, 195 Fed. 940, 1009</b>	<b>Yale Lock Mfg. Co. v. Sargent, 117 U. S. 536, 1143</b>
<b>Wollensak v. Reiher, 115 U. S. 87, 1030</b>	v. Sargent, 117 U. S. 373, 1429
v. Sargent, 151 U. S. 221, 1032, 1140	Yale Lock Mfg. Co. v. Sargent, 117 U. S. 373, 63, 88
Wood v. Cleveland Rolling-Mill Co., Fed. Cas. No. 17941, 389	Yawman &c. Mfg. Co. v. Vetter Desk Works, 159 Fed. 443, 644
<b>Wood v. Underhill, 5 How. (U. S.) 1, 639</b>	<b>Yesbera v. Hardesty Mfg. Co., 166 Fed. 120, 1651</b>
<b>Woodbury Planing Mach. Co. v. Keith, 101 U. S. 479, 650, 1523</b>	Yesbera v. Hardesty Mfg. Co., 166 Fed. 120, 256
<b>Woodmanse &amp;c. Mfg. Co. v. Williams, 68 Fed. 489, 1531, 1579</b>	Yost Elec. Mfg. Co. v. Perkins Elec. Switch Mfg. Co., 179 Fed. 511, 13
	Young, Ex parte, 46 O. G. 1635, 7, 107, 390
	Young v. Eick, 113 O. G. 547, 130
	v. Lippman, 9 Blatchf. (U. S.) 277, 155
	Yowatt v. Winyard, Jac. & W. 394, 177
	Z
	Zwack, Ex parte, 76 O. G. 1855, 626

# INTRODUCTION.

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## I. ORIGIN AND NATURE OF PATENTS.

The patent system of the United States is a development of the older system of Great Britain, with, however, fundamental differences.

The British system arose from a negative provision in the Statute of Monopolies, 21 Jac. 1 (1624), based upon common-law precedents, especially excepting from a sweeping prohibition of monopolies those granted for a term of years to the importers of a new art or trade and those granted for a term of fourteen years to the "first inventor" of "new manufactures." The patent system of the United States rests upon a positive provision of the Constitution, empowering Congress to create and protect property in ideas of invention.

There is in the books and in the minds of many historians a certain misapprehension of the origin of the British patent law. It was Parliament which first endeavored to sustain monopolies—the trade monopolies of the town guilds. The concentrated power of the guilds controlled Parliament through their representatives. The Crown, in the first instance, granted monopolies under a salutary principle. The privileges and charters and patents were then granted by the Crown for the purpose of introducing new arts and trades from abroad, so that the workmen who could not get employment in the trades because they were not members of the guilds might receive employment under the new arts and crafts, and the new trades. The result, however, was such an extension of the privileges granted by the Crown that they soon became abuses—far greater abuses than were the guilds. They were made the basis for extortion and shameless revenue-producing trickery. The common-law courts constantly strove to hold even the scales of justice between the royal privilege and Parliament as representing the guilds. It is to their eternal credit that the courts evolved and bravely maintained, as far as possible, the doctrine which holds today as the true doctrine.

The character of the monopolies of the 16th and 17th centuries and the classification of monopolies of new inventions as trade monopolies are evidenced in the histories of the times. They supply interesting illustrations of the views of the courts and of the people, who always favorably distinguished a monopoly for a new invention or for a new trade.

The common law had, in fact, provided an adequate remedy against monopolies. It classed as unlawful, monopolies of existing arts and trades but recognized the legality and advantages of encouraging the introduction of new trades and manufactures by granting a monopoly for a limited term. These principles were recognized in two famous cases in which monopolies were defeated and yet strong expression given to the exceptions of monopolies for new trades or new inventions. (*Darcy v. Allein*, [1602] 11 Coke 846, 1 Web. P. C.; *Abridge 1 Brodix Patent Cases*, 1; and *Clothworkers of Ipswich* [1615], *Godbolt* 252.) Though legislation subsequently became necessary, it was not to supply a deficiency in the law, but to reassert the law which was being evaded and defied.

Sir Edward Coke had been the law officer in the cited playing-card monopoly case of *Darcy v. Allein*. He defines "monopoly" in terms which have been significantly paraphrased in recent decisions of the courts of the United States, nearly three hundred years later. In his *Institutes* (vol. 3, p. 181) he says:

"A monopoly is an institution or allowance by the King—by his grant, commission, or otherwise, to any person or persons, bodies politic or corporate, of or for the sole buying, selling, making, working, or using of anything whereby any person or persons, bodies politic or corporate, are sought to be restrained of any freedom or liberty that they had before, or hindered in their lawful trade."

The distinction made by Coke in the concluding clause necessarily excludes patents from his definition because the grant of a patent for a limited number of years does not restrain the people "of any freedom or liberty that they had before" and does not hinder them in their lawful trade. The invention was not in their possession and the agreement or contract with the people is that the disclosure of the invention shall be made in exchange for a limited monopoly.

It is probable that if Elizabeth had been succeeded by one of equal capacity and of the same intense pride in the English people the matter might have been concluded, but as ever with King and commoner alike, the necessities of the exchequer drove James and Charles to permit and even encourage excesses under their primarily praiseworthy endeavors to follow Elizabeth in giving a national character to the various trades.

Keeping in mind how bitter was the fight, how bitter the protest and the sense of personal and national outrage engendered by these monopolies, it is of prime significance that Parliament, when it enacted the Statute against Monopolies in 1624, made that notable exception in Section 5 in favor of the introduc-



tion of a new trade and that pregnant exception in Section 6, in favor of new inventions.

It will be observed, however, that the purpose of the Statute of Monopolies was not so much to encourage and protect the original inventor, as to encourage the introduction of new manufactures into the realm; that the granting of a patent remained an exception and was, as it is at the present time, granted by the favor of the Crown.

Hapless Charles I, driven by his money necessities, went himself into business on a reckless scale. The result was the creation and extension of the infamous national monopolies of glass, starch, salt, cloth-finishing, alum, soap, etc.

The licensees and holders of charters and benefits and their inspectors were vehemently and on every hand charged with extortion and blackmailing, the most offensive form of house-searching and exactions, and with bringing malicious suits and causing ruinous delays for the purpose of squeezing the "consumer."

Clarendon, in his "History of the Rebellion," states the result, the practice and the failure, briefly thus:

"Projects of all kinds, many ridiculous, many scandalous, all very grievous, were set on foot; the envy and reproach of which came to the king, the profit to other men, insomuch as of £200,000 drawn from the subjects by these ways in a year, scarce £1,500 came to the king's use and account."

Finally, Pym in his immortal speech in Parliament in 1640, condensed the complaint against the abuses of the favors of the Crown and placed the monopolies first on his list of grievances. It was in this debate that Colepepper is credited with the following speech relating to the practices of the inspectors and licensees when enforcing the charters and grants of the Crown, a speech which well might serve as a text for certain economic futurists:

"These men, like the frogs of Egypt, have gotten possession of our dwellings, and we have scarce a room free from them. They sup in our cup, they dip in our dish, they sit by our fire; we find them in our dye-vat, washbowl, and powdering-tub; they share with the butler in his box, they have marked and scaled us from head to foot. They have a vizard to hide the brand made by that good law in the last Parliament of King James, they shelter themselves under the name of Corporation; they make bye-laws which serve their turns to squeeze us and fill their purses."

Then when the common law had been evaded and defied and when the statute accepted by the ruler had been rendered practically nugatory by the abuse of the royal privilege—came the

revolution which for all time confirmed both the letter and spirit of the statute.

The Statute of James I, the Statute of Monopolies, came over in the Mayflower with the Pilgrims, and the patents granted by the General Court of Massachusetts were first to recognize the principle of originality, for they granted the monopoly for certain inventions forbidding others to use such articles unless they were different from those of the patentee.

The idea of granting patents for new inventions prevailed in that and other colonies. When the Constitutional Convention met, its members had before them, and under consideration, the English idea, and a suggestion of a different idea, in the practice of the colonies. The English idea had been to encourage monopolies so that the introduction of a new trade or a new art was the essence of the law. The constitutional idea, however, was that of encouraging domestic invention, and in the first patent law of 1790, and in all subsequent amendments of that law, the basic idea has been to encourage original invention. The introduction of those inventions into use was wisely left to the incentive of business enterprise. The intention was to encourage inventive thought; to secure a disclosure of the inventive thought as promptly as possible. Evidently, it was not deemed wise to require that inventive thought, which might be years in advance of the day, should be withheld until the inventor had been able to make provision for actually introducing the manufacture. The sooner the inventive thought was disclosed the sooner it became public property; the sooner it would be an incentive to others to improve upon that inventive thought. It was intended to offer the strongest incentive for a prompt application and disclosure. Inventors were to be made to feel the necessity of promptly completing their inventions and this they could do either by actually reducing to practice the invention or by filing an application for a patent. They need not provide, in advance, for the manufacture or trading.

When it is conceived that the essential spirit is to benefit the public by securing a disclosure, it is clear that the disclosure should be prompt and complete.

The English law, while primarily a trade law, served also by interpretation to foster and encourage invention. All things considered, there is no more impartial tribute than that of Bentham in "Rationale of Rewards," p. 92:

"It is an instance of a reward peculiarly adapted to the nature of the service and adapts itself with the utmost nicety to those rules of proportion to which it is most difficult for reward, artificially instituted by the legislature, to confer. If confined, as it ought to be, to the precise point in which the originality of the

invention consists, it is conferred with the least possible waste of expense. It causes a service to be rendered, which, without it, a man would not have a motive for rendering; and that only by forbidding others from doing that which, were it not for that service, it would not have been possible for them to have done. Even with regard to such invention, for such there will be, when others beside him who possess the reward have scent of invention, it is still of use by stimulating all parties and setting them to strive which shall first bring the discovery to bear. With all this it unites every property that can be wished for in a reward. It is variable, equable, commensurable, characteristic, exemplary, frugal, promotive of perseverance, subservient to compensation, popular and reasonable."

(Quoted by Godbolt, 252, and Coryton, p. 37.)

The patent laws of the United States express in the form of statutes the purpose of the legislators when dealing with a form of property of which the striking feature is, that the public is to be the legatee.

The contract which the patentee makes with the public and the right which he obtains by a patent are apparent from the statutes. It will be noted that the right granted the inventor is not the right to make, use and sell the invention; he had that at common law. The patent gives him the right to exclude others from making, using or selling the invention for the limited term of his monopoly. In short, the spirit of the patent law of the United States is that of an untrammelled grant of exclusion in exchange for a clear disclosure of a complete new invention. The inventor has no property right in an unpatented invention which he can enforce against others. On the other hand, it has been held that a secret in trade is fully recognized as property in equity, the disclosure of which will be restrained by injunction.

## II. PATENTABILITY—WHAT IS PATENTABLE.

The central statute of the patent laws of the United States is R. S. U. S. Sec. 4886. Under that statute the subject of a patent must have been "invented or discovered." These words are not used quite in a dictionary sense; they refer to inventions having industrial value. That is to say, a principle is not patentable, but a mode, method or means of seizing upon a principle and putting it into practical service may be patentable. It is not, however, essential that the invention shall have been actually applied to a use. The patent is granted for the disclosure of the means or method by which it may be applied to a practical use and the process or means in practice may differ in details or structure from the disclosure of the patent. There are many interesting illustrations of this rule especially in the early English cases and the early American cases.

The time or labor spent on the completion of the invention is not a factor of patentability. The criterion is the result, whether the outcome of years of scientific research or of the happy thought of an instant. In all cases it is shown that it is not the mere discovery of the principle that may be protected, but the result of the thought, the invention that brings the principle into service. Chance may have brought to light the basis of a process or the elements of a combination, but the patent is granted for the inventive thought that sees, comprehends and applies, “\* \* \* and in addition to the discovery they needed the invention of a process by which it could be practically carried out.” (Mowry v. Whitney, 81 U. S. 620, 20 L. ed. 860.) It may be widely variant from the discovery as it appeared—it may be identical, but the discovery must be seized as a mode, method or means, or evolved into some form or instrument of action.

(1) **The Statutory Classes of Invention.**—The statute divides patentable subject-matter into four classes: “Art, machine, manufacture and composition of matter.”

The term “art” is intended to include those methods and processes which embody an act or a series of acts that may be carried out by hand without reference to a special mechanism, such as the methods, processes and modes of operation which form the basis of the industries, such as dyeing, tanning, distilling, and assaying. Each of these industries is, in the broad sense, an “art,” and is commonly so called; it is apparent that the patent law used the word in a more general sense, for it has never been doubted that it is intended to include not only those inventions which create a new industry, but also the steps—the separate processes of any art or industry.

It may be noted, however, that there is a certain nicety in the use of the substantially synonymous words “process,” “mode” and “method.” The words “mode” and “method,” and especially the latter word, are, perhaps, the more accurate rhetorical designation where the operation is mechanically performed, and the elements or ingredients suffer no change in themselves to produce effect one upon the other; that is to say, a mode or method of operation or sequence of acts, a manipulation of mechanism involving invention. “Process” seems the more accurate rhetorical designation where some chemical or elementary operation is involved or where the properties of one or more ingredients, under particular conditions, produce the result. For example, the mode or method of attaching a sweat band to a hat or of making a paper bag, the process of tanning a skin by subjecting it to a succession of specified baths, or the process of dyeing a sweat band or the process of bleaching paper. These are not, it should be again observed, legal distinctions.

A "machine" is a body, or assemblage, or combination of mechanical parts adapted to receive, transmit and modify force or motion to do work. This term of the statute includes the great majority of inventions, for a transom-lifter answers the definition as well as a printing-press. Tools may, in accordance with their character, be classed either as machines or as articles of manufacture.

A machine patent may be had for an improvement upon an old machine. The term also includes the parts of a machine as well as several machines when combined to perform a single function.

Among the most important distinctions of the patent law are those between a machine patent and a method or process patent, and between a method and the mere function of a machine.

A machine patent is readily understood to stand for something permanent, certain, unchanging—a combination of mechanical elements—a thing; while a method or a process patent is not necessarily confined to a particular machine, but may be referred to various mechanisms.

The function of a machine, "the expected action of the machine," is often claimed as a method, but is held to be not patentable. The planing of a board, the weaving of a fabric, or any mere operation of a machine accompanies the machine and may not be patented as a method. (*Corning v. Burden*, 15 How. [U. S.] 267, 14 L. Ed., 683.) There is, however, a well-defined kind of method which is often mistaken for the mere function of a machine where the method consists of the order or sequence in which the functions of a machine are performed. Such a method may be patentable if it define a new sequence of operations involving invention in the arrangement. (See, for example, *Ex Parte Young*, 46 O. G. 1635, C. D. [1889] 116.)

After discussing various authorities the Commissioner held that the decisions of the courts did not appear to him to sustain the position of the lower tribunals of the Patent Office that the mechanical method before him was "evidently and necessarily the operation contemplated in the construction of the machine," and therefore not patentable; but that, on the contrary, they recognized "as patentable novel mechanical process, notwithstanding the fact that machines have been devised of which the processes are the evident and necessary operation."

The decision of the Supreme Court in *Corning v. Burden*, *supra*, does not rule out such claims. That decision means that when an action which has been performed by hand is done by machinery, there is not, for that reason, a new method.

The Supreme Court in *Risdon v. Medart*, 158 U. S. 68, 39 L. Ed. 899, construed a set of claims covering the method of making pulleys to be claims for purely mechanical processes and held

them for that reason alone not patentable, stating, in effect, that only such processes as involved chemical or similar elemental action, or the action of an agency of nature were patentable. The rule (as understood) was shortly followed by the Circuit Court of Appeals for the Seventh Circuit, in *Wells Glass Company et al. v. Henderson et al.*, 67 Fed. 930, 15 C. C. A. 84, and by other Circuit Courts in *American Strawboard Co. v. Elkhart Egg Case Co.*, 84 Fed. 960, and *Stokes v. Heller*, 96 Fed. 104.

In an article in 29 *American Law Review* (July-August, 1895), pp. 559-578, the *Risdon* case is discussed at length from the standpoint that that case "can not make claims defining steps in the production of an article which may be performed by hand or by a set of machines, fall under the narrow designation of 'function of a machine.'" The writer cites approximately forty cases in which the Supreme Court, Circuit Courts and the Patent Office had approved and sustained claims of patents for mechanical methods.

Subsequent to that article, in the case of *Union Paper Bag Co. v. Waterbury*, 70 Fed. 240, 17 C. C. A. 84, Mr. Justice Brown, who wrote the opinion in *Risdon v. Medart*, sat with Circuit Judges Shipman and Lacombe. Though the claims in that case were purely mechanical processes the case was not disposed of upon the authority of *Risdon v. Medart*; but the claims were examined with reference to patentable novelty—a practical admission by that court that a majority at least could not accept the then recent Supreme Court ruling as rendering unnecessary a further examination of the claims, and of itself disposing of the patent in suit. (See subsequent notes under heading IX, sub-heading "Claims, Process, Method").

The authority of the suggested rule of *Risdon v. Medart*, certainly the extent of its application, was modified to the vanishing point by the opinions, and especially the strong dissenting opinion, in *Westinghouse v. Boyden*, 172 U. S. 537, 42 L. Ed. 1136, and finally by the unanimous decision in the case of *The Expanded Metal Co. v. Bradford*, 214 U. S. 365, 53 L. Ed. 1035.

The essential question in every case is whether or not a new and useful idea of means or method has been invented, is disclosed, and is stated in the claim. It may happen that a new process or a new machine produces a new product. If so, the product may be separately claimed and separately patented. See *Rubber Company v. Goodyear*, 76 U. S. 789, 19 L. ed. 566. Examples of the practical importance of these distinctions in the older cases are found in *Kay v. Marshall*, 2 Web. Pat. Cas. 34-84; *Burr v. Duryee*, 68 U. S. 531, 17 L. ed. 650; *Merrill v. Yeomans*, 94 U. S. 568, 24 L. ed. 235. Striking examples in later cases of a failure to appreciate the distinction between process and product or article of manufacture are found in *Welsbach v. Union*, 101 Fed. 131, 41 C. C. A. 225; *Goodyear*

v. Davis, 162 U. S. 122, 26 L. ed. 149; Durand v. Schullze, 61 Fed. 819, 10 C. C. A. 97; Maurer v. Dickson, 113 Fed. 870, 51 C. C. A. 494, and Mosler v. Mosler, 127 U. S. 354, 32 L. ed. 182. The matter is also of importance in the consideration of "double patenting" where there are earlier and later patents and applications to the same inventor for the same invention, a subject to be hereinafter treated.

The term "manufacture" had a wide application in the English law because it was the single term there used. In the law of the United States it covers articles or fabrics made, as finalities, distinguished from machines by not having any rule of action, and distinguished from composition of matter by not involving the relation of ingredients. As, for example, a woven wire door mat, a chain, a penholder, a plow-point, a lamp, or a chimney. These distinctions were noted, for example, in one of the early cases, Cornish v. Keen, Web. Pat. Cas., 513.

Mr. Curtis in his work on "Patents," says:

"A 'composition of matter' is a compound of two or more ingredients forming a homogeneous whole; as paint, a glue, an ink, or a dye. In certain cases the line between an article of manufacture and a composition of matter may vanish, as for example, where an artificial fuel is produced in the form of a block and consists of wood impregnated with a liquid inflammable agent, the article so produced might be called either a manufacture or a 'composition of matter.' The patent may be for the method of compounding, or for the result—the composition."

(2) **The Statutory Bars.**—The statute recites certain bars. It requires first that the subject-matter must have been "invented or discovered" by the applicant. The restrictive, definitive purport of these terms has been considered in the opening of this division. This requirement forbids the obtaining of a patent by any other than the inventor or discoverer.

The invention or discovery must be "new and useful;" the latter requisite may be disposed of briefly before proceeding to the more extended consideration of invention and patentable novelty.

(a) **Utility, Want Of.**—Want of utility is a bar seldom raised against an application by the Patent Office and seldom successfully employed as a defense in a suit; it is, however, in various phases an important factor.

Applications are frequently criticized by the Patent Office as incomplete, or as being insufficiently illustrated or described, or as inoperative, and therefore, wanting in utility. But utility in its broadest sense approaches a presumption more nearly than any other point recited in the statute and is seldom questioned by the courts or the Patent Office, except in cases of perpetual motion, or in such cases, for example, as a spark arrester which

works so vigorously as to stop the locomotive, or some visionary, obviously impracticable, scheme. As an example of the latter, see *Ex Parte De Bausset*, 43 O. G. 1583, 1888, C. D. 66.

These cases illustrate really but a phase of "utility," for they show that the invention must be "useful" to accomplish the end designed, that is, operative, practicable. The more inclusive sense of the term is indicated by what has been said of perpetual motion and visionary schemes. Such "inventions" do not come within the purview of the statute; they are not within the realm of the useful arts.

In a similar category are placed inventions capable only of a pernicious use as distinguished from a beneficial use. That is to say, inventions which on grounds of public policy are held to be not useful because they are injurious to the morals, health or good order of society.

At page 15 of the original edition of his work on "Patents," Mr. Curtis, with reference to "useful," said:

"It has been held, upon the use of the same word in the same connection in the old patent act of 1793, that it was used merely in contradistinction to what is frivolous or mischievous to society. This term was held to be satisfied, if the alleged invention was capable of use, and was not injurious to the well-being, good policy or sound morals of society." (Citing *Lowell v. Lewis*, 1 Mass. 186; *Bedford v. Hunt*, *Ibid.* 303; *Kneas v. Schuylkill Bank*, 4 Wash. (U. S.) 9-12, Fed. Cas. No. 7, 875.)

In the case of *Fuller v. Berger et al.*, 120 Fed. 274, 56 C. C. A. 588 (1903), it was held that Patent No. 613,844 for a bogus-coin detector for coin-operated vending machines, adapted to be used for any coin-operated machines was not void for lack of utility because it was assigned by the inventor to a manufacturer of gambling machines and had been used solely in connection with such machines. The court cites and discusses several cases and distinguishes *Rickart v. Du Bon*, 103 Fed. 863, 43 C. C. A. 360, in which the patent involved was for the process of spotting tobacco leaves to deceive and defraud the public and which was, therefore, held not to be within the meaning of the term "useful." The court in *Fuller v. Berger* quotes and further comments upon the illustration of Mr. Walker in his work on "Patents," section 82, of a Colt revolver which, while it might be used for homicide or to assist a burglar, nevertheless had so many essentially useful functions that it could not be defeated on the ground of want of utility. The court concluded, following this illustration of the revolver, that if the tribunal could see "that the instrument was susceptible of good uses, though, in fact, never put to such before the suit was begun, the patent could be sustained."

Utility, then, is an essentially practical term. It weighs no



question of morals or danger against positive advantages, and may not be raised, for example, against spirituous liquors or explosive compounds. When, however, adulterations, infernal machines or abominable devices are presented to the Patent Office, they may be rejected under the construction of "useful," upon the broad basis of public policy, as injurious to public health or morals. These cases seldom arise, therefore, in the courts, and then only in such instances as have been hitherto stated.

(b) Novelty, Want Of.—The statute (see 4886) requires the useful invention or discovery to be new. The term requires no definition. The thing must be new, but not every new thing is patentable, and the statute proceeds to qualify the term by defining what will negative novelty:

1. Use or knowledge by others in this country, prior to the invention or discovery.

2. A patent or description in a printed publication in this or any foreign country, prior to the invention or discovery.

Finally, even when invention and novelty are predicated or established, there stands in the way the two requirements that:

3. It must not have been in public use or on sale or described in any printed publication for more than two years prior to the application, and

4. It must not have been abandoned.

These several requirements may be applied in the form of statutory bars under the following heads: (c) Want of Invention; (d) Want of Patentable Novelty. These include the consideration of citations anticipating the invention, and of evidence in the form of references which anticipate the substance thereof and involve the bar of want of invention in the study of the differences between the invention for which a patent is sought or had, and the prior use, knowledge, patent or publication or other bar raised against the invention. (e) Public Use or Sale; (f) Abandonment.

(c) Want of Invention.—This bar is seldom applied purely. An example of such an application is found in the *Corn Planter Cases*, 23 Wall. (U. S.) 232, where it was held that the feature of reissued patent, No. 1,094, of a peg to prevent the rear part of the machine from tipping up and dumping the driver was devoid of invention. It is, however, the final test in almost all cases involving the question of patentable novelty. When an earlier and exact counterpart of the invention is produced the question is at once settled, the invention is directly "met," "anticipated," it is not "new." In the vast majority of cases, however, there is some tangible difference between the invention in question and the citation urged against it, and the point to be decided then is whether or not the creation of this difference

involved the exercise of invention. For example: In the leading case of *Hicks v. Kelsey*, 18 Wall. (U. S.) 670, it was shown that wagon-reaches made of wood of the same construction as that shown by the patent were old and common, and it was held that the mere substitution of iron for wood was not invention; in *Vinton v. Hamilton*, 104 U. S. 485; 21 O. G. 557, it was not invention to put a cinder notch in a cupola furnace because this was old in blast furnaces.

Analogous to this practical definition of invention by exclusion are the cases of business systems and house arrangements patents for which have been, so frequently, held invalid by the courts.

The cases abound in definitions of invention, to all of which applies the statement of the Supreme Court in *McClain v. Ort-mayer*, 141 U. S. 419, 35 L. ed. 800, 12 Sup. Ct. 76, that invention cannot be defined but that each case turns upon the facts of that particular case. One of the broadest definitions is in the ancient case of *Arkwright*, Web. Pat. Cas. 71, where Butler, J., said, "If there be anything material and new which is an improvement to the trade, that will be sufficient to support a patent."

There have also arisen a number of negative rules which operate by process of exclusion and though variously stated may be collated as the basis of a practical guide, provided always that the exception follow the rule and that the proper emphasis be given the qualifying words which ought in every case to accompany these negative rules.

1. It is not invention to produce a device, or a change in any device, which any ordinarily skilful mechanic or worker in the art could produce as a matter of course to accomplish the desired result. That is to say, mere mechanical skill, "the expected skill of the calling," is not invention.

There are a number of "rules" which, frequently cited separately or as separate rules, more properly, it is thought, fall under the head of "mechanical skill," as corollaries to the suggested rule of differentiation.

It is not invention to merely improve upon workmanship; to make solid parts previously made separable; to make separate parts previously made integral; to merely change the relative location of parts without changing the function performed; to omit a part or parts with a corresponding omission of function.

It may, however, be invention to omit a part when there is a rearrangement or reorganization so that the same result is secured by a less number of parts.

2. It is not invention merely to substitute superior for inferior materials in any or all of the parts of the thing. That is, mere substitution of material, is not invention.

Under this rule, there is no invention in substituting one well known form of a particular material for another well known form of the same material. There are, however, many apparent exceptions to these rules which support the proposition that it may be invention to substitute one material for another where there is involved some new mode of construction; where there is developed some new property or use of an article; where a new mode of operation or a new function is produced; where the result of the invention is the first practical success in the art; or where the application of the material had not been known before, or the practice of the invention demonstrates the superiority in cheapness, durability or efficient action.

3. Mere change in form, proportion or degree only is not invention.

This might well be a sub-topic under "mechanical skill," but for certain distinctive aspects. When the Act of 1790 was amended by the Act of 1793, Section 2 of the new law concluded as follows:

"And it is hereby enacted and declared, that simply changing the form or the proportions of any machine, or composition of matter in any degree, shall not be deemed a discovery."

Mr. Chief Justice Marshall, in *Davis v. Palmer*, 2 Brock (U. S.) 298, 310, Fed. Cas. No. 3645, sustaining the patent and referring to this change in the statute, held that the word "simply" was of great importance; that it was not every change of form or proportion which was declared to be no discovery, but that it was simply a change of form or proportion, and nothing more. His conclusion was that if by changing the form and proportion a new effect is produced, there is not simply a change of form or proportion, but a change of principle or result also, a new and different effect.

And for further, among many, striking exceptions to this "rule" see, for example, *Edison Electric Light Co. v. U. S. Electric Lighting Co.*, 52 Fed. 300, 3 C. C. A. 83; *Winans v. Denmead*, 15 How. (U. S.) 330, 14 L. ed. 717; *American Ordinance Co. v. Driggs-Seabury*, 114 Fed. 936, 52 C. C. A. 556; *Hutter v. De Q. Bottle Stopper Co.*, 128 Fed. 283, 62 C. C. A. 652; *Yost Electric Mfg. Co. v. Perkins Electric Switch Mfg. Co.*, 179 Fed. 511; *Browning Hook & Eye Co. v. Tri-Eye Hook & Eye Co.*, 199 Fed. 189; *Andrew Wire & Iron Works v. Wilson Mfg. Co.*, 199 Fed. 798.

4. Mere aggregation (or juxtaposition) of old elements is not invention.

None of the negative rules require more careful attention to their qualifications than does this rule. In effect, the rule is merely that it is not invention to select old elements; to merely

join together a group of old elements which do not co-operate to produce a unitary result or in which each element has only its customary function. It is believed there is no case of authority in which invention has been denied to an aggregation of new elements.

This principle is again discussed under "Claims" (Heading IX.) The modern rule is presented by *National Cash Register Co. v. American*, 53 Fed. 367, 3 C. C. A. 559, discussing *Pickering v. McCullough*, 104 U. S. 310, 26 L. ed. 749. The earlier case had established a rigid rule of combination requiring the result to be due to the joint and co-operating action of all the elements.

The necessity for qualifying the rule of *Pickering v. McCullough* is evidenced by the fact that the courts before and since that case have sustained many patents in which the invention involved only old elements in a combination producing a new and useful result, but not having each element precisely "co-acting" with every other element.

In the case of *Steiner v. Tabor*, 178 Fed. 839, the court cites *Loom Co. v. Higgins*, 105 U. S. 580, 26 L. ed. 1177 and *Expanded Metal Co. v. Bradford*, 214 U. S. 366, 53 L. ed. 1034, in support of the familiar rule that the use of the old elements does not prevent the possibility of invention. It is well settled that a new combination of elements old in themselves, but which produce a new and useful result, entitles the inventor to the protection of a patent.

5. It is not invention to merely use an old thing for a new purpose. That is to say, mere double use is not invention.

This is a principal feature of the discussion of invention and patentable novelty.

The cases of the Supreme Court, and of the other courts to which general text-book reference has been made, show that the rule and its exceptions have their origin in the early cases and statements of the courts, and they also show a great variance of views. It was not until after *Potts v. Creager*, 155 U. S. 97, 39 L. ed. 275, 15 Sup. Ct. 194 (elaborately reviewed in *Potts v. Creager*, 97 Fed. 78, 38 C. C. A. 47) that the Patent Office and courts gave full weight to the exceptions to the rule in favor of patentability where a new result is achieved in applying an old thing to a new use so as to involve the exercise of the inventive faculties.

A few illustrations will serve to indicate the development of the rule and its exceptions. *Webster's Pat. Cas. 207*, presents an illustration from *Losh v. Hague*, by Lord Abinger:

"If a surgeon had gone to a mercer and said, 'I see how well your scissors cut,' and he said, 'I can apply them instead of a lancet by putting a knob at the end,' that would be quite a differ-

ent thing, and he might get a patent for that; but it would be a very extraordinary thing to say, that because all mankind has been accustomed to eat soup with a spoon that a man could take out a patent because he says you might eat peas with a spoon."

Again, Webster "On the Subject Matter," at page 25, in a note says:

"If the composition of matter now called a silver tea pot had existed before the introduction of tea, and been used for making a similar infusion from other ingredients, its appropriation for application to making tea could not have been the subject-matter of a patent, this being the double use of a known thing, as of a medicine, celebrated for one disease, to another; but if such a composition of matter were not known, there might have been patents for a silver pot as well as for the first earthen tea pot. No one can say that a silver and an earthen pot are same manufacture."

In *Bean v. Smallwood*, 2 Story (U. S.) 408, Fed. Cas. 1173, frequently approved by the Supreme Court, Mr. Justice Story said:

"Now, I take it to be clear, that a machine or apparatus, or other mechanical contrivance, in order to give the party a claim to a patent therefor, must in itself be substantially new. If it is old and well known, and applied only to a new purpose, that does not make it patentable. A coffee mill applied for the first time to grind oats or corn or mustard, would not give a title to a patent. A cotton gin applied without alteration to clean hemp, would not give title to a patent for the gin as new. A loom to weave cotton yarn, would not, if unaltered, become a patented machine as a new invention by first applying it to weave woolen yarn. A steam engine if originally applied to turn a grist mill would not entitle a party to a patent for it, if it were first applied by him to turn the main wheel of a cotton factory. In short, the machine must be new, not merely the purpose to which it is applied. A purpose is not patentable, but the machinery only, if new, by which it is to be accomplished. In other words, the thing itself which is patented must be new, and not the mere application of it to a new purpose or object."

And further in the same opinion, Mr. Justice Story said, quoting from Lord Ellenborough, in *Huddart v. Grimshaw*, Web. Pat. Cas. 86:

"There are common elementary materials to work with in machinery and it is the application of these materials to any particular purpose that constitutes invention; and if the application of them be new, if the combination in its nature be essentially new, if it be productive of a new end and beneficial to the

public, it is that species of invention which, protected by the King's patent, ought to continue to the person the sole right of vending."

This was the view which undoubtedly influenced the Supreme Court in the unfavorable opinion in the case of *LeRoy v. Tatham*, 14 How. (U. S.) 156, 14 L. ed., 367, which first came before the court, in an action at law, the celebrated patent involving a new principle in making lead pipe, but which rather unfortunately claimed only machinery identical in construction with previous machinery for making macaroni and clay pipes. When this case again came before the Supreme Court by bill in equity in 63 U. S. 132, 16 L. ed. 356, the court sustained the patent rendering, however, an opinion, which, while interesting as an essay, supplied no clear foundation for any principle of law.

Judge Blatchford in *Poillon v. Schmidt*, 6 Blatch. (U. S.) 304, Fed. Cas. No. 11,241, says that the claim for machinery in *LeRoy v. Tatham* was read by the Supreme Court as if a claim for a method of casting lead to separate and reunite, at a welding heat under pressure, in a close vessel, by the use of the machinery described, to form lead pipe in the manner set forth.

That is to say, realizing what a great improvement the inventor had actually made, the Supreme Court instead of holding that the application of old machinery to so different and new a purpose was invention, interpreted the claim as if for a new process to save the patent.

The previously noted case of *Potts v. Creager*, *supra*, and its antecedent cases sustain the principle that under some circumstances an old structure may be patented where it is to be employed in some remote art and for a non-analogous purpose and especially where changes were required to adapt the device to its new use. The converse of the case is well presented in *Briggs v. Duell*, 93 Fed. 972, 36 C. C. A. 38.

6. It is not invention to substitute in an art, machine, manufacture or composition of matter, for any element or device, another which performs the same function in substantially the same way and accomplishes substantially the same result. That is to say, the substitution of equivalents is not invention.

While the subject of "equivalents" might have been briefly treated at this time, it has been reserved for a fuller consideration under heading IX.

7. Mere duplication of parts is not invention.

There are, however, striking examples of apparent exceptions to this almost axiomatic rule. In addition to the more familiar cases, *Parker v. Hulme*, Fed. Cas. No. 10,740, has been cited,

and is accepted in *Goss v. Scott*, 108 Fed. 260, 47 C. C. A. 302, as an early authority that duplication may be patentable.

In that case, it should be observed, however, the judge was instructing the jury with reference to the whole patent and the whole invention. He believed the inventors had discovered a new principle of operating water wheels for saw mills in which the water was delivered vertically in the line of revolution of the shaft and in which percussion and reaction were both relied upon to create a vortex and greatly improve the action of both horizontal and vertical wheels, the horizontal wheels having been previously invented. Part of the claim of the inventors was for two or more vertical wheels on the same shaft, and the court made the statement which is quoted in *Goss v. Scott*, meaning, however, that the fact did not militate against the patent and that it might be even itself a patentable feature.

It does not appear, however, that it was necessary to so decide to sustain the patent or to hold infringement. The court in *Parker v. Hulme* refers to a case which does appear to have been decided by the same court on the question of duplication—*Knight v. Gavit*, in which it was held that two rollers produced a new effect in making paper and that the claim was valid. The case is cited as a foot note to *Parker v. Hulme*.

*Goss v. Scott*, supra, presents a striking exception to the general rule. In that case the products of two presses were brought together and the court found invention in putting them together because there was required a change in the manner in which the webs were fed from the two machines to make the completed product which was not merely a duplication of the two machines.

These cases, as many others under these various "rules," again illustrate the fundamental principle at the basis of the consideration of patents, namely, that the real question is whether or not what has been done over the prior art amounts to invention or is so obvious as to be merely mechanical skill or judgment.

8. In general conclusion of these negative rules it may be said that it is not invention to put old devices or elements into new articles or structures without producing any new result.

This statement is in some respects substantially the same as those relating to the substitution of equivalents or mere double use, and in a sense involves also the rule of mere mechanical skill. Or, as is summed by the Supreme Court in *Smith v. Nichols*, 88 U. S. 112, 22 L. ed. 566:

"But the mere carrying forward, new or more extended application, of the original thought, a change only in form, proportions, or degree, the substitution of equivalents, doing sub-

stantially the same thing in the same way by substantially the same means with better results, is not such invention as will sustain a patent."

This excellent statement covers the majority of the "rules," but it is the exceptions which more particularly require to be borne in mind because they best illustrate how close and careful must be the consideration of whether or not a new idea of means or method has been invented.

(d) Want of Patentable Novelty.

(aa) Prior Use. The invention must not have been known or used by others, in this country, prior to the completion of the invention in this country by the applicant. A single use by another, in this country, prior to the date of applicant's invention would negative novelty even though the knowledge be that of one person and the thing in use be hidden from sight, as, for example, a bolt in a safe, or a feed-clamp in an arc light.

To obtain a valid patent the applicant must have been the inventor of the device, though he may have used it himself or it may have been used by the public for two years before applying for a patent, or he may, if necessary, experiment with it for even longer time (see "Public Use"). The bar of prior use has a special exception in favor of the inventor in R. S., Sec. 4923.

Keeping in mind the qualification that the inventor must believe himself to be the original and first inventor at the time of applying for a patent, it may be said broadly that no amount of foreign use will affect the patentability of an invention.

In the cases there are striking illustrations of this principle and also of the care required in considering allegations of prior use or public use, and in distinguishing such uses from unsuccessful experiments or abandoned experiments.

(bb) Prior Patents and Publications.—A prior patent to another is the most obvious and direct bar to the grant of patent. A patent is granted, as will be hereafter shown, for the invention covered by the claims. Matter not claimed is therefore not "patented," and must be cited as a "publication."

This distinction becomes of importance in the consideration of domestic patents, as bars or "references," for where the subject-matter in question is shown and described but not claimed in the reference, the bar may be overcome by an affidavit from the applicant to facts showing a completion of the invention in this country before the filing of the application upon which the domestic patent issued; also that the invention has not been in public use or on sale for more than two years prior to his application, and that he has never abandoned the invention. A foreign patent claiming or not claiming the invention, and a



printed publication may be overcome by the same oath applied to the time prior to the date thereof. (See Rule 75.)

A foreign patent procured by or for the inventor for the same invention is not a bar to the grant of a domestic patent for the same invention. But if the application shall have been filed more than twelve months before the domestic application then no patent shall be granted in this country. The time limit under this statute for design patents is four months (R. S. Sec. 4887, as amended March 3, 1897, and March 3, 1903).

A domestic patent may be applied as a substantial anticipation, against the same inventor in a subsequent application for patent as showing want of patentable novelty, or as evidencing the kind of abandonment of features not claimed technically known as "dedication to the public." The first point will be further considered under "Double Patenting," and the second under "Abandonment—Dedication to the Public."

Patents are generally cited or produced as statutory bars, without reference to the particular heading under which they fall. When a description or drawing making part of a patent is cited, it is a publication (*Ex parte Borden*, 23 O. G. 439), and publications are referable to the date only, as will be seen. In such a case, however, the publication carries intrinsic evidence of "prior knowledge" back to the date of filing, where it was a part of the application as filed, and may be a reference as indicating *prima facie* prior use.

Without a further discussion of foreign patents it may be said that it is immaterial whether they are cited as patents or as publications if the purpose be to exhibit them as parts of the prior art.

A "printed publication" is anything which is printed, and without any injunction of secrecy is distributed to any part of the country. (*Rosenwasser v. Spieth*, 129 U. S. 47.)

The Circuit Court in *Parson v. Colgate*, 15 Fed. 600, held a trade circular not a publication. (Doubtful.) Two circuit courts have shown a disposition to discredit a drawing unaccompanied by a description. (*Reeves v. Keystone Bridge Co.*, 1 O. G. 466, Fed. Cas. No. 7565.) The Commissioner of Patents as shown in *Ex parte Borden*, *supra*, held a clear, full and obvious drawing sufficient. He stated that often such a drawing is the best anticipation, as not admitting of any discussion of terms such as arises upon description. The Supreme Court of the United States settles this in *Wright v. Yuengling*, 155 U. S. 47, 39 L. ed. 64—a drawing may be a reference.

It is hardly necessary to add that the description must be of the invention, and the drawing must show the invention. The best test may be found in the requirement put upon the in-

ventor in his description—that it shall be “of the manner and process of making, constructing, compounding and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same, \* \* \*.” The age or language of the reference is immaterial. Virgil and the Bible have been frequently cited, and, in one instance, a drawing and description of a prehistoric whistle was cited.

(e) Public Use or Sale.—This and “abandonment” fall under the general term of laches. Public use or sale for more than two years prior to the application is a bar; that is, use in public or by the public in the way of business, with or without the consent or allowance of the inventor, or an offer for sale or actual selling.

It has been shown in the consideration of “prior use” that a single use by another, even though concealed from sight, is a bar. The same is true as to public use. In *Egbert v. Lippman*, 104 U. S. 333, 26 L. ed. 755, the use of a corset steel for eleven years by a lady who afterward married the inventor was held to be public use. But use in public for experimental purposes is not public use of the character which will create a bar, as in the case of the *Nicholson pavement*, which required a prolonged trial to determine its wearing qualities, and which was tried for six years near a toll-gate by the inventor without losing his right to a patent. (*Elizabeth v. Pavement Co.*, 97 U. S. 126, 24 L. ed. 100). It will be observed in this case that the inventor had not parted with the pavement; had not laid it for profit; but was making a test, and not merely using it in the ordinary course of business, though the very nature of the invention required an open public experiment.

All cases prior to *Andrews v. Hovey*, (1887), 123 U. S. 267, 31 L. ed. 160, had been of use by others, with the consent and allowance of the inventor or by the inventor himself. This case is the first that directly takes up the point of public use without the consent and allowance of the inventor.

The court says: “The evident purpose of this section 7 of 1839, was to fix a period of limitation which should be certain and require only calculation of time, and should not depend upon the uncertain question of whether the applicant had consented to or allowed the sale or use.” That such “consent and allowance” is not a factor has been expressly decided also by the Court of Appeals of the District of Columbia. (*Ex parte Drawbaugh*, 67 O. G. 929.)

(f) Abandonment.—The patentee receives his patent as the result of a contract with the public, by which his dominion over

his own invention is secured, in consideration of a full disclosure of his invention, so that at the expiration of the set term it may be generally made or used. When, however, the public already have that disclosure, there is no benefit or consideration which can be extended by the inventor. Once the disclosure is complete the public may seize it, and there is no official recompense except by a special act of the legislators proceeding from a sense of moral justice. Patents are not bestowed as medals, to mark and reward a benefactor. This is the broad principle, but, as instanced for example under "Public Use" it is not applied rigidly against the "first inventor."

The word "abandonment" contemplates a perfected invention, "adapted for use" or embodied in practical means. This term is not properly applied to "crude experiments," nor is it required in those instances of vague invention which are of the past, forgotten, and are brought to light and memory upon the spur of subsequent successful inventions. As indicated, the term "abandonment" applies to the surrender to the public of a complete invention embodied in a practical means or clearly disclosed, and so given to the public forever. (*Bates v. Coe*, 98 U. S. 31, 25 L. ed. 68; *Consolidated Fruit Jar Co. v. Bellaire Stamping Co.* (1886), 27 Fed. 377; *Am. Hide Co. v. Am. Tool Co.* (1870), 1 Holmes (U. S.) 503, 4 Fish, (U. S.) 284, Fed. Cas. No. 302.)

Abandonment is a question of intention, and the courts have required the strongest proofs before decreeing abandonment. They have held that no delays in the Patent Office without fault of the inventor work an abandonment, (*Sayles v. C. N. W. Ry. Co.* [1865], 2 Fish. (U. S.) 623, Fed. Cas. No. 12414; *Crown Cork, etc. Co. v. Aluminum Stopper Co.*, 108 Fed. 845, 48 C. C. A. 72; *United States v. American Bell Tel. Co.*, 128 U. S. 315, 32 L. ed. 450), that the mere abandonment of the application is not abandonment of the invention, (*Western Electric Co. v. Sperry Elec. Co.*, 58 Fed. 186, 7 C. C. A. 164; *Dederick v. Fox*, 56 Fed. 714; *Lindsay v. Stein*, 10 Fed. 907); and that no number of successive applications indicates an intention to abandon; but that, in reference to the question of abandonment, all such may be regarded as one application, the ones subsequent to the first being known as "continuing" applications. (*Godfrey v. Eames*, 68 U. S. 317, 17 L. ed. 684).

In these matters, however, the courts are giving much closer scrutiny to the matter of abandonment and especially to a lapse of time as supporting and giving force to testimony of what was done in the interval. (*Consolidated Fruit Jar Co. v. Bellaire Stamping Co.*, 27 Fed. 377.)

The time for abandonment may be prior to the filing of the

application or subsequent to the application, and a patent itself may furnish the strongest evidence of one form of abandonment which will be hereinafter discussed under the sub-heading "Dedication to the Public."

In recent years there has been a marked change in the attitude of the courts in applying these familiar and long-established doctrines of abandonment. Even the hard and fast views of abandonment which for years obtained in the Patent Office under the direction of the Supreme Court of the District of Columbia, requiring complete and positive proof of actual abandonment, have been modified so that, in effect, the burden is really upon him who has permitted another to come to the Patent Office or put his invention in use during the period of inactivity of the earlier reducer who, under the old rule, would have been entitled to be known as "the first inventor."

The case of *United States Rifle and Cartridge Co., et al. v. Remington & Sons* (1886), 118 U. S. 22, 30 L. ed. 53, precisely applies this doctrine:

"The renewal of Cochran's application on December 5, 1870, was under the provision of the Act of July 8, 1870, Chap. 230, Sec. 35, which allowed any inventor whose application for a patent had been rejected or withdrawn before the passage of that act to renew it within six months after its passage; and provided, further, that upon the hearing of such renewed application, abandonment should be considered as a question of fact. (16 Stat. at L. 202.)

"The rules of law which must govern this case are clearly established by the judgment of this court in *Planing Machine Co. v. Keith*, 101 U. S. 479, 25 L. ed. 939. The decision of the Commissioner in favor of the applicant, upon the question whether the invention has been abandoned, is not conclusive, but may be contested and reviewed in a suit brought for the infringement of the patent. There may be an abandonment of an invention to the public, as well after an application has been rejected or withdrawn, as before any application is made. Such abandonment may be proved, either by express declaration of an intention to abandon, or by conduct inconsistent with any other conclusion. An inventor whose application for a patent has been rejected, and who, without substantial reason or excuse, omits for many years to take any step to reinstate or renew it, must be held to have acquiesced in its rejection, and to have abandoned any intention of further prosecuting his claim."

This decision virtually set aside the ruling of the Supreme Court of the District of Columbia in *Ex parte Cochran*, which had reversed the decision of Commissioner Fisher in *ex parte Cochran*, 1869 C. D. 30. The Commissioner had held that

an inventor could not withdraw his application, make no effort to renew it for eight years during which time the subject-matter of the invention had been incorporated into the substance of many subsequent inventions, and then file a new application, and obtain a patent which, to support the novelty of the invention, had to relate back to the first application.

After the Act of 1870, a decision to the same effect as that of *Ex parte Cochran*, but based upon the new law and by another Commissioner, was made in *Gray v. Hale, et al.*, 1871, C. D. 129. This decision was also overruled by the Supreme Court of the District of Columbia. That both the Commissioners were right was evidenced by the decision of the Supreme Court in the cited case, *U. S. Rifle & Cartridge Co. et al. v. Whitney Arms Co., et al.*

In view of the policy of the law, the more "advanced" decisions have been based upon a principle of "equitable estoppel"; but they have also foundation in the statute, and upon the term "abandonment" in the statute.

The present views of abandonment were not only stated in the early decisions of the Commissioners but they were strongly expressed in the decision of the Commissioner of Patents in *Farmer v. Brush*, 17 O. G. 150, 1880 C. D. 5.

"If an inventor abandons or forgets his invention before its public use, it may become the property of a subsequent inventor. Abandonment, in the sense in which the term is here used, is the cessation of all effort to furnish the invention for public use. Such abandonment may be voluntary and absolute, as when the invention is deliberately thrown aside with a purpose never to resume it; but it also may occur when the invention is thrown aside, not with a purpose never to resume it. If it is merely laid aside temporarily, with an intention to resume it, there is no abandonment. But the question of abandonment in such case is not one of mere mental operation. A mere mental purpose or intention to give the public at some future time the benefit of a completed invention, unaccompanied by any corresponding acts or words, amounts to nothing; the presumption raised by acts of the party of a purpose to abandon will not be overcome by his testimony that he mentally intended not to abandon it. Such testimony will be construed in connection with the acts of the party; and although it may throw light upon such acts, and, taken in connection with them, may determine their meaning and effect, yet it will not always be decisive when contradictory, rather than explanatory, of such acts.

"Now, a mere delay of two years in the application for a patent is not evidence of abandonment; but neglect to confer the benefits of the invention upon the public, whether it is or is

not accompanied by neglect to apply for a patent, is evidence of abandonment. The inventor may voluntarily keep his invention secret as long as he sees fit to do so, provided he applies for a patent before another invents the device. He may abandon or forget his invention, provided he resumes or recalls it before another makes the invention. But his rights do not, in either case, relate back through the intermediate 'vacuum' to the original invention, so as to give him the benefit of its date as against a rival inventor."

This is the reasoning of the Supreme Court, and, as more directly in point with reference to Patent Office practice, of the Court of Appeals of the District of Columbia in *Mason v. Hepburn*, 13 App. D. C. 86, 84 O. G. 147, and in the application of the principle in the dictum of the court with reference to "Renewals" in *Cain v. Park*, 14 App. D. C. 42, 86 O. G. 747, and the cases cited therein and discussed, post, under "Interferences." The case of *Mason v. Hepburn* established the rule that a completed invention may be lost by "concealment." That is to say, that even if an inventor had made an invention and actually introduced it to practice prior to another, his right to a patent would be barred by a designed or negligent concealment from the public and the subsequent entry of another into the apparently unoccupied field.

(g) Abandonment—Dedication to the Public.—In the great majority of patents the description of the invention covers more than the applicant can or does claim as his invention, for the description necessarily sets forth the invention in its relation to the art, and generally includes connecting and related parts to clearly indicate the place of the invention in a particular art, while the claims are drawn to precisely cover that part or improvement which the applicant regards as his own invention, because of his belief that the features unclaimed are not patentable or because of some inadvertence, accident or mistake, or because of neglect by himself or his attorney. In such a case prima facie the unclaimed feature is abandoned, that is, dedicated to the public.

"Nothing is better settled in the law of patents than that the patentee may claim the whole or only a part of his invention, and that if he only describe and claim a part he is presumed to have abandoned the residue to the public." (*McClain v. Ortmyer*, 141 U. S. 419, 35 L. ed. 800.)

That this "rule," however, courtesies to great inventions or even "meritorious" inventions, is shown in discussing "Equivalents" under "Letters-Patent and Their Construction and Scope."

Abandonment is, as has been said, not presumed; but an omission to claim matter clearly shown and described operates

as evidence of intention to abandon. Such omission may be direct opposition to the real intention of the inventor, and he has, in such cases, certain remedies; that is, he may under proper conditions, reissue or file another application. The distinction is, in brief, as follows: After the grant of a patent—that which is shown and described therein, and which might have been claimed, but was not, may be had by reissue, provided the error arose by inadvertence, accident or mistake, and here he not laches. Before the grant of a patent—matter shown and described but not claimed, may, where it is sufficiently distinct to constitute a separate invention, be placed in another application pending at the same time.

In one case only (by the Office rulings) can matter shown or described (disclosed) in a patent, be covered by an application filed subsequent to the grant of the patent; and that is where the subject-matter was not claimed in the patent, because covering a separate and distinct invention. (Mullen v. Mullen, 50 O. G. 837; Ex parte Beggs, 50 O. G. 1130, and decisions cited, and R. S. U. S. Sec. 4916.)

The doctrine of "dedication" may make an earlier patent invalidate a later patent, or create a bar to a subsequent application, and is a restriction upon the disintegration of a single, integral and indivisible invention into separate parts claimed in separate applications. Its effect, in practice, is illustrated in the consideration of "Double Patenting." Under this topic now being discussed (but equally applicable to that just named), may be cited, as an illustration, Ex parte Johnston, 46 O. G. 1641, 1889 C. D. 130, stating both sides of the question.

Johnston's patent, No. 348,018, showed two different eye-glass frames. Originally there was a broad claim covering both forms. This was canceled, and the patent went out with a claim to one form. Subsequently (within six months) he applied for the second form. Quoting Ex parte Roberts, 1887 C. D. 61, and decisions there cited, it is summed up as follows:

"It results from the necessary conditions under which the patent issues, that, when an applicant fails to claim an element, part, or feature of his invention, which he might have claimed, he dedicates such unclaimed element to the public. The omitted thing is part of the original invention, necessary to its operation and use; but in all these cases there was no proposition like the one now before me; that is, where an absolutely independent invention is shown, which had no connection by way of arrangement or combination with the other distinct and separate invention shown and claimed, it would be dedicated to the public."

Held, not dedicated. (Quotes Eastern Paper Bag Co. v. Standard Paper Bag Co., 30 Fed. 63.)

(h) Double Patenting, or Two or More Patents to the Same Inventor for the Same Invention. This heading may perhaps more accurately be stated as relating to earlier and later patents and applications of the same inventor for the same invention. "It is hardly necessary to remark that a patentee could not include in a subsequent patent any invention embraced or described in a prior one, granted to himself, any more than he could an invention embraced or described in a prior patent granted to a third person. Indeed, not so well; because he might get a patent for an invention before patented to a third person in this country, if he could show he was the first and original inventor, and if he should have an interference declared." (James v. Campbell, 104 U. S. 832, 26 L. ed. 786.)

It has long been the established practice of the Patent Office to use patents as references without any regard to the identity of the inventor of any particular patent. For example, if an inventor should substitute for an element of his patented combination some element old in the same relation and having the same function, his claim for the alleged new combination would be properly rejected upon his own patent and a patent showing the substituted element. That is to say, his application would be held to be wanting in patentable novelty over his own patent in view of the other patents, because it is not invention to replace an element of a combination by another element old in the same relation and having the same function. In such a case the patent is cited against an application which is not for the same invention. The patent is simply one of the many and it is used as a reference because it is the best illustration of the gist of the claim. But, as indicated in the quotation from James v. Campbell, and as stated more fully under "Abandonment, Dedication to the Public," a patent may, and generally does, describe matter which is not claimed. And it may be that certain features are unclaimed merely because old and well-known or not thought patentable. It is a common occurrence for a patentee to take a patent with a claim which he later regards as more narrow, specific or restricted than the invention, or which does not make any claim to some feature, described or disclosed. This undue limitation may be remedied by a reissue for the same invention he intended to claim, where it can be shown that the patent is inoperative or invalid by reason of inadvertence, accident or mistake, and there has been no laches. Where no such showing can be made the only remedy is by a new application, and this remedy can be had only where the matter unclaimed is another invention, different from that claimed, which was properly reserved for the new application. For the doctrine of "Dedication to the Public," that matter unclaimed is presumed



to be dedicated to the public, operates where the new application is for an integral and necessary part of the invention of the patent, or for a mere difference of breadth or scope.

In many cases, however, the applicant presents his subsequent or separate applications as separate and distinct inventions. The rules of the Patent Office do not permit two or more independent inventions to be joined in one application, but two or more separate and distinct inventions may be joined when they mutually contribute to produce a single result. It will be readily seen that there may be many cases which will present the most difficult questions of joinder, and that where an applicant had not fully covered all he described, it may have been because of his obedience to a positive requirement, a well-understood practice of the Office, because his case is one of two or more inventions which may or may not be joined at his option, or because he has run counter to the principles of joinder by reason of a mistake of judgment or through neglect. That is to say, the separation may have arisen through an obedience to the requirement of the rules, an acceptance of the privileges of the rule, or a failure to understand or observe the converse of the rule, which is, that the Patent Office must see that all that an applicant claims of a simple, integral, indivisible invention shall be in one patent, for the courts will not sustain two or more patents for the same idea or structure of invention. This attitude of the courts is exhaustively discussed in the decision of the Supreme Court of the United States in *Miller v. Eagle Mfg. Co.*, 151 U. S. 186, 38 L. ed. 121, under the text, that it is the "well-settled rule that two valid patents for the same invention can not be granted either to the same or to a different party." The court cites *Suffolk Company v. Hayden*, 70 U. S. 315, 18 L. ed. 76; *James v. Campbell*, 104 U. S. 382, 26 L. ed. 786; *Mosler Safe Co. v. Mosler*, 127 U. S. 355, 32 L. ed. 182; *McCreary v. Pennsylvania Canal Co.*, 141 U. S. 467, 35 L. ed. 817; and *Underwood v. Gerber*, 149 U. S. 224, 37 L. ed. 710, to the effect that of two patents for the same invention issued to the same inventor, the latter is void, regardless of the filing date of the applications, and states in substance that, the reason for the rule established for the above-cited cases is that the power to create a grant is exhausted by the first patent, and for the further reason that a new and later patent for the same invention would operate to extend or prolong the period allowed by law. (*Odiorne v. Amesbury Nail Factory*, [1819] 2 Mason 28, 1 Robb 300.) The summing up of the court is as follows:

"The result of the foregoing and other authorities is that no patent can issue for an invention actually covered by a former patent, especially to the same patentee, although the terms of

the claims may differ; that the second patent, although containing a broader claim, more generic in its character than the specific claims contained in the prior patent, is also void; but that where the second patent covers matter described in the prior patent, essentially distinct and separable from the invention covered thereby and claims made thereunder, its validity may be sustained.

“In the last class of cases it must distinctly appear that the invention covered by the later patent was a separate invention, distinctly different and independent from that covered by the first patent; in other words, it must be something substantially different from that comprehended in the first patent. It must consist in something more than mere distinction of the breadth or scope of the claims of each patent. If the case comes within the first or second of the above classes, the second patent is absolutely void.”

The practice of the Patent Office was stated by Commissioner Hall in *Ex parte Roberts*, 40 O. G. 543, and by Commissioner Mitchell in *Ex parte Mullen & Mullen*, 50 O. G. 837, and by various later decisions requiring that but one application shall issue for the same invention, the later ones being rejected upon the earlier, or the allowed application.

The practice of the courts in following the rules interpreting the subject and distinguishing proper divisional patenting from illegal and improvident double patenting, is presented in *Thompson-Houston v. Ohio*, 80 Fed. 712, 26 C. C. A. 107.

It is not always clear, however, which of two patents is the senior. In *Electric Light Co. v. Brush Co.*, 52 Fed. 130, 2 C. C. A. 682, the Second Circuit held that where patents are issued on the same day, the complainant might elect between the two, but the same circuit in *Crown v. Standard*, 136 Fed. 841, 69 C. C. A. 200, held that the priority of numbering must control.

In *Benjamin Electric Mfg. Co. v. Dale Co., et al.*, 158 Fed. 617, 85 C. C. A. 439, it was accepted as a general rule that, of two patents granted to the same inventor, the one first numbered takes precedence of the other; but an exception was noted where the patentee had an application pending for the second when the first was issued, and especially where the two are the result of the splitting of the same original application by the Patent Office, in which case neither would be held an anticipation of the other and they may be treated as a single patent. This exception would apparently cover practically all of the cases in which the question is likely to arise.

It appears remarkable that upon a principle so elaborated there could be any considerable number of illustrations. However, the practical difficulties arise in the construction of differ-

ent phrases or terms of claims relating to the same invention. A striking illustration of attempting to cure an error of having taken too narrow claims in a patent by broadening the claims in a co-pending but not divisional application instead of reissuing the patent, is found in *Union Typewriter Co. v. Smith*, 181 Fed. 966, 104 C. C. A. 430.

The views of the courts with reference to the relation of several related applications is succinctly expressed in *Anderson v. Collins*, 122 Fed. 451, 58 C. C. A. 669:

“Even where each of several applications which subsequently ripen into patents to the same inventor discloses all the inventions claimed in all the applications, and they are all pending at the same time, no one of the applications or patents can be used to anticipate any of the claims of the others which it does not itself claim and secure. *Ide v. Trorlicht*, *Duncker & Renard Carpet Co.*, 115 Fed. 137, 145, 53 C. C. A. 341; *Walker on Patents*, Sec. 180; *Westinghouse Electric & Mfg. Co. v. Dayton Fan & Motor Co.*, (C. C. A.), 106 Fed. 724, 726; *Suffolk Mfg. Co. v. Hayden*, 3 Wall. (U. S.) 315, 318, 18 L. ed. 76; *Graham v. McCormick*, (C. C. A.) 11 Fed. 859; *Graham v. Mfg. Co.*, (C. C. A.) 11 Fed. 138, 141.”

In that case the first patent was held not an anticipation of the subsequent patent “(1) because the applications for the two patents were pending in the Patent Office at the same time, and (2) because the combination described and claimed in the second is not described or claimed in the application for the first patent.” It may be added to this that, even if the subject-matter had been described, the rule would not have been altered, because the question is in this particular topic, whether or not the claim was either a narrow or a broader expression of the same invention; and, secondly, whether or not if they be broad and narrow expressions of the same invention they were co-pending applications. See also, for discussion and authorities *Victor Talking Mach. Co. v. American Graphophone Co.*, 140 Fed. 860, *affd.* 145 Fed. 350, 76 C. C. A. 180.

It follows, as before suggested, from these principles that a second patent may not be had for a preceding patented combination and non-patentable elements. See, for example, the discussion in *Dodge Coal Storage Co. v. New York Cent. & H. R. R. Co.*, 139 Fed. 976, *affd.* 150 Fed. 738, 80 C. C. A. 404.

**Some General Rules.** This discussion of the statutory requisites of invention and the statutory bars and their interpretation indicates the intimate relation of the various divisions of the patent law.

In defining invention and “What is Patentable,” there must be included also some reference to priority of invention, the scope

of the patent, reissues, infringement, and other more "advanced" phases of the patent law, which follow under appropriate headings.

The law and the cases may, it is suggested, be condensed to thus present the principles of patentable inventions:

1. The disclosure of a new idea of means or method useful in a practical art and not obvious even to those skilled in the art, is the foundation for every valid patent.

That the idea is of practical value, that is, useful, may be shown by:

(a) Practical demonstration;

(b) Physical embodiment, from which, even without practical demonstration, it is obvious that the idea is capable of practical utility;

(c) An application for patent, or a patent, disclosing a proposed physical embodiment which can be made of practical value by an exercise of the ordinary skill of the art.

2. An idea is not, however, new or patentably novel merely because no prior means of giving it practical effect are in existence, or because, under the statements of the older decisions, it has not been "embodied in practical means" for a mere prior disclosure may be a sufficient guide to a practical embodiment which any one may make.

3. An idea of means or method is new and patentably novel, if not obvious without the aid of the new idea to those skilled in the art, and not previously known in this country, and not previously made accessible anywhere by patent or publication.

4. The person upon whose disclosure an application for a patent is based must not have received the idea from another; but he may, if he first conceived the idea, have it developed or embodied by another.

5. If this is new and patentably novel, the idea may be the basis of a valid patent, if not subject to the prohibitions of the public use or sale or publication for more than two years prior to the application, or not patented abroad upon an application by or for the same inventor filed more than twelve months before the domestic application or unless the idea is proved to have been abandoned, or the conduct of the inventor establishes such a presumption of abandonment or of dedication to the public as to create an equitable estoppel against him.

### III. WHO MAY OBTAIN A PATENT.

There is no limitation in the statutes, it being provided that "any person who has invented or discovered" may secure a patent. (R. S. U. S., Sec. 4886.)

The statutes and rules of practice (R. S. U. S., Sec. 4885 and

Rule 26) provide for application and the taking out of a patent by an executor or administrator or by the guardian of an insane person; for the granting of a patent to an assignee of the whole or jointly to the inventor and the assignee of a part, without limit to the number of patentees; and (R. S. U. S., Sec. 4897, Rule 175) for the renewal of a forfeited application by "any person who has an interest in the invention or discovery, whether as inventor, administrator or assignee."

It is therefore apparent that an executor, an administrator or a guardian may be an applicant and a patentee, and that an inventor and his assignee, for example, may be joint patentees. It is necessary, however, that the inventor, if alive and competent, shall make oath to the specification.

An invention to be patentable need not be the product of a single mind; it may be a joint invention; it may be the result of the invention of many where the inventive faculty of all is exercised in the completion of a single invention. It is not sufficient that one shall have invented one improvement and the other a distinct and independent improvement; nor is it sufficient that one person furnish the capital and another make the invention.

The rule that, if one man does all the inventing and another does all the constructing, the first is the sole inventor, was presented in the leading case of *Agawam Co. v. Jordan*, 7 Wall. (U. S.) 583, 602, 603, 19 L. ed. 177, cited in many subsequent authorities, and quoted hereinafter under "Interferences."

It frequently happens, however, that those who might be joint patentees, but are not joint inventors, file a joint application for a patent. In such a case, it is not unusual for one of these, who has concluded himself to be the sole inventor, to then file a sole application. There then may be an "interference" proceeding between the joint applicants and the sole applicant to decide who is the first inventor.

It should be noted that the sole applicant must file his sole application before the invention has been in public use for two years prior to the joint application.

The rule of procedure in the Patent Office under which joint inventors are treated as a different entity from one of the inventors filing a sole application, is well presented with citations from various authorities in *Ex parte Weil & Grant*, 173 O. G. 1081, 1911 C. D. 249.

#### IV. THE PATENT OFFICE—ITS ORGANIZATION AND FUNCTIONS.

The Patent Office and its conduct are provided for in the Revised Statutes, Sec. 441, 475, 478, 480-487 and various other statutes relating to details.

Though the statutes make the Patent Office a bureau of the Department of the Interior and provide that the Commissioner of Patents shall superintend or perform all duties respecting the granting and issuing of patents under the direction of the Secretary of the Interior, nevertheless in his judicial capacity the Commissioner of Patents is an independent tribunal, the law having given no right of appeal or petition from him to the Secretary of the Interior where the Commissioner exercises his discretion or judgment in any matter relating to the examination of applications for patents or the granting of patents. This is true notwithstanding the fact that, by Section 483 R. S. U. S. the regulations or rules of practice established by the Commissioner of Patents must receive the approval of the Secretary of the Interior. (*Butterworth, Comr., etc., v. United States ex rel. Hoe*, 112 U. S. 50, 28 L. ed. 656.)

Since *Butterworth v. United States ex rel. Hoe*, there have been many cases before the Secretary of the Interior asking a review of the acts of the Commissioner of Patents. A distinction has been made between those acts of the Commissioner which are judicial or quasi-judicial and those which are ministerial. The line is defined in *Houston v. Banker and Bannister v. Eastman*, 44 O. G. 697, quoted in the opinion of Assistant Attorney-General Hall in *Ex Parte Cote Co.*, 65 O. G. 1915.

That the Commissioner in recording assignments is a ministerial officer, see *Ex Parte Church*, 82 O. G. 1987.

There are two Assistant Commissioners. Either of these, when rendering a judicial opinion and decision, is the Commissioner or Acting Commissioner within the law.

The examination of applications is performed by a body of Primary Examiners and Assistant Examiners, constituting nearly fifty divisions. In addition to this is a clerical force, an assignment division for recording assignments, etc., and various other business divisions at the head of whom is the Chief Clerk, now under the law, a member of the examining corps.

The statutes clearly set forth the duties of the Commissioner and the Examiners-in-Chief but do not define the duties of the Primary Examiners. Theoretically all examinations and all actions of the Patent Office are by the Commissioner of Patents. Practically a formal decision of the Primary Examiner from which no appeal has been taken may become conclusive even against any action by the Commissioner. See, for example, *United States ex rel. Newcomb Motor Co. v. Moore*, 30 App. D. C. 464, 133 O. G. 1680, 1908 C. D. 332.

While the Commissioner has supervisory authority over the various examiners it is seldom exercised. Though cases which have been rejected may reach him by appeal, few which have

received favorable action are brought to his attention except incidentally in an interference contest.

The Examiner of Interferences is a Primary Examiner having charge of interferences. The decisions of the Primary Examiners and the Examiner of Interferences are reviewed upon appeal by the Examiners-in-Chief, a tribunal of three. Petitions upon questions of practice are taken directly from the Primary Examiners to the Commissioner whose decision is final. Appeals from the Examiners-in-Chief are heard by the Commissioner, or by one of the two assistant Commissioners; and appeals may be taken from any of them to the Court of Appeals of the District of Columbia.

It has been in some measure unfortunate that the public has not had clearly in mind the relation of the Patent Office to the public.

The purpose of the patent laws to "promote the progress of science and the useful arts" was not merely to promote the interests of authors and inventors, but rather, to promote the interests of the whole public. For this reason patents are granted in exchange for a disclosure of the invention. The Patent Office is, in effect, a great industrial library in its relation to the public. In its practical workings the printed disclosures are, for lack of proper facilities, stored in such a manner as to require almost inventive ingenuity to trace the travels of an idea through various arts.

There can be no question of the influence of patented inventions upon the arts. This is evidenced, not only in the production of new inventions, but in the actual creation of new industries in this generation, whose genesis and development are pictured and phrased in the copies of patents which flood the inadequate quarters of the Patent Office.

The electric light, the electric car and motor, electric railways, the telephone, the bicycle, with all its allied features, the gas engine in its varied commercial forms, the typewriter, amateur photograph, cash registers, cash carriers, basic steel, the manufacture of aluminum, the graphophone, the kinoscope, the half-tone process of photo-engraving, the chrome-tanning process, smokeless powder and other high explosives, acetylene gas, linotype machines, automatic weighing machines, tabulating machines, adding machines, flying machines and the whole realm of electro-chemistry, all are productions of this generation and all are directly traceable to the impulse given invention by the hopes of reward from the limited monopoly of a patent.

If in some occasional cases there have been attempts to utilize patents to cover more than the contract warranted, on the other

hand, in many cases, patents have broken up or prevented commercial monopolies by opening new fields, and the disclosures presented through the patents constitute an almost inexhaustible field of practical value upon which many of these industries have been established after the expiration of the patents, and in many cases, unfortunately, after the inventor or the patentee had failed in receiving his due reward.

## V. APPLICATIONS—PROCEEDINGS IN THE PATENT OFFICE.

The Statutes and the "Rules of Practice" (gratuitously distributed by the Patent Office) specifically recite the formal requirements of an application and the rules, in an appendix, give various forms for the preamble, specification, claims, oath, etc., as well as for papers used upon petition, appeal, interference, etc.

The leading statute upon the vital parts of an application is Sec. 4888 R. S. U. S., providing for an application in writing, "of the manner and process of making, constructing, compounding, and using" the invention, "in such full, clear, concise and exact terms as to enable any person skilled in the art and science with which it appertains, or with which it is most nearly connected, to make, construct, compound and use the same." The section in conclusion requires that the inventor "shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery."

Secs. 4889-4894 provide for drawings, when requisite, for specimens of the ingredients or composition, etc., for models, when requisite; define the oath required from the applicant; provide for the issuance of a patent following an examination by the Commissioner of Patents, and for a limitation of one year upon the time of completing an application after filing.

Sec. 4903 provides for a notice to the applicant of the rejection of a claim.

Secs. 4909-4919 provide for appeals from the Primary Examiner to the Examiners-in-Chief after the claims have been twice rejected, or from the "examiner in charge of interferences," in an interference cause; for an appeal from the Examiners-in-Chief to the Commissioner; for an appeal from the Commissioner to the Supreme Court (this appeal under section 9, act of February 9, 1893 now being to the Court of Appeals of the District of Columbia); and for notice of such appeal. They also define the proceedings on appeal to the Court, the determination of such appeal and its effect in governing further proceedings in the Patent Office.



It is provided, however, in Section 4914 that no opinion or decision of the court in any such case shall preclude any person interested from the right to contest the validity of a resulting patent in any court wherein the same may be called in question.

Sec. 4915 provides that, after a patent has been refused by the successive tribunals, the applicant may have remedy by a bill in equity and, in case of a favorable adjudication, the Commissioner of Patents may be authorized to issue a patent.

The "Rules of Practice" define the details of procedure upon an application. Many of these require no comment. Some of them, however, are, in effect, substantive law and have been the subject of various interpretations by various Commissioners and the courts.

When an application is filed complete, that is, with the petition, specification, claims, oath, drawings and fee, it is given a serial number and then assigned to the proper division to be examined in the order of filing. The action by the Examiner may relate to formal matters and be in the form of objections, directly reviewable upon petition by the Commissioner without fee, or to the merits of the case and be in the form of a rejection. Ordinarily an action will embody both objections and rejections.

If the Examiner thinks that more than one invention is set forth in the application he requires division. The rule of joinder of inventions in one patent in the courts is broadly that the inventions must be connected in design and operation, but it is doubtful if, on principle, a patent could be held invalid because two or more independent inventions had been joined (*Hogg v. Emerson*, 11 How. (U. S.) 587, 13 L. ed. 824).

A court, however, may refuse relief in such a case (*Sessions v. Romadka*, 145 U. S. 29, 36 L. ed. 609, 12 Sup. Ct. 799).

The rule of joinder of two or more inventions in one application in the Patent Office is based upon Rules 41 and 42 and permits joinder only where the distinct inventions are dependent upon each other and mutually contribute to produce a single result.

The practice under this rule is one of policy rather than of law. The constant (and perhaps unfortunate) tendency to multiplication of divisions in the Patent Office and the elaboration of classification tend to more and more limit what may be included in one application.

There are certain well recognized lines of division, that seldom vary and are seldom questioned: For example, between an electric motor and a fan which it might drive; between a steam engine and an air pump which it might operate; between a scoop for throwing water into the tank of a locomotive, and an injector for forcing the water into the boiler. Notwithstanding their

relation in one organism, such things as these are clearly distinct and independent inventions. The progress of classification, however, has now practically taken apart the motor, engine, and pump, so that almost every separate part is the subject of separate classification leading to the requirement that an application shall relate to but one of these parts of the engine, motor or pump.

It has long been the practice of the Patent Office to permit one species to be claimed in connection with generic claims which would cover more than one species, but two species may not be joined, nor may two species be joined with generic claims.

Formerly the requirement of division was treated as an objection. It is now treated as an action upon the merits and a rejection entitling the applicant to an appeal through the regular channels (*Steinmetz v. Allen*, 192 U. S. 543, 48 L. ed. 555, 24 Sup. Ct. 416).

Under the statutory provision giving the applicant a right to a re-examination, in practice the applicant may amend his application as often as it is refused or rejected by the Examiner until it is finally refused or finally rejected, whereupon the applicant's remedy is by appeal. Each amendment or necessary action by the applicant must be within one year of the preceding official action and must be responsive to the official action to have it classed as a proper amendment.

If the application be found allowable, it is "passed to issue" by the Primary Examiner and, at any time within six months thereafter, upon payment of a final fee of \$20, the patent will issue for a term of seventeen years from the date of the grant. If, however, the application be refused, that is, a "second time rejected," the applicant may appeal, upon the payment of an appeal fee of \$10, to the Examiners-in-Chief, a tribunal of three. If this tribunal reverse the Primary Examiner, it is the duty of the Primary Examiner then to prepare the case for allowance, though he may still refuse to do so and even again reject the application upon the discovery of new evidence, that is, of any new anticipatory matter, or bar, or new objections. In case of affirmance it may then be appealed, within a limit of appeal set, to the Commissioner of Patents, upon the payment of an appeal fee of \$20. If the Commissioner reverses the Examiners-in-Chief, the patent will then issue through the Primary Examiner. If, however, he affirms the rejection, an appeal may then be taken to the Court of Appeals of the District of Columbia upon certain formal proceedings duly set forth in the rules of practice and especially in the appendix thereto with reference to such appeals. If the Court of Appeals reverses the Commissioner, then the case is remanded to the Commissioner and now reaches

the Primary Examiner who will forward the application to issue; and, upon the payment at any time within six months of the final fee, the patent will be granted and printed, to run for seventeen years from the date of the patent to the patentee, his heirs or assigns.

The recording of a patent by the Patent Office is made essential by the provisions of R. S. U. S. Sec. 4883. If it could be proved that a patent had not been recorded, the patent would no doubt be held void. In the absence of such proof, however, proper record is presumed (*Luten v. Dover Const. Co.*, 489 Fed. 405).

The applicant may, after refusal of his patent by the Court of Appeals of the District of Columbia, as hitherto stated, file a bill in equity for the purpose of securing a decree as authority for the Commissioner of Patents to grant the patent (R. S. U. S. Sec. 4915).

In the consideration of an application, the Patent Office is especially careful that no new matter shall be introduced. If claims to matter which has been described or illustrated in the application but not claimed previously, be presented, a supplemental oath is required on the ground that the statute requires the applicant's oath not to what is described, but to what is claimed. All such amendments must correspond to the original model, drawings or specification, as indicated.

This rule, however, does not prevent the amendment of an application to more clearly set forth the invention.

This is well presented in *Ex Parte Snyder*, 22 O. G. 1975, 1882 C. D. 22, 24:

“The applicant will not be permitted, under the guise of an amendment, to introduce into his application a wholly different invention, nor to change the construction and operation of an invention which has been fully described and shown, nor to present a different or preferable form of his invention. He may be permitted, upon proper occasion, to supply suitable connections, to add a spring to a pawl, a handle to a crank, a belt to a pulley, teeth to a wheel, an outlet to a closed receptacle, or other manifest defects or omissions in features essential to the operation of the invention or the completeness of the disclosure, and which were caused by a clerical error of the draftsman or the unfamiliarity of the inventor with official forms. These amendments, supplemental in their nature, may be made as completing the invention imperfectly shown and described. They add to the invention disclosed some part or feature which agrees with the construction and operation already presented. An applicant can not be permitted, however, to erase the lines of his drawing and delineate anew the construction and operation of a part fully

shown and described, or replace a well described but inferior arrangement by a preferable form of his invention."

It should be observed that the inventor is not obliged to be familiar with the theory of his invention especially in technical or chemical cases, it being sufficient that he clearly sets forth the process or clearly describes the product or article (Sec. IX., "Letters-Patent, Their Construction and Scope").

In case of the citation of a patent against the claim of an applicant where the patent does not claim the invention it may be overcome as a reference by an affidavit under the provisions of Rule 75 setting up *ex parte* proof of a completion of the invention previous to the filing date of the cited patent or a previous conception of the invention followed by either an actual reduction to practice or the constructive reduction of filing the application, provided there has been reasonable diligence in such completion of the invention.

After an application is allowed, it may become forfeited at the expiration of six months unless the final fee is paid. Then any time within a period of two years the applicant or any one in interest may renew the application upon the payment of a fee as in the case of an original application, and there may be as many renewals as are necessary or desired within that period providing that none of them is filed later than two years after the date of forfeiture (*Ex parte Lambert*, 135 O. G. 1581, 1908 C. D. 187).

One of the most important functions of the Patent Office is the determination of what claims shall be allowed in view of the prior art as developed by the examination. Inasmuch as claims are treated at some length under the head "Letters-Patent, Their Construction and Their Scope," the subject will not be discussed upon here.

It will be sufficient to observe that while, on the one hand, the criticisms of claims by the Patent Office are sometimes strained and may occasionally seem to have little to do with patentable novelty, on the other hand, it is the important function of the Patent Office to, as far as possible, prevent the necessity for construction or interpretation of the claims of a patent by insisting upon a clear statement of the novel idea of means or method.

The Patent Office has, with the courts, varied through the years in its interpretation of "functional" claims, broad and narrow claims, process claims, etc. The tendency of the Patent Office at one time to unduly restrict claims using such terms as "means" and "mechanism" was halted by two striking decisions, *Ex parte Knudsen*, 72 O. G. 589, 1895 C. D. 29, and *Ex parte Halfpenny*, 73 O. G. 1135, 1895 C. D. 91.

These cases did not first announce, but did much to establish, the proper view that the sole question is whether or not a claim clearly sets forth the novel idea of means or method, and, in the latter case, the following claim was held not to be necessarily vague or indefinite, merely because of its breadth of statement:

“The combination of bobbin-feeding, bobbin-separating, and stick-filling mechanisms co-operating to feed and separate bobbins and fill bobbin-sticks therewith, substantially as and for the purpose specified.”

Various special matters relating to applications for patents are treated under appropriate headings herein.

## VI. APPEALS FROM COMMISSIONER OF PATENTS.

Sec. 9, creating the Court of Appeals of the District of Columbia (Act of February 9, 1893), provided that the determination of appeals from the decisions of the Commissioner of Patents, then vested in the general term of the Supreme Court of the District of Columbia, in pursuance of the provisions of Sec. 780, R. S. U. S., should thereafter be vested in the said Court of Appeals. The Judicial Code, Sec. 250, provides that the judgments and decrees of the Court of Appeals of the District of Columbia, shall be final in all cases arising under the patent laws, the copyright laws, etc., excepting in certain general questions of jurisdiction, constitutionality, etc., as recited in the section, which, following a general principle of the federal judiciary, may be reviewed upon appeal to the Supreme Court.

In the case of *In re Hien*, (1897), 166 U. S. 432, 41 L. ed. 1066, 17 Sup. Ct. 624, the history of appeals and procedure thereunder from the Commissioner of Patents and the relation thereto of appeals in equity, are discussed and the power of the Court of Appeals to limit the time of appeal by rules, notwithstanding the provisions of Sec. 4894 practically giving the applicant one year in which to answer an official action, was affirmed.

The appendix to the “Rules of Practice” and the rules of the court clearly set forth the special procedure in patent appeals.

The rules also include—in the appendix—instructions to appellants, with reference to the filing of the notice of appeal with an assignment of reasons of appeal to the Commissioner of Patents within forty days, inclusive of Sundays and legal holidays but including Saturday half-holidays, from the date of the decision of the Commissioner of Patents sought to be reviewed; the preparation of the transcript record by the Commissioner; the forwarding of the record to the court with the petition for appeal, and a deposit of \$15.00; the entry of an appearance of a

member of the bar; the docketing of the case; the forwarding of models, etc. It should be observed that the petition for appeal and the transcript of record are filed forty days from the time of giving the notice of appeal.

The court strictly enforces its rules for the filing of records and briefs, and upon the limitation of hearings.

## VII. DESIGNS.

The design law is based upon Sec. 4929, R. S. U. S.

By Sec. 4931 the term of patents for designs is set, as the applicant may, in his application elect, at three years and six months, or seven years, or fourteen years.

By Sec. 4933 patents for designs are made subject to the general rules of patent law.

By Chap. 105, of the Act of February 4, 1887, provision is made for a specified penalty of \$250.00 for the unauthorized use of patented designs, and that other remedies at law or in equity shall not be impaired by this provision.

The present central section of the design law, Sec. 4929, was amended May 9, 1902. Previously it provided for the patenting of any "new, useful, and original shape or configuration" of any article of manufacture. In the present law the word "useful" is omitted and the word "ornamental" is inserted, so that the law now provides that any person who has invented any new, original and ornamental design for an article of manufacture may receive a design patent therefor, under the same conditions, with reference to statutory bars, as apply in case of application for patents for inventions generally under Sec. 4886, R. S. U. S.

This amendment was in conformity with previous decisions of the courts of the United States, and, especially the case of *Rowe v. Blodgett, Etc., Co.*, (1901), 112 Fed. 61, 50 C. C. A. 120. In that case a design patent on a horse-shoe calk was held to relate to an article not intended for display and for an obscure use, and, therefore, not within the policy and meaning of the design law. In cases subsequent to the amended statute of 1902, practically identical questions have frequently arisen. For example, in *Roberts v. Bennett*, (1905), 136 Fed. 193, 69 C. C. A. 533, where the court said:

"The drawings (of plaintiff's prior mechanical patent) show a basket almost identical in shape, barring some negligible corrugations, with that shown in the design patent. If the plaintiff was entitled to any patent for the advantages claimed for such construction, they were covered by the prior mechanical patent. 'Functional utility' entitled the patentee to the mechanical patent already discussed but mere functional utility did not

entitle him to a design patent for the same article.' Christopher C. Bradley v. Richard Eccles, 126 Fed. 945, 61 C. C. A. 669; Royal Metal Mfg. Co. v. Art Metal Works, (C. C. A.) 121 Fed. 128; Id. (C. C. A.) 130 Fed. 778.

"2. There is nothing in the shape or construction of the basket of the patent in suit which 'appeals in any way to the eye, or serves to commend it to purchasers and users as a thing of beauty.' Bradley v. Eccles, supra. It is not useful as a design. The term 'useful' in relation to designs means adaptation to producing pleasant emotions. There must be 'originality and beauty; mere mechanical skill is not sufficient.' (Rowe v. Blodgett & Clapp Co., [C. C. A.] 103 Fed. 794, 873; Bevin Bros. Mfg. Co. v. Starr, [C. C. A.] 114 Fed. 362; Eaton v. Lewis, [C. C. A.] 115 Fed. 635, affirmed 127 Fed. 1018, 61 C. C. A. 562.)"

In brief, the function of the object illustrated is not important in design patents, and, where the illustration is such as to be apparently intended to emphasize the function, it may be objectionable. The essential thing is that the article or thing shall have been given a new and original appearance, which shall enhance its salable value and enlarge the demand for it, and therefore be of meritorious service to the public. See, for example, the earlier cases, Smith v. Whitman Saddle Co., 148 U. S. 674, 37 L. ed. 606, 13 Sup. Ct. 768, and Gorham Mfg. Co. v. White, 81 U. S. 511, 20 L. ed. 731, and various other cases which, in addition to those above, on one side criticise the "perversion" of the design law and on the other side sustain many design patents. In the latter class see, for example: Mygatt v. Zalinski, 138 Fed. 88; West Disinfecting Co. v. Frank, 146 Fed. 388; Ex parte Smith, 130 O. G. 1688; H. S. Earle Mfg. Co. v. Clark & Parsons Co., 154 Fed. 851; Ex parte Norton, 22 O. G. 1205, 1882 C. D. 14; Ex parte Gray, 114 O. G. 543, 1905 C. D. 21; New York Belting, etc., Co. v. New Jersey Car Spring, etc., Co., 37 U. S. 445, 34 L. ed. 741, 11 Sup. Ct. 193.

It has been held that, as one may not take out two patents for the same invention, it is immaterial that one is for a design and the other for a mechanical device, where the two are indistinguishable in their characteristics and are manifestly the outcome of one and the same inventive idea, and that it is also immaterial that the design patent because for a mechanical structure is invalid. (Williams Calk Co. v. Neverslip Mfg. Co., 136 Fed. 210, citing Cary Mfg. Co. v. Neal. 90 Fed. 725, and distinguishing Collander v. Griffith, 2 Fed. 206.

### VIII. INTERFERENCES—ORIGIN AND PROCEDURE IN PATENT OFFICE.

Under the laws of the United States a patent may be granted to the original or first inventor only. The Revised Statutes provide for a determination of the question of priority of invention by the Primary Examiner (Examiner of Interferences) whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application or with any unexpired patent, and that the Commissioner may issue a patent to the party who is adjudged to be the prior inventor (R. S. U. S., Sec. 4904).

The statutes also provide for the method of taking testimony, summoning witnesses, etc. (R. S. U. S., Secs. 4905, 4906, 4907, 4908 and, as an incident, the concluding clause of 4913).

Secs. 4909, 4910, 4911 and the other general appellate sections elsewhere cited provide for an appeal in inter partes or interference cases through the same channel as in ex parte cases.

The Rules of Practice set forth an elaborate procedure in interference causes in the United States Patent Office.

Rule 93 defines an interference as a proceeding instituted for the purpose of determining the question of priority of invention between two or more parties claiming substantially the same patentable invention.

As has been indicated, the fact that one of the parties has obtained a patent will not prevent an interference. Though the Commissioner has no power to cancel a patent, he may grant it for the same invention to one who proves to be the prior inventor.

When the Primary Examiner finds two or more applications or an application and a patent claiming substantially the same patentable invention, he forwards a statement to that effect to the "examiner in charge of interferences"—that is, the Examiner of Interferences—who then, if the papers appear to be in good form, forwards to the parties in interest, i. e., applicants, patentees, and assignees, copies of the declaration of the interference, setting times for each party to file a preliminary statement.

The preliminary statement is important as forming the basis of facts and dates in the interference proceeding. It is a sworn statement required of each party, before inspecting the application of any other applicant, of the date of the original conception of the invention, the date upon which a drawing of the invention was made, the date when the invention was first disclosed to others, the date of reduction to practice, and the extent of use of the invention.



When the invention is made abroad it is required that the statement set forth: That the applicant made the invention involved in the issue in interference; whether or not the invention was ever patented and if so when and where, giving the date and number of each patent, the date of publication and the date of sealing thereof; whether or not the invention was ever described in a printed publication and if so when and where, giving the title, place and date of such publication; and when the invention was introduced into this country, giving the circumstances with the dates connected therewith, which are relied upon to establish the fact.

While there are provisions for amending preliminary statements, the general rule is that each party will be confined to the dates and allegations which he sets up in his preliminary statement: That is, he may not avail himself of any proof of a conception or a disclosure or a reduction to practice, for example, back of the date which he has given in his preliminary statement.

Before testimony is taken in the case it is open to motions to dissolve, motions to amend, motions to shift burden of proof, etc., following an opportunity for each party to inspect all the cases after the preliminary statements have been approved by the Examiner of Interferences.

The questions which arise on motions to dissolve are based upon the assertion by one or more of the parties that the claim in issue is not patentable, or that one of the parties has no right to make the claim, that the counts of the issue have different meanings in the cases of different parties, or that there has been such informality in the declaration of interference as would preclude a proper determination of the question of priority.

In the former practice the inclusive term "interference in fact" was used to designate questions of the right of a party to make the claim or different meanings in the claims as applied to different applications. This phrase was omitted from the later rules because of the fact that it was inclusive of both motions appealable directly to the Commissioner and motions appealable first to the Examiners-in-Chief.

The line in appeals on motions, it may be observed here, is the same as in the case of other appeals. That is, all matters relating to patentability or the merits of the interference pass from the Primary Examiner through the regular line of appeals; those relating to form or procedure go directly from the Examiner of Interferences to the Commissioner.

The fact that an interference contest is closely related to the administration of the Patent Office and the granting of patents leads also to additional incidents, as, for example, the suggestion

of a statutory bar by the Examiner of Interference or the Examiners-in-Chief to the Commissioner; the suspension of an interference for the consideration of new references which might show the invention of the issue of a party to be unpatentable, and therefore lead to a dissolution of the interference; the addition of new parties; the prosecution or defense of an interference by an assignee, etc.

The rules of practice also provide for filing a divisional application so that some part of an application which is not involved in the interference or which will not be affected by the determination of the interference may proceed in a separate application. They provide also for avoiding an interference by disclaiming the invention in issue and for a judgment by default. Provision is also made for permitting an amendment to include matters which are shown but not claimed and which are still a necessary incident notwithstanding the fact that the Primary Examiner, as a precedent to an interference, suggests the claims of one applicant to another where, in his opinion, they may be made and be the basis of an interference.

Rule 130 (July 31, 1906) provides that:

“Where the patentability of a claim to an opponent is material to the right of a party to a patent, said party may urge the nonpatentability of the claim to his opponent at final hearing before the Examiner of Interferences as a basis for the decision upon priority of invention, and upon appeals from such decision. A party shall not be entitled to take such step, however, unless he has duly presented and prosecuted a motion under Rule 122 for dissolution upon the ground in question, or shows good reason why such a motion was not presented and prosecuted.”

Under this rule, questions ancillary to that of priority and involving the right of a party to a patent may not only be brought up by motions to dissolve, but may also be presented at final hearing and may often be made the subject of testimony in a case.

It was for years the practice of the Patent Office to formulate the issue between parties claiming substantially the same patentable invention whether their claims were in substantially the same terms or not. Since the case of *Hammond v. Hart*, 83 O. G. 743, 1898 C. D. 52, however, it has been the rule of interferences in the Patent Office that generic and specific claims do not interfere and that, to provide for a declaration of interference, the several parties must make substantially the same claims in substantially the same language.

Claims are, therefore, suggested by the Primary Examiner, sometimes of one party to others, sometimes of each of the parties to all of the others. One who does not make the suggested

claims within a specified time is held to have abandoned his rights to the subject-matter of the claims.

This plan, while having the advantage of defining the issue in terms common to each party, has the disadvantage of not having the issue drawn in the light of a comparison of the several applications. This disadvantage, however, has a corrective in the provision of Rule 109, permitting amendments and a consequent reformation of the issue, upon motion, after the applications have been open for inspection.

Parties to an interference are presumed to have made the invention in the chronological order in which they filed their completed applications for patents: That is, the burden of proof is upon him latest in filing his application.

If one party have a patent granted before the filing date of the other party then the applicant must prove his case beyond a reasonable doubt. A preponderance of evidence is sufficient as between two or more applicants in ordinary cases, or where the application of the junior party was co-pending with the application which eventuated in a patent to his opponent.

In taking testimony the procedure is substantially that which obtained under the Equity Rules (67th rule) prior to the adoption of the rules promulgated by the Supreme Court on November 4, 1912.

It is the general rule of evidence in patent causes (with indications of probable qualification) that the unsupported statement of a party will not be accepted as sufficient proof of conception of an invention or of its reduction to practice (*Petrie v. De Schwienitz*, 19 App. Cas. D. C. 386, 99 O. G. 1387, 1902 C. D. 534).

The decision in interference proceedings is not conclusive of the question of priority of invention. The same question may arise in separate suits instituted in the courts under Secs. 4915, 4918 and 4920 of the Revised Statutes.

Upon an adverse decision of the Court of Appeals of the District of Columbia in an interference case (as well as in case of an application for a patent), the defeated applicant may file a bill in equity in the district of which the defendant is an inhabitant, or where he may be found. This proceeding is an original one and, therefore, new evidence may be presented. The court may not, however, enjoin the Commissioner from issuing a patent to the previously successful party pending such a suit, but the judgment of the court that the complainant is entitled to a patent will authorize the Commissioner to issue another patent for the same invention.

**Priority—General Rules.**—In determining priority of invention in an interference, the principal rule which has ob-

tained since the expression of the law in *Reed v. Cutter*, 1 Story. 590, is that the inventor who first reduces his invention to practice is entitled to an award of priority with the single exception that the inventor who first conceived the invention may be held the prior inventor where he has exercised reasonable diligence in reducing the invention to practice.

The reduction to practice may be either actual, as evidenced by the construction of a complete and operative (or successfully operated) device, or constructive, as evidenced by the filing of an allowable application clearly showing and describing the complete invention.

Sec. 4920 R. S. U. S. which sets forth the defenses in actions for infringement, contains a clause which is the basis of one phase of interference practice. In the second clause the statute says that it shall be a defense if one has "surreptitiously or unjustly obtained the patent for that which was in fact invented by another, who was using reasonable diligence in adapting and perfecting the same." By this provision, priority of invention may be a defense in an infringement suit and, by analogy, in an interference cause an earlier conception connected with a later reduction to practice by reasonable diligence may lead to an award of priority over him who first reduced to practice.

**Conception and Disclosure.**—Conception is evidenced when an inventor first conceives, not the desired object to be attained, but the idea of constructing a device or a mode of practicing a process, or bringing together an assemblage of parts necessary to constitute an operative machine or article, or, in other words, first conceives the idea of means or method substantially in the manner in which he finally embodies his ideas and discloses the same in an intelligent manner either orally or by means of drawings, models, sketches or descriptions.

One who first reduces an invention to practice is then, *prima facie* the first inventor. But it has been seen that one may date his patentable invention back to the time of his conception and disclosure, providing he connects the conception and disclosure with the reduction to practice of the same invention by proof of reasonable diligence, so that they are substantially one continuous act.

Where drawings are relied upon as evidence of conception of the invention they are required to show a complete conception free from ambiguity or doubt, and such as would enable those skilled in the art to reduce the conception to practice without any further exercise of the inventive faculties (*Mergenthaler v. Scudder*, 11 App. Cas. D. C. 264, 81 O. G. 1417, 1897 C. D. 24; *McKnight v. Pohle & Croasdale*, 22 App. Cas. D. C. 219, 105 O. G. 977, 1903 C. D. 619).

**Reduction to Practice.**—“Reduction to practice” is not a statutory phrase. It is a phrase coined by the tribunals to indicate what may be proof of completion of the invention. It means that the invention must have been reduced to that form and condition in which it is capable of being put to some useful purpose and that, in most cases, it must have been actually tested to determine its capacity to perform the work intended. The classes of reduction to practice have been set forth in *Sydeman v. Thoma*, 32 App. Cas. D. C. 362, 141 O. G. 866, 1909 C. D. 340, as follows:

“Decisions involving this often-litigated question of actual reduction to practice may be divided into three general classes. The first class includes devices so simple and of such obvious efficacy that the complete construction of one of a size and form intended for and capable of practical use, is held sufficient without test in actual use. (*Mason v. Hepburn*, 13 App. D. C. 86, 89; *Lindemeyer v. Hoffman*, 18 App. D. C. 1, 5; *Loomis v. Hauser*, 19 App. D. C. 401, 404; *Couch v. Barnett*, 23 App. D. C. 446, 449; *Rolfe v. Hoffman*, 26 App. D. C. 336, 342.) The second class consists of those where a machine, embodying every essential element of the invention, having been tested and its practical utility for the intended purpose demonstrated to reasonable satisfaction, has been held to have been reduced to practice notwithstanding it may not be a mechanically-perfect machine. In other words, it is sufficient reduction to practice although a more desirable commercial result may be attained by some simple and obvious mechanical improvement, or by substituting another well-known material for the one used in the original construction, as for example, metal for wood, cast metal for sheet metal, and the like. (*Coffee v. Guerant*, 3 App. D. C. 497, 499; *Norden v. Spaulding*, 24 App. D. C. 286, 290; *Smith v. Brooks*, 24 App. D. C. 75, 80; *Andrews v. Nilson*, 27 App. D. C. 451, 457; *Lowrie v. Taylor*, 27 App. D. C. 522, 526; *Burson v. Vogel*, 29 App. D. C. 388, 394; *Howard v. Bowes*, 31 App. D. C. 619, 622.) The third class includes those where the machine is of such a character that the particular use for which it is intended must be given special consideration and requires satisfactory operation in the actual execution of the object. (*McDonald v. Edison*, 21 App. D. C. 527, 529; *McKenzie v. Cummings*, 24 App. D. C. 462, 467; *Gallagher v. Hien*, 25 App. D. C. 77, 82; *Ocuppaugh v. Norton*, 25 App. D. C. 90, 94; *Sherwood v. Drewson*, 29 App. D. C. 161, 173.)

“In cases falling within the second and third classes described long delay in putting the machine in actual use for the intended purpose, has always been regarded as a potent circumstance in

determining whether the test was successful or only an abandoned experiment.”

It is settled that a drawing of even the simplest machine or device, perfect in every detail and plainly demonstrating the principle, efficacy, and practical utility of the invention will not constitute reduction to practice; nor will a model. They are but evidence of conception (except when part of an application on file) requiring subsequent actual reduction to practice which in some cases, as will be seen, must be connected thereto by reasonable diligence. (*Porter v. Loudon*, 7 App. D. C. 64, 74, 73 O. G. 1551.)

The mere discovery, then, of an improvement may not constitute the subject-matter of a valid patent. It is the practical application of the idea of means or method. On the other hand, as clearly established in the Telephone Cases, 126 U. S. 535, 31 L. ed. 863, 8 Sup. Ct. 783-788, the law does not require that a discoverer or inventor, in order to receive a patent for a process or machine, must have succeeded in bringing his art to the highest degree of perfection. It is enough that there is a clear description such as to enable those skilled in the matter to understand what the process or machine is and how it may be practiced or made. It has followed from these principles that an invention to be patentable must have reached the stage where it has been reduced to practice or is capable of reduction to practice, or may be the subject of a complete and allowable application. In brief, nothing short of a complete invention can be the basis of a right to a patent. It is, therefore, a rule of interferences and of patent law generally that unsuccessful experiments or abandoned experiments do not constitute anticipatory knowledge or use. (*Automatic Weighing Machine Co. v. Pneumatic Scale Co.*, [1909] 166 Fed. 288, 92 C. C. A. 206.)

Long delay in practicing an invention claimed to have been reduced to practice or in applying for a patent has always been regarded as potent circumstances tending to show that the alleged reduction to practice was nothing more than an unsuccessful or an abandoned experiment, and it is required that he who was first to conceive must have been exercising diligence when his rival entered the field. (*Paul v. Hess*, 24 App. Cas. D. C. 462, 115 O. G. 251, 1905 C. D. 610.)

The same rules apply, of course, to process cases. In these cases, as elsewhere, a constructive reduction to practice by the filing of an allowable application is made the equivalent of an actual reduction to practice. (*Croskey v. Atterbury*, 9 App. Cas. D. C. 207, 76 O. G. 163, 1896 C. D. 437; *Stevens v. Seher*, 11 App. Cas. D. C. 245, 82 O. G. 1932, 1897 C. D. 761; *Rosell v. Allen*, 16 App. Cas. D. C. 559, 92 O. G. 1936, 1900 C. D. 333.)

**Diligence.**—In the consideration of diligence it is obvious that a complicated invention requiring many experiments and much study to give it practical form will reasonably delay the reduction to practice after the first conception for a greater length of time than where the idea and the machine embodying it are of simple character. The sickness of the inventor, his poverty and his engagement with other contributory inventions are all circumstances which may affect the question of reasonable diligence. (*Christie v. Seybold*, (1893) 55 Fed. 69, 5 C. C. A. 33.)

It has been repeatedly held that the question of due diligence must be determined in each case by its own circumstances. The delay that is proper in one case or a course that is due diligence in another case can not, in the absence of any statutory requirement of time, be measured by any arbitrary standard. (*Griffin v. Swenson*, 15 App. Cas. D. C. 135, 89 O. G. 919, 1899 C. D. 440.)

**Originality—Ancillary and Enuring Inventions—Employer and Employee.** In many interference causes the parties are strangers and even widely separated. Each has made an invention independently of the other and in many cases have no knowledge of each other or of each other's invention until the interference is declared. In other cases, however, the evidence upon which the parties rely is interlaced. They may bear the relation of employer and employee; they may both be workmen in the same factory or partners in the same enterprise, etc. It may be that the same reduction to practice is claimed by both and in such cases, ordinarily, each claims the derivation of the idea of invention from him by the other. A case may present a situation where it is impossible that both can be testifying truthfully; or may present a case of honest difference, as where, for example, there has been a suggestion made by one to be followed by counter-suggestions and a subsequent reduction which each regards as in his own interest.

The broad rule is that the original inventor is he with whom originated the idea embodied in the invention. If he merely constructs or adapts or reduces to practice the idea of another he is not an original inventor.

In *Agawam Co. v. Jordan*, (1869) 77 U. S. 583, 19 L. ed. 177, it was held that, where an employer had conceived the plan of the invention and was engaged in experiments to demonstrate it, no suggestion from the employee not amounting to a new method or arrangement, that is, not amounting to a complete invention, was sufficient to deprive the employer of the exclusive property in the perfected improvement.

In this case, the court said that if an employee "make valuable discoveries ancillary to the plan of the preconceived design

of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original improved principle, and may be embodied in his patent as part of his invention."

The principle of ancillary or enuring inventions thus merging in the original invention, has been illustrated in various decisions of the Court of Appeals of the District of Columbia as, for example, *Gedge v. Cromwell*, 19 App. D. C. 192, 98 O. G. 1486, 1902 C. D. 514; *Gallagher v. Hastings*, 21 App. D. C. 88, 103 O. G. 1165, 1903 C. D. 1531, and *Milton v. Kingsley*, 7 App. D. C. 531, 75 O. G. 2193, 1896 C. D. 420. These cases are reviewed in the extreme case of *Jackson v. Summerfield*, 112 O. G. 1212, 1904 C. D. 403 in which were separate claims for a distinct or ancillary invention. The Commissioner held that these claims and the additional invention went with the principal invention because of the terms of the contract between the parties and the co-relation of the ideas.

It is apparent that a separate and distinct invention would not come under this heading in the absence of a clear contract and a clear proof of the original of the main idea. The cases in the opposite class to those above cited are set forth hereinafter under the heading "Licenses, Contracts, and Restrictions." It should be observed that there appears a tendency to lean strongly toward recognizing the accretion of ancillary or enuring inventions to the principal invention when the applications are in interference, while there is some reluctance on the part of the courts to take away from a patentee an improvement which he may have separately patented.

**Estoppel—Concealment—Res Adjudicata.**—An interesting application of a phase of abandonment known as "concealment" has been a feature of interference practice since the decision in *Mason v. Hepburn*, 13 App. D. C. 86, 84 O. G. 147, based, however, upon broad judicial dictum and upon the policy of the patent law by the Supreme Court. In that case, the court announced the principle that, even if an inventor had conceived an invention and actually reduced it to a practice, his right to a patent would be barred by a designed or negligent concealment of the invention from the public and the subsequent entry of another into the apparently unoccupied field.

This doctrine was said by the same court to be applicable to renewal applications. It had been supposed for years that an applicant might "renew" his application at any time within two years—the term given by the statute—but in *Cain v. Park*, 14 App. D. C. 42, 86 O. G. 797, the Court plainly indicated that one might not renew under any and all circumstances without any reference to a new and independent inventor in the same



field. This principle was specifically suggested in other decisions and was emphasized by a strong opinion in the case of *Barber v. Wood* by the Examiners-in-Chief April 20, 1911, in deciding against the prior applicant who had delayed his renewal in the face of a patent granted to a later inventor who had also, in the meantime, advertised and marketed the invention.

The basis of this ruling was found in the provision of the statute, R. S. U. S., Sec. 4897, which concludes as follows:

“And upon the hearing of renewed applications preferred under this section, abandonment shall be considered as a question of fact.”

The cases which have sustained this view of estoppel by concealment rest upon the policy of the patent laws to reward him who discloses his ideas of invention; and it has ordinarily appeared that the interference arose because the party, thus attempting to utilize the invention he had concealed, had been spurred to activity by his rival's patent or occupation of the market. The principle of estoppel thus applied has, as indicated, a direct foundation also in the statutory bar of “abandonment” as set forth herein under the heading “Patentability—Abandonment.”

It has been frequently held by the Court of Appeals that the doctrine of *res adjudicata* necessarily applies in favor of the successful party to an interference to whom an award of priority has been made, against his opponent's attempt to renew the interference upon the same application or a new application with the claims for the same invention thereof in different or broader form. (*Gold v. Gold*, 34 App. D. C. 229, 150 O. G. 570, 1901 C. D. 269, citing *Blackford v. Wilder*, 28 App. D. C. 531; *Horine v. Wende*, 29 App. D. C. 415; *Carrol v. Hallwood*, 31 App. D. C. 165.)

The Court of Appeals had previously held in *U. S. ex rel. Newcomb Motor Company v. Moore*, 30 App. D. C. 464, that, where an interference has been dissolved without appeal from the decision, the right to make the claim must be considered *res adjudicata* in a later interference between the same parties on the same application. In *Gold v. Gold*, *supra*, the court held, however, that, where no appeal had been taken from the decision of the Primary Examiner dissolving the interference on the ground that the claims in issue are not patentable, and a second interference was declared involving claims not essentially different from those involved in the former interference, the question of patentability was not concluded by the decision in the prior interference.

**Appellate Jurisdiction of Court of Appeals, D. C.**—There has been a great deal of discussion of the relations between

the Court of Appeals and the Patent Office. It has been held by the Court that appeal from the decisions of the Commissioner of Patents is limited to two classes of cases: (1) where the claims of the application for patent or a reissue of a patent, after having been twice rejected, have been finally rejected on appeal to the Commissioner in due course of procedure; (2) where, on appeal to the Commissioner in interference proceedings, there has been a final decision on priority in favor of one of the parties thereto.

The court, therefore, declined to review the decision of the Commissioner of Patents granting a motion to dissolve the interference, (*In re Fullagar*, 32 App. D. C. 222, 138 O. G. 259, 1909 C. D. 270); and this appears to be the prevailing rule notwithstanding an apparent contradiction.

The court has also held that the question of the patentability of the issue of an interference is not a jurisdictional one, and that the court will not, therefore, review the action of the Patent Office holding the issue patentable, but will confine its consideration to the question of priority; or, as substantially reaffirmed, that it is the settled doctrine of the Court of Appeals that the allowance of a claim in the Patent Office is conclusive of the question of patentability in an interference proceeding, because the appellate jurisdiction in respect to patentability is limited to cases where claims have been rejected on that ground. However, the court also held that the question of the right of one of the parties to make the claim was not concluded by the decision of the original motion to dissolve the interference on that ground, but that in conformity with its previous holdings beginning with *Podelsak & Podelsak v. McInnerney*, 26 App. D. C. 399, 120 O. G. 2127, 1906 C. D. 558, the question of the right of one of the parties to make the claim under the disclosures of his application will be entertained as ancillary to the question of priority. (*Gold v. Gold*, 34 App. D. C. 229, 150 O. G. 570, 1901 C. D. 269.)

**Effect of Decisions in Interferences in Patent Office.**—The Supreme Court of the United States has laid down the rule that, where the question decided in the Patent Office (or by analogy in Court of Appeals of District of Columbia) is one between contesting parties as to priority of invention, the decision there made must be accepted as controlling upon that question of fact in any subsequent suit between the same parties, unless the contrary is established by testimony which in character and amount carries thorough conviction. (*Morgan v. Daniels*, [1894] 153 U. S. 120, 38 L. ed. 657, 14 Sup. Ct. 772.)

**Interfering Patents.**—In cases under Sec. 4918 of the Revised Statutes relating to suits in equity to have an interfering patent declared invalid in whole or in part, the first question to be deter-

mined is whether the patents involved are interfering patents, and it must appear that the claims of the respective patents, or some of them, cover the same patentable invention. The claims of a patent may be construed to determine the question of interference and it may happen that the structure described in one patent will infringe the claims of another patent though the patents are not interfering within the meaning of the statute. (*Simplex Railway Appliance Co. v. Wands*, 115 Fed. 517, 53 C. C. A. 171.)

In that case it was said that, "if the Wands' headblock, in view of the state of the art and the functions which it performs be regarded as the mechanical equivalent of Bower's strengthening piece, the two claims now under consideration cover substantially the same combination and hence interfere." This is in line with the practice of the Patent Office prior to *Hammond v. Hart*, supra.

That the question of patentability may arise always in some form in interferences and under Sec. 4915, as well as elsewhere, is evidenced by the decision of the Supreme Court in *Hill v. Wooster*, 132 U. S. 693, 33 L. ed. 502, 10 Sup. Ct. 228.

## IX. LETTERS PATENT AND THEIR CONSTRUCTION AND SCOPE.

Letters-patent of the United States run to the inventor or patentee, his heirs or assigns, for a term of seventeen years from the date of the grant. Upon the face of the patent the grant is of the exclusive right to make, use and sell the invention throughout the United States and the territories thereof.

It is apparent, however, that anyone has at common law the right to make, use and sell his invention, so that, though the grant runs in those words, it means, as has been said by the Supreme Court of the United States, the right to exclude others from making, using and selling the invention.

For many years under section 4887 of the Revised Statutes, a United States patent was limited to expire with the preceding foreign patent for the same invention by the same inventor having the shortest term. This provision of the statutes was repealed as of January 1, 1898. Under the new section, R. S. U. S. Sec. 4887, a foreign patent for the same invention by the same inventor or for him does not affect the term of the United States patent, but if a foreign patent be granted on an application filed more than twelve months before the filing of the application in the United States then no patent will be granted in this country, or if granted will be invalid.

The statute in its old form was a source of extensive litigation, the cases being reviewed and discussed, for example, in

Welsbach v. Apollo, 96 Fed. 332, 37 C. C. A. 508; Sawyer v. Carpenter, 143 Fed. 976, 75 C. C. A. 162. These cases rest principally upon Bate v. Hammond, 129 U. S. 151, 32 L. ed 645; Pohl v. Anchor, 134 U. S. 381, 33 L. ed. 953; Commercial v. Fairbank, 135 U. S. 176, 34 L. ed. 88; Huber v. Nelson, 148 U. S. 270, 37 L. ed. 477; Bate v. Sulzberger, 157 U. S. 1, 39 L. ed. 601; and are supplemented by Leeds & Catlin Co. v. Victor Co., 213 U. S. 301, 325, 53 L. ed. 805. The cases were to the effect that the United States patent was limited by law, whether so expressed in the patent or not, to expire with the foreign patent having the shortest term, that is, with the foreign patent previously granted without reference to any lapsing or forfeiture or any variation of the term of the foreign patent from any condition subsequent, according to the foreign statute; and that a United States patent granted after the expiration of the foreign patent is void. See, for a summary, Cameron Septic Tank Co. v. City of Knoxville (1913), 227 U. S. 39, 57 L. ed. —.

This case, also reviewing a number of other cases of the federal courts, held that the treaties relating to the International Convention are not self-executing and require an act of Congress to make them effective, and therefore that patents granted upon applications filed prior to January 1, 1898 are limited by a corresponding foreign patent under the provisions of the previous statute.

\* \* \*

Many "rules" of construction are found in the books and cases, but few have the character of rules of law. In the consideration of patents the circumstances of each case are of the first importance and the exceptions to many of the apparent rules are such as to qualify their usefulness as "fixed" guides. This does not mean that there are not principles of construction, but that they require peculiar care in their application to a branch of the law where the basis of the property right is in ideas of invention.

Though a patent is granted by the United States Patent Office as the result of an examination and is *prima facie* valid, that is, presumed to have been regularly issued for a patentable invention, it is subject in any suit to a re-examination and to construction and interpretation in the light of the prior art, and in view of self-imposed limitations or practical admissions of word or deed in the prosecution of the application.

The prior art at all stages of a cause is open to the court and, in the consideration of whether or not invention be involved, the court may also take judicial notice of matters of common knowledge even when they are not pleaded.

The patent may be found invalid because of some statutory

bar which, if duly presented, should have prevented the grant of the patent; or it may be limited, or, in effect, even broadened, by an interpretation, *inter alia* or in the light of the prior art, where interpretation is permissible.

It is a circumstance to be considered, however, that in attempting to broaden claims by construction the patentee lays himself open to the danger of having his claims anticipated by a similar reading of the prior art.

It is a general rule of patent law that matter which is described but not claimed is presumed to have been dedicated to the public.

As hitherto set forth, there are methods of rebutting this presumption. The patentee may do so by way of reissue or separate application; another, under proper conditions, by proving he made the invention before the date of the application for the patent upon which his claim is refused.

It is clear that the claim can not present a subject-matter different from that presented in the specification; and claims of patents have been held invalid because reciting features having no supporting statement of their function in the specification; and because "new matter" not found in the application as filed.

The effect of acquiescence in the rejection of claims by the Patent Office is that of an admission, operating, ordinarily, to forbid the suggestion of any interpretation of the claim of the patent which would give it the meaning of the rejected and cancelled claim.

The inventor and patentee are entitled to all the uses and advantages which naturally flow from the invention, and it is not necessary that they should all be perceived by the inventor or described in the patent. In fact, it is a present day practice to advance in the specifications of highly technical patents the supposed scientific principles, as suggestions or theories of the inventor.

When the terms of the patent are clear and when the claims are definite, there can be no interpretation, ordinarily, because nothing can be added to or taken away from the clear meaning of the claims of a patent. The claims may not be altered in meaning by construction or interpretation, but they may be explained so that the claim shall be read to cover the real invention which, in the light of the specification and drawings and the prior art and other circumstances, it may appear the applicant intended his claim to state.

In other words, in considering a patent, the specification and claims are read together and if there be any ambiguity in the claim it may be cleared by the import of the specification. The specification may delimit the claim or support a broader inter-

pretation. It may be stated, however, as a general rule, that elements may not be added to or taken from a claim, and this is especially true of combination claims.

Broadly, it may be said that while a patent is subject to rigorous examination it receives as a rule a "liberal" construction, the courts, where it is possible, being inclined to apply the principle of the maxim, "Ut res magis valeat quam pereat" (that the thing may prevail, rather than be destroyed). This does not, however, mean a complaisant construction which passes over a clearly limited claim and substitutes for it a broader or different claim which might have been made.

The attitude of the courts is well presented in *Keystone Mfg. Co. v. Adams*, 151 U. S. 137, 144, 38 L. ed. 103, 104, where the court said:

"But when in a class of machines so widely used as those in question it is made to appear that at last, after repeated and futile attempts, a machine has been contrived which accomplishes the result desired, and when the Patent Office has granted a patent to the successful inventor, the court should not be ready to adopt a narrow or astute construction, fatal to the grant."

In the consideration of patents it is a broad principle that the inventor in taking out a patent under the statutes of the United States subtracts nothing from his actual invention and adds nothing to it. It is also a principle that the patent is not a grant of something already owned by the government. It is an exchange of a limited monopoly to the inventor to exclude others from making, using or selling the invention in consideration of a disclosure of the invention. These principles have had much to do with the tendency toward a liberal construction of many patents because the viewpoint has been that the inventor, unless he has absolutely limited himself, should not have his contract restricted by any astute or technical reading of his claim. The idea is that the claims should be construed, if possible, to sustain the patentee's right to all that he has invented, but that the construction should not be carried to the point of interpolating anything which the claim does not contain in terms or meaning, and in no case to give to the patentee something rightly belonging to the public.

Inasmuch as the construction and interpretation of patents turn principally upon the claims, as does the examination in the Patent Office, it will be logical to consider the subject-matter under the head of "Claims" including in that consideration occasional illustrations of the application of statutory bars and, broadly, of the doctrine, or as it might better be termed, doctrines, of equivalents, and, where the discussion seems to re-

quire it, repeating some of the governing principles of construction.

Various incidents such, for example, as interfering patents, the estoppel existing between patentee and assignee or a licensee, joinder of inventions in a patent, double patenting, dedication to the public, and the whole range of the determination of invention and patentable novelty are discussed under other appropriate headings.

### CLAIMS.

The claim, in a sense, is the patent, for it is the measure of the patentee's right to exclude others from making, using or selling the invention.

The claim has been a statutory requisite since 1836, and the requirement has been, as it is now under R. S. U. S. Sec. 4886, that the inventor "shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery."

There are many "rules" governing the framing and the interpretation of claims, but a careful study of the cases will show that the one essential thing is that the novel invention shall be clearly expressed.

The purpose of the claim is to define just what is the thing of which the patentee claims to be the inventor and just what he is granted the right to exclude others from making, using or selling during the life of the patent. It is the purpose of the specification as a whole to enable the public or that part of the public "skilled in the art" to practice the invention described, after the expiration of the patent.

In the early days of the patent system of the United States the specification and the claim were in effect one. That is, the new invention was ascertained by consideration of the whole specification including any "claim" advanced by the patentee. Under the present system the claim itself must particularly point out the invention, and when the claim is clear nothing in the specification or drawings of the patent can be used to alter the meaning of the claim. It is only when the claim does not properly define the invention in clear terms or some apparently limiting term is merely relative or unessential that the specification may be resorted to for the purpose of interpreting the claims, sometimes to limit the claim to the exact thing described, sometimes to show that a broader meaning is intended where a narrower meaning might be inferred.

Each separate or distinct part and combination is required

to be covered by separate and distinct claims, and each claim is, in effect, an independent patent.

The importance of covering the whole invention by claims is evidenced from what has been hitherto stated, that the patentee is presumed to have dedicated to the public matter not claimed.

While the patentee need not define in his claims all the connections and relations of parts, nor, in fact, all of his invention, he must define a practically operative means; not that he must define a whole process or a whole machine in any given claim, but that he must define either such a whole process or whole machine or article, or some distinct and separable element or some distinct and separate combination of elements.

It has hitherto been shown under "Patentability," that the claim may not be for a principle but must be for a concrete invention, for some mode or means of seizing upon a principle.

There are many claims sustained by the courts, especially in broad and pioneer patents, in which what appears to be a principle is covered. But in these cases it is not the natural principle, not the physical law, that is covered, but some idea of mode or means of applying such a principle or law in some art.

It has been often said that, "claims should indicate the class of inventions," that is, whether the invention is an art, machine, manufacture or composition of matter. But this is not an accepted rule in its strict terms, for a claim must, of course, be clear and definite, and it will then be apparent on its face whether the invention is a process, machine or article, whether those terms be used or not.

Claims must correspond with the description; they must not cover a mere result or function; must not be alternative, that is, covering two different forms in one claim, and must not be multiplied so as to define the same invention by a series of claims which all mean the same thing. This latter rule is, however, much stretched in actual practice where in many cases claims differ by a single word or phrase and sometimes by mere shades of expression.

Claims of an application or patent may bear proportional relations, as genus and species, combination, subcombination, element, process and subprocess.

A genus claim states in broad terms the essential characteristics common to all of a family or group, while a species claim is one of the many illustrations of the genus, and defines the peculiar characteristics that distinguish it from others of its kind.

A combination claim covers the novel assemblage of parts that constitute a new machine or article of manufacture. Its breadth is governed by the prior state of the art. It may state the essential parts that characterize the new instrument, and may be ac-



accompanied by claims for subcombinations and the elements that form the combinations.

A process claim defines the steps or series of acts of a new art, and may be accompanied by subprocess claims.

There are distinctions between species and subcombination and subprocess claims. A species claim covers the whole, defining it by limitations of peculiar characteristics. A subcombination or subprocess does not define the whole, but a part only. Generic and specific claims are, in that relation, broad and narrow statements of the same invention. Subcombinations and subprocesses may cover the parts, the modifications, in fact, may be, distinct inventions.

A genus claim, however, should not define a principle merely, but should be the broadest statement of the method or means of seizing the principle and putting it into service, and such a claim will cover all subsequent species. The present practice of the Patent Office permits but one species, that is, one invention, to be claimed in an application, but it may accompany a genus claim, which is a broad claim for the same invention.

As has been heretofore stated, in the early days of the patent system of the United States the specification and the claim were not so clearly separated. They were, in fact, one, and a claim was frequently stated in terms of description such as are now more appropriate in the purely descriptive part of the specification. It is to be observed, however, that it was these early rules of constructions which have carried into our present practice the principle that if the meaning of a claim be in doubt it may be interpreted by the specification, especially where it is necessary to do so "to save the patent." Even so late (1870) as *Seymour v Osborne*, 78 U. S., 516, 20 L. ed. 33, the court indicated how closely related are the two purposes of the claim and specification, namely to define the invention and to describe the invention. The court said:

"Such combination is sufficiently described if the ingredients of which it is composed are named, their mode of operation given, and the new and useful result to be accomplished pointed out, so that those skilled in the art, and the public, may know the extent and nature of the claim, and what the parts are which co-operate to produce the described new and useful result."

The so-called "liberal" attitude of the courts toward invention, that is, the general endeavor of the courts to interpret the patent law in the spirit of the constitution, is illustrated for example, in the early case of *Ryan v. Goodwin*, 3 Sumner (U. S.) 514, 519, Fed. Cas. 12,186, a case decided by Mr. Justice Story and referred to at length by Curtis on Patents Sec. 234.

The defendants had asserted that the specification and claims were vague, ambiguous and uncertain. It was held that:

"If, taking the whole together, the court can perceive the exact nature and extent of the claim made by the inventor, it is bound to adopt that interpretation, and to give it full effect."

The court continuing said:

"I confess that I do not perceive any ground for real doubt in the present specification. The inventor claims as his invention the combination of phosphorus with chalk or any other absorbent earth or earthy material, and glue, or any other glutinous substance; in making matches, using the ingredients in the proportions substantially as set forth in the specification.

\* \* \* I do not know of any principle of law which declares, that, if a man makes a new compound, wholly unknown before for a useful and valuable purpose, he is limited to the use of the same precise ingredients in making that compound; and that, if the same purpose can be accomplished by him by the substitution in part of other ingredients in the composition, he is not at liberty to extend his patent so as to embrace them also. It is true that, in such a case, he runs the risk of having his patent avoided, if either of the combinations, the original or the substituted, have been known or used before in the like combination. But, if all the various combinations are equally new, I do not perceive how his claim can be said to be too broad. It is not more broad than his invention. There is no proof, in the present case, that the ingredients enumerated in this specification, whether chalk, or any other absorbent earth or earthy substance, were ever before combined with phosphorus and glue, or any gum or other glutinous substance, to produce a compound for matches. The objection, so far as it here applies, is not that these gums or earths have been before so combined with phosphorus, but that the inventor extends his claim so as to include all such combinations. \* \* \* My present impression is that the objection is not well founded. \* \* \* My opinion is, that the specification is not, in point of law, void from its vagueness, or generality, or uncertainty."

Again, the same Justice in *Carver v. Braintree Mfg. Co.*, 2 Story (U. S.) 432, 440, Fed. Cas. No. 2,485, presents substantially the same argument with reference to a machine, in which in a patent for a machine for ginning cotton the patentee had claimed variations as being equally his invention without describing the manner of producing those variations.

An indication of the view that was taken of a specification and the claim as one, and at the same time a statement of the still active principle that the patentee can not insert an element

in his claim for the purpose of reaching an infringer is found in the following statement of Curtis on Patents, 237:

“An infringement is a copy made after and agreeing with the principle laid down in the patent; and if the patent does not fully describe anything essential to the making or doing of the thing patented, there will be no infringement by the fresh invention of processes which the patentee has withheld from the public.”

Mr. Curtis also presents in Sec. 242 the rule hitherto suggested requiring a practical application of an invention, saying that the inventor can not protect his invention by merely stating his discovery.

“He must give it a practical application to some useful purpose, to attain a result in arts or manufacturers not before attained, and his specification must show the application of the principle to such a special purpose, by its incorporation with matter in such a way as to be in a condition to produce a practical result.”

He, however, immediately thereafter accepts as an established principle of law the view of the court in *Foote v. Silsby*, 2 Blatchf. (U. S.) 260, Fed Cas. No. 4919.

“Where a party has discovered a new application of some property in nature never before known or in use, by which he has produced a new and useful result, the discovery is the subject of a patent, independent of any peculiar or new arrangement of machinery for the purpose of applying the new property.”

This statement of the law as it was then interpreted and is now interpreted indicates the necessity of looking beyond the mere description of the parts or the exact parts or combinations themselves, to see whether or not some new principle has been discovered and applied, and then to determine in what appropriate language the principle may be stated.

Mr. Curtis in his chapter on “The Specification” cites many instances illustrating the extremes of interpretation of claims, first in specific cases confining the claim to the exact thing stated, and then in other cases interpreting the claim so as to fairly include the invention set forth.

In *LeRoy v. Tatham*, 14 How. (U. S.) 156, 14 L. ed. 367, (though subsequently, 63 U. S. 132, 16 L. ed. 336, the claim was interpreted as a method to save the patent), is an example of the danger of a misstatement of claims, and the following from Mr. Curtis will sufficiently evidence the advantage of the present method of precision in defining a claim over the other method of relying upon the description:

“This is well illustrated by several cases. In one, the invention claimed was ‘the communication of motion from the

reed to the yarn-beam, in the connection of the one with the other, which is produced as follows,' describing the mode. The patent was sustained, only by construing it as a claim for the specific machinery invented by the patentee for the communication of motion from the reed to the yarn-beams, specially described in the specification. As a claim for all possible modes of communicating the motion, etc., it would have been utterly void. In another case, a patent 'for an improvement in the art of making nails, by means of a machine which cuts and heads the nails at one operation,' was seen at once not to be a grant of an abstract principle, but of a combination of mechanical contrivances operating to produce a new effect, and constituting an improvement in the art of making nails. So, too, where the patentee, in a patent for a machine for turning irregular forms, claimed 'the method or mode of operation in the abstract explained in the second article, whereby the infinite variety of forms, described in general terms in this article, may be turned or wrought,' and the second article in his specification explained the structure of a machine by which that mode of operation was carried into effect, and the mode of constructing such a machine so as to effect the different objects to be accomplished, it was held that the specification did not claim an abstract principle or function, but a machine. So, also, it has been held that the making of wheels on a particular principle which is described in the specification is the subject of a patent; and where the plaintiff claimed as his invention 'the application of a self-adjusting leverage on the back and seat of a chair, whereby the weight of the seat acts as a counterbalance to the pressure against the back of such chair, as above described,' it was held not to be a claim to a principle, but to an application to a certain purpose and by certain means."

That the same rules of interpretation now apply is evidenced for example, in the decision of the Supreme Court in *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U. S. 405, 51 L. ed. 922, in which the court quotes from Section 485, *Robinson on Patents*, as follows:

"The principle of the invention is a unit, and invariably the modes of its embodiment in a concrete invention may be numerous and in appearance very different from each other."

**Equivalents.**—The term "equivalents" in the law of patents, or in the usage of the term in patent causes, has, of course, a basis in the dictionary meaning, but it has a wide range of application, its definitions differing, as do nearly all the tests applied in the patent law, with the circumstances of the case.

There are in the various arts accepted equivalents such, for example, as a spring for a weight, or one machine element or

mechanical movement for another. Even here, however, caution is needed in the statement. While it is generally true, for example, that a worm is the equivalent of a rack and pinion, or a bolt and screw, etc., there might even in these familiar features of machine elements or mechanical movements be some novel application amounting to invention.

When in the same art may be found an element doing the same work in substantially the same way there is rarely a question even that it may be substituted for another equally familiar element in a combination without involving invention; but from that point the decisions diverge.

One of the most striking applications of the doctrine of equivalents is found in the consideration of "double use." This subject has been treated under a preceding heading and it is apparent that in such cases the question of equivalents goes beyond mere structure and is colored by the use of the structure. For, in accordance with the familiar principle, even the same structure may not be an anticipation if taken from some remote art conveying no suggestion of application in the manner set forth in the patent under examination.

In the literature of the cases there are abundant expressions of the courts which would apparently confine all claims to the exact definition of the terms of the claims. On the other hand, there are cases of the highest authority which so construe claims of apparently plain import as to embrace the real invention made by the inventor or to cover a wilful infringement in principle. There is especially a wide divergence, in the measurement of equivalents in broad or pioneer patents on the one hand, and on the other hand in narrow patents showing but little advance in the art.

Some of the most striking and often quoted expressions of the courts stating the general rule limiting a claim to its express terms are to be found in the following cases though in not all of them was the patent narrowly limited: *Merrill v. Yeomans*, 94 U. S. 568, 24 L. ed. 235; *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, 24 L. ed. 344; *Lehigh Railroad Co. v. Mellon*, 104 U. S. 112, 26 L. ed. 639; *Burns v. Meyer*, 100 U. S. 671, 25 L. ed. 738; *Fay v. Cordesman*, 109 U. S. 408, 420, 27 L. ed. 979; *Yale Lock Mfg. Co. v. Sargent*, 117 U. S. 373, 378, 29 L. ed. 950; *White v. Dunbar*, 119 U. S. 47, 30 L. ed. 303; *Dryfoos v. Weise*, 124 U. S. 32, 31 L. ed. 62; *Huber v. Nelson Mfg. Co.*, 148 U. S. 270, 291, 37 L. ed. 447; *Brown v. Stilwell & Bierce Mfg. Co.*, 57 Fed. 731, 6 C. C. A. 528; *Dunlap v. Willbrandt*, 151 Fed. 223, 80 C. C. A. 575; *Lanyon Zinc Co. v. Brown*, 129 Fed. 912, 64 C. C. A. 244; *Universal Brush Co. v. Sonn*, 154

Fed. 665, 83 C. C. A. 422; *Cimiotti Unhairing Co. v. American Fur Co.*, 198 U. S. 399, 49 L. ed. 1100.

In *Keystone Bridge Co. v. Phoenix Iron Co.*, supra, the Supreme Court said that when a patentee has limited himself in his claims "his right to protection is also limited, since the claim actually made by the patentee is the measure of his right to relief."

In *Lehigh Railroad Co. v. Mellon*, supra, the court said that the patentee "gains no exclusive right except for such a machine as his patent describes and secures, though it may be far less broad or comprehensive than his actual invention."

In *Burns v. Meyer*, supra, "it is true the patent can not be extended beyond the claim. That bounds the patentee's right."

In *Merrill v. Yeomans*, supra, that the patentee may not show that his invention is broader than his claims, and that what is not claimed is surrendered to the public.

In *White v. Dunbar*, supra, the court embodied a figure of speech first used in an older British case to the effect that a claim is not "a nose of wax which may be turned and twisted in any direction, by only referring to the specification, so as to make it include something more than, or something different from, what the words express."

The other cases cited above contain similar strong expressions.

One of the fullest expressions of the Supreme Court is found in the case of *McClain v. Ortmyer* (1891), 141 U. S. 419, 35 L. ed. 800, 12 Sup. Ct. 76. In that case the court said:

"While the patentee may have been unfortunate in the language he has chosen to express his actual invention, and may have been entitled to a broader claim, we are not at liberty, without running counter to the entire current of authority in this court, to construe such claims to include more than their language fairly imports. Nothing is better settled in the law of patents than that the patentee may claim the whole or only a part of his invention, and that if he only describe and claim a part, he is presumed to have abandoned the residue to the public. The object of the patent law in requiring the patentee to 'particularly point out and distinctly claim the part, improvement or combination which he claims as his invention or discovery,' is not only to secure to him all to which he is entitled, but to apprise the public of what is still open to them. The claim is the measure of his right to relief, and while the specification may be referred to to limit the claim, it can never be made available to expand it. Thus, in *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, 278, 24 L. ed. 344, 345, the manufacture of round bars, flattened and drilled at the eye for use in the

lower chords of iron bridges was held not to be an infringement of a patent for an improvement in such bridges where the claim in the specification described the patented invention as consisting in the use of wide and thin drilled eye-bars applied on edge. In delivering the opinion of the court Mr. Justice Bradley observed: 'It is plain, therefore, that the defendant company, which does not make said bars at all,' (that is, wide and thin bars,) 'but round or cylindrical bars, does not infringe this claim of the patent. When a claim is so explicit, the courts can not alter or enlarge it. If the patentees have not claimed the whole of their invention, and the omission has been the result of inadvertence, they should have sought to correct the error by a surrender of their patent and an application for a reissue. \* \* \* But the courts have no right to enlarge a patent beyond the scope of its claim as allowed by the Patent Office, or the appellate tribunal to which contested applications are referred. When the terms of a claim in a patent are clear and distinct, (as they always should be,) the patentee, in a suit brought upon the patent, is bound by it. He can claim nothing beyond it.' "

In *McCarty v. Lehigh Valley R. Co.* (1895), 160 U. S. 110, 40 L. ed. 358, 16 Sup. Ct. 240, the court said, when asked to read a feature into the claims for the purpose of sustaining the patent:

"While this may be done with a view of showing the connection in which a device is used, and proving that it is an operative device, we know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement. The difficulty is that if we once begin to include elements not mentioned in the claim in order to limit such claims and avoid a defense in anticipation, we should never know where to stop. If, for example, a prior device were produced exhibiting the combination of these claims plus the springs, the patentee might insist upon reading some other element into the claims, such for instance as the side frames and all the other operative portions of the mechanism constituting the car-truck, to prove that the prior device was not an anticipation. It might also require us to read into the fourth claim the flanges and pillars described in the third. This doctrine is too obviously untenable to require argument."

Similar restatements of this doctrine are found also in *Continental Paper Bag Co. v. Eastern Paper Bag Co.* (1908) 210 U. S. 405, 51 L. ed. 922, 28 Sup. Ct. 748, and citations of that case.

*McClain v. Ortmyer*, *supra*, however, is of the same char-

acter as *Keystone Bridge Co. v. Phoenix Iron Co.* quoted therein. The claim was limited to a horse collar having specific features including a double spring fastening, whereas the defendant used a curved hook. Moreover, the complainant had filed a second application for a patent for a single hook, stating: "The single-roll spring must be conceded to be a structure positively and unequivocally different from the two-roll spring."

In *McCarty v. Lehigh*, supra, a broad claim for a truck-bolster had been rejected; the applicant had abandoned his claim for notched plates on the truck-bolster and had acquiesced in the action of the Patent Office, putting in his allowed claim no suggestion of the feature which he later wished to bodily inject into his claim when before the court.

Upon similar critical examination of the cases containing the stringent judicial dicta it appears that the most vigorous expressions occur where the applicant himself had given a different interpretation in the Patent Office from that he urged in court, where there was some plain self-imposed limitation made by the applicant to distinguish his invention from the prior art and secure his grant and an effort to omit an element or to inject one, or the conclusion of the court that the restriction was necessary to sustain the patent in the light of the prior art or that the terms of the claim expressed all the patentable novelty invented.

For example, in *White v. Dunbar*, the reissued patent was for a process for putting an enveloping material between the metal can and the shrimps not "capable of discoloring the shrimps." The original patent had disclosed as his invention only the use of textile fabric. The purpose of the expansion in the reissue was to include also paraffined paper used by a rival, which was clearly unwarranted.

In *Merrill v. Yeomans*, supra, the court, on familiar principles, declined to construe a process claim for making a new product, "deodorized oil," as a claim for the product.

In *Dunlap v. Willbrandt Mfg. Co.*, supra, the court held that claim 2 of patent No. 483,435 claimed as a principal feature a tube entering the bottle of an atomizer and made in three separate parts to facilitate cleansing, one of the parts being a hollow coupling connecting the other parts of the tube. Each of the parts was said to be a necessary element, and the claim was held not infringed by a structure made in two parts directly joined together. This case recognizes another class of claims (illustrated by cited cases) in which the very divisibility of the parts or a particular method of adjustment constitutes the law of the structure or is the essence of the invention. "In such cases," said the court, "it might be unimportant whether a



structure was made in two pieces instead of three or whether a part is mechanically attached to the remainder of a structure or is integral with it."

In *Lanyon Zinc Co. v. Brown*, supra, the particular feature especially urged as important or "an essential feature" was not found in the defendant's structure. The distinction is shown hereinafter in a comparison of this case with *Metallic Extraction Co. v. Brown*, where the same patent was held infringed by a structure not within the exact terms of the claim.

In *Burns v. Meyer*, supra, the patent claimed "as a new article of manufacture, a side-saddle tree, having the side bars and seat made separately and then united, substantially as for the purpose set forth." Advantages were claimed for this saddle tree made of separate pieces. The defendant's patented saddle tree had side bars and the seat made of one piece of bent wood, and did not have the advantages of the complainant's patent, and was held not to infringe.

In *Lehigh Railroad Co. v. Mellon*, supra, the claim contained a specific, even minute description of the car wheel and the limitation had been put into the claim with the express purpose of avoiding a prior patent. This case is hereafter compared with *Devlin v. Paynter* to illustrate the distinction.

In *Universal Brush Co. v. Sonn*, supra, the claim was for a method including depositing a mass of hot, plastic composition, within a chambered brush frame having a "contracted aperture." The court was of the opinion that to substitute for the words "contracted aperture," the words "face aperture" would amount to a reconstruction of the claim. This the Court of Appeals refused to do. The lower court believing that the patent was for a fundamental invention held it infringed by the defendants, although they omitted the contracted aperture in their method and employed an equivalent. The Court of Appeals, however, regarded the patent as one for an improvement of known methods of construction and entitled to a limited range of equivalents only, and not infringed.

In *Brown v. Stilwell & Bierce Mfg. Co.*, supra, the patentee had limited his claim to a connection by which gas was put into the steam dome of the boiler, or some other part of the boiler, and held that a steam pump was not a connection with the steam dome or the steam space of the boiler. Upon rehearing it was said that the purpose was different and that the escape pipe of the defendant did not connect with the boiler or any outlet from the boiler.

In *Cimiotti Unhairing Co. v. American Fur Co.*, supra, the court held that one of the essential elements of the claim could not be found in the defendants' structure and that the defend-

ants had no equivalent for that element, but an entirely different and superior mechanism.

It is believed that in practically all of the notable cases emphasizing the rigid definitions it will be found that the facts of the cases left no opportunity for doubt or "construction."

Under the subheading of "Primary and Pioneer Inventions," it will appear that mere breadth of statement in a claim does not necessarily involve interpretation or construction any more than any other broad definition inclusive of all species or analogous things.

There is an interesting class of cases in which, notwithstanding an apparently express limitation in the claim the courts have construed a claim to cover an infringing structure not literally within the terms of the claim. In these cases it has appeared that the real invention or the invention meant by the claim did not lie in the claim as limited by the action of some single element or some classifying phrase, but in a new idea of means or method of which the expression of the claim is an over-limitation, a mere illustration of one form.

In these cases it is also apparent that the court regarded it wrong that an infringer who had embodied a valuable idea of means or method first invented by the patentee should be able to share the reward intended for the inventor by merely making a plainly equivalent structure producing the same result in substantially the same way and differing only in an obvious shifting of a part or some merely colorable evasion of structure or action.

What may be termed the rule of liberal construction may, for the present, be sufficiently evidenced by quotations from two cases.

In *Miller v. Eagle Mfg. Co.*, 151 U. S. 186, 38 L. ed. 121, 131 the court said:

"The range of equivalents depends upon the extent and nature of the invention. If the invention is broad or primary in its character, the range of equivalents will be correspondingly broad, under the liberal construction which the courts give to such inventions."

In *McCormick Harvesting Mach. Co. v. Aultman* (Sixth Circuit, 1895) 69 Fed. 371, 16 C. C. A. 259, the court speaking by Taft, Cir. J. said:

"Whether he specifically claims in his patent the benefit of equivalents or not, the law allows them to him according to the nature of his patent. If it is a mere improvement on a successful machine, a mere tributary invention, or a device the novelty of which is confined by the past art to the particular form shown, the range of equivalents is narrowly restricted. If it is a

pioneer patent with a new result, the range is very wide, and is not restricted by the failure of the patentee to describe and claim combinations of equivalents. Nothing will restrict the pioneer patentee's rights in this regard save the use of language in his specifications and claims which permits no other reasonable construction than one attributing to the patentee a positive intention to limit the scope of his invention in some particular to the exact form of the device he shows, and a consequent willingness to abandon to the public any other form, should it be adopted and prove useful. Instances of such a limitation may be found in *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U. S. 274, and in *Brown v. Manufacturing Co.*, 6 U. S. App. 427, 16 U. S. App. 234, 57 Fed. 731, 6 C. C. A. 528. But there is no such limitation in the patent under discussion, and the rule applies which was so fully explained in *Winans v. Denmead*, 15 How. (U. S.) 330, 14 L. ed. 717, where the court said:

"Patentees sometimes add to their claims an express declaration to the effect that the claim extends to the thing patented, however its form or proportions may be varied. But this is unnecessary. The law so interprets the claim without the addition of these words."

"Again, in *Goodyear Dental Vulcanite Co. v. Davis*, 102 U. S. 222-230, 26 L. ed. 149, the Supreme Court said that a patentee was protected against equivalents whether he claims them or not. A most satisfactory discussion of this general subject may be found in the opinion of the Circuit Court of Appeals of the First Circuit in *Reece Button-Hole Mach. Co. v. Globe Button-Hole Mach. Co.*, 61 Fed. 958, 10 C. C. A. 194, where Judge Putnam, on behalf of that court, examines the two lines of cases of which *Winans v. Denmead* and the *Keystone Bridge Case* are respective types, and reconciles them, so far as they may be reconciled. See also, *Keystone Manufacturing Co. v. Adams*, 151 U. S. 139, 38 L. ed. 103, 14 Sup. Ct. 295; *Miller v. Eagle Manufacturing Co.*, 151 U. S. 186, 38 L. ed. 121, 14 Sup. Ct. 310."

The leading example of the cases in which, notwithstanding an apparent limitation in a claim, infringement has been held where another had copied the substance of the invention is *Winans v. Denmead*, 15 How. (U. S.) 330, 14 L. ed. 717, in which the invention related to the peculiar construction of cars for the transportation of coal, and the patent was granted in 1847 after the law had required a claim. The specification described only a conical form, and the claim was in the following language:

"What I claim as my invention, and desire to secure by letters-patent, is making the body of a car for the transportation of coal, etc., in the form of a frustum of a cone, substantially as

herein described, whereby the force exerted by the weight of the load presses equally in all directions, and does not tend to change the form thereof, so that every part resists its equal proportion, and by which, also, the lower part is so reduced as to pass down within the truck frame and between the axles, to lower the center of gravity of the load without diminishing the capacity of the car as described."

It is true that in the specification and claim nothing but the conical form is specifically set forth, nevertheless, it does appear in the claim itself that the purpose and object of the structure could be carried out by other cars differing geometrically in form provided they had substantially the same relations of parts. That is to say, while the specific term employed is "frustum of a cone" the claim proceeds to state the effect of any geometric form which holds and disposes of the load in the way described. The defendant in this case made his car of a different geometric form, not a frustum of a cone, but of a pyramidal form which obtained the same results in the same way.

The court made the distinction that, when a patent covers one geometric form only, it will be so limited where only that form is capable of embodying the invention, but that where the whole substance of the new invention may be copied in a different form then the form is not vital or essential; and held in this case that the applicant was entitled to equivalent forms which will produce the same results.

In *Reece Button-Hole Machine Co. v. Globe Button-Hole Machine Co.*, (First Circuit, 1894) 61 Fed. 958, 10 C. C. A. 194, the often cited case of *Winans v. Denmead*, supra, is elaborately reviewed and indorsed. The patent in suit was No. 240,546. It relates to sewing machines for stitching buttonholes, being an improvement upon that class of machines in which the stitching mechanism is made to travel first along one side of the buttonhole slit, then about the eye and along the other side of the slit.

The distinctive mechanical operation was that the needle-bar, by the movements imparted to it longitudinally and laterally by a frame on the machine is caused to travel backward, etc. Throughout the specification and the claims it appeared that this relative movement was the essential feature of the invention. It appeared also that no previous machine had automatically stitched a buttonhole in the form in which it is ordinarily desired—that is, with the eye. Claim 5 read as follows:

"In a buttonhole sewing machine, a framework for the needle-bar and looper, and a bedplate to hold the material, combined with two cams and with mechanism between the said cams and framework, whereby the needle bar, by the movements imparted to it longitudinally and laterally of a buttonhole by the

said frame, is caused to travel backward in a substantially straight line until near the eye of a buttonhole, then backward and outward and inward, then forward and inward, to follow the contour of the edge of the enlarged eye part of the buttonhole, and then forward substantially in a straight line along the other side of the buttonhole, as set forth."

The court pointed out as the essential feature of this claim the compound movement given the needle-bar resulting from simultaneous longitudinal and lateral movements. While this was old and common in the arts it had never been so applied before, that is, in combination with mechanism of this character, and it was held to constitute a "patentable invention of a fundamental character, highly meritorious, and one to be protected by liberal construction."

It will be observed that in effect the meaning of the claim of Reece is that the plate is fixed and the frame moves, but the court held that the essential thing was that there were relative movements between these parts and that the absolute movements were nonessential, and that, though in the defendant's structure, the frame was fixed and the plate moved it was an infringement. The court said, in effect, that to hold otherwise would destroy the whole value of the Reece patent. The court then, after indorsing in strongest terms the principle of *Winans v. Denmead*, distinguishes a long series of cases which, if they stood alone, the court said, "might be regarded as carrying so far the effect of literal construction of specifications and claims as would compel us to find for the defense on the proposition in question."

*Hoyt v. Horne*, 145 U. S. 302, 36 L. ed. 713, 12 Sup. Ct. 922. This case is an illustration of one of the many cases in which the Supreme Court sustained a mechanical method claim (prior to their condemnation of all such mechanical methods in *Risdon v. Medart*), based upon the principle of earlier decisions of the court.

The claims illustrate how closely a mechanical method claim may approximate a combination claim and read as follows:

"1. The improvement in beating rags to pulp in a rag engine having a beater-roll and bed-plate knives consisting in circulating the fibrous material and liquid in vertical planes, drawing the same between the knives at the bottom of the vat, carrying it around and over the roll and delivering it into the upper section of the vat, substantially as described.

"2. A rag engine for paper-making, comprising the vat, the beater-roll mounted on a horizontal shaft in one end of the vat, and the horizontal partition dividing the body of the vat into an upper and lower section or passage, the fibrous material and

liquid being carried from the lower section between the knives and delivered over the top of the beater-roll into the upper section or passage, substantially as described."

In this case also the defendant was manufacturing under a patent, and, in fact, showed a construction apparently an improvement over the Hoyt construction. Nevertheless, the court thought the defendant had appropriated "all that was of value in the Hoyt device, viz., the beater-roll at the end of the tub, extending across its entire width, and the circulation of the pulp in vertical planes at the only point where such circulation is of value."

The court regarded the substitution of a vertical for a horizontal mid-feather on the inoperative end of the tub as "merely the use of an old and well-known mechanical equivalent, and obviously intended to evade the wording of the claims of the Hoyt patent." The court held the defendant infringed claim 1 and did not pass upon the more doubtful question of claim 2.

Under heading IX, "Letters-Patent and Their Construction and Scope," and elsewhere, many examples are given of the views of the courts upon invention. An apt illustration at this point may be found in the case of *In re Harbeck*, — App. D. C. — 191 O. G. 586, because the subject-matter is simple, it reviews the position of the Patent Office, and it quotes largely from the decisions of the Supreme Court, summing up what is considered by the Court having to do with the grant of patents to be the lesson of the cases decided by the highest tribunal in passing upon the validity of patents.

It should be understood that in this case the art is accepted as stated by the Court and that the reasons of the opinion are important without reference to the future history of the patent which may be granted upon this application; and that this is an illustration of what is generally known as a "liberal" view of invention.

The following claims substantially indicate what was before the court.

"1. The vessel having walls made of layers of paper united to each other by a fused cement.

"2. The can body composed of oblong layers of paper cemented to each other step fashion by a fused cement and having its stepped ends cemented together by the fusible cement and caused to adhere to each other by the application of heat.

"3. The can body composed of layers of paper cemented together by fused cement and creased with three creases to facilitate bending at the corners into a square form and to flatten for shipment.

"6. The combination of the can body made of layers of paper

cemented together by fused cement and having sheet metal heads applied thereto, said can body being made square with creased rounded corners, and said heads being rounded at the corners to correspond."

The court said:

"The principal feature of the invention consists in the use of fused cement, instead of a soluble adhesive. It is claimed that all former efforts in this direction, and numerous patents are cited, have proved defective, in that soluble adhesive or cement was used, and, when the solvent evaporated or dried out, it left the walls of the vessel porous, and not impervious to gases or moisture. Overcoming this defect is the problem appellant claims to have solved. Not only is no solvent used in appellant's cement, but he claims to use a combination which gives rise to no objectionable odors when his vessel is put into use."

\* \* \* "The application was rejected by the Patent Office for the reason that the change from the prior art, where the sheets were made of layers of paper united by the use of soluble cement, to the use of fused cement, which, according to the specification, marked the transition from failure to success in this art, was a mere mechanical step capable of being taken by any one skilled in the art. \* \* \* It is easy to dispose of a case, where the issue of invention is close, by holding that the advance over the prior art constitutes a mere mechanical change apparent to those skilled in the art. But, in the absence of proof to support this conclusion, and where the question of patentability is close, the doubt should be resolved in favor of the applicant. (In re Eastwood, 33 App. D. C., 291.)"

The court then discusses *Smith v. Goodyear Vulcanite Co.*, 93 U. S. 486, quoting from that decision a citation from Webster on Patents and the distinction of the case of *Hotchkiss v. Greenwood* (11 How. [U. S.] 248). The following is the quotation from Webster—a statement somewhat broader than the test suggested by the court later in the case:

"The utility of the change, as ascertained by its consequences, is the real practical test of the sufficiency of an invention; and since the one can not exist without the other, the existence of the one may be presumed on proof of the existence of the other. Where the utility is proved to exist in any degree, a sufficiency of invention to support the patent must be presumed."

The court then carefully sums up in what is intended to be a distinction or test of invention as follows:

"While the use of new materials to produce a known result, or of known materials to produce a new but obvious result, may not always constitute invention, if the new idea, when applied, brings success out of failure, produces a new and useful result

and saving in operation or production, or efficiency instead of inefficiency, gives to the device new functions and useful properties, it is invention, and may be patented. Appellant has met these requirements."

The court then cites with approval the following from *Webster Loom Co. v. Higgins*, 105 U. S. 580:

"It is further argued, however, that, supposing the devices to be sufficiently described, they do not show any invention; and that the combination set forth in the fifth claim is a mere aggregation of old devices, already well known; and, therefore, it is not patentable. This argument would be sound if the combination claimed by Webster was an obvious one for attaining the advantages proposed—one which would occur to any mechanic skilled in the art. But it is plain from the evidence, and from the very fact that it was not sooner adopted and used, that it did not, for years, occur in this light to even the most skilled persons. It may have been under their very eyes, they may almost be said to have stumbled over it; but they certainly failed to see it, or to estimate its value, and to bring it into notice. \* \* \* Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produces a new and beneficial result, never before attained, it is evidence of invention."

The court then said:

"We are of opinion that appellant has discovered something new and useful and has demonstrated its utility. These are the elements which enter into patentable invention." As the court said in *Diamond Rubber Co. v. Consolidated Tire Co.*, (220 U. S. 434):

"This satisfies the law, which only requires as a condition of its protection that the world be given something new and that the world be taught how to use it. It is no concern of the world whether the principle upon which the new construction acts be obvious or obscure, so that it inheres in the new construction."

"In other words, the inventive discovery made by appellant consisted in an intelligent apprehension of the elements entering into the device and the bringing of them together in such relation as to produce a new and useful article of commerce. The extent to which he modified or altered existing inventions is unimportant, since he accomplished a new and beneficial result not so obvious as to suggest itself to those skilled in the art. It remained for appellant to discover the hidden cause that marked the line between failure and success. In *Diamond Rubber Co. v.*



Consolidated Tire Co., *supra*, the court divides patentable invention into two classes, as follows:

"In other words, the invention may be broadly new, subjecting all that comes after it to tribute (*Railway Co. v. Sayles*, 17 U. S. 554, 556); it may be the successor, in a sense, of all that went before, a step only in the march of improvements, and limited, therefore, to its precise form and elements."

*Benbow-Brammer Mfg. Co. v. Strauss, et al.*, (Second) 166 Fed. 114, 92 C. C. A. 98. The Schroeder patent, No. 535,465, had previously been before the courts in various cases and circuits, noted in the statement of this case. In all of these prior decisions the patent had been sustained, but in one case it was held not to be infringed. This was, however, reversed in *Benbow-Brammer Mfg. Co. v. Richmond Cedar Works*, (Seventh) 170 Fed. 965, 96 C. C. A. 101.

The claim reads as follows:

"1. An operating shaft having a rotary reciprocating motion, a cylinder placed upon the shaft and having a sliding movement thereon, and through which cylinder motion is alone communicated to the shaft, and a double row of teeth or cogs upon the cylinder extending at an angle to the shaft, combined with a driving shaft having means for revolving it attached to one end, and a wheel for engaging the teeth on the cylinder at the other, the driving shaft being driven continuously in one direction, substantially as shown."

It will be observed that this claim calls for a cylinder having a sliding movement upon the shaft. The court said of the defendants' structure:

"It shows a skilful attempt to avoid the claim by the substitution of well-known equivalents for some of the elements which do the identical work of the Schroeder combination. In both structures the stirrer is agitated by a rack and pinion motion, the rack being located on the operating shaft and the pinion on the driving shaft. The main difference between the two is that in Schroeder's machine the reciprocating motion is produced by the up and down movement of the rack and in defendants' by the up and down movement of the pinion. This change is accomplished by substituting for the driving shaft of the claim a driving shaft which, as the defendants' brief asserts, 'is well known in mechanics as a "floating" shaft, and making the necessary mechanical changes incident to the substitution.

"We are dealing, not with a great invention, but with a meritorious one which has made a distinct advance in the art in question. We think the claim should be given an interpretation liberal enough to protect the inventor from the use of machines

which differ only in nonessential changes which any skilled mechanic would know enough to make.”

*Bundy Mfg. Co. v. Detroit Time-Register Co.*, (Sixth Circuit, 1899), 94 Fed. 524, 36 C. C. A. 375. Taft, Lurton, and Clark. The following claims of patent No. 452,894 were involved:

“(3) A clock movement and hour and minute recording wheels, synchronous mechanism actuating said wheels, a key provided with a bit carrying numbers, brought into alignment with the hour and minute wheels by the turning of the key, a recording strip, and an impression hammer, in combination as set forth.

“(4) A clock movement, hour and minute recording wheels, synchronous mechanism actuating said wheels, a key provided with a bit carrying numbers brought into alignment with the hour and minute wheels by turning of the key, a ward upon the key, a recording strip, and an impression hammer operated by mechanism actuated by the ward of said key as it is turned, in combination as set forth.”

The defendant apparently did not use a turning key, a key which carried a number on its bit, or an impression hammer. The court, reversing the lower court, held that while Bundy was not in a broad sense a pioneer in the art, his invention marked a distinct step in the art and that his mechanism was the first structure of its kind. Citing various cases hitherto discussed, the court held that the particular differences urged by the defendant were immaterial and not of the essence of the invention as presented by the claims, and concluding on this point said:

“True, we have not limited Bundy to impression mechanism in the shape or form of a hammer, nor to a key operated only by turning or carrying the workman’s number only on a projection upon its side. To have done so would be to destroy his patent, and open his invention to the assaults of those who, with only colorable changes, could avail themselves of the very heart of his invention.”

*Adam v. Folger*, (Seventh Circuit, 1903) 120 Fed. 260, 56 C. C. A. 540. In Folger’s patent No. 680,769, the fifth claim comprised eight elements. One of these elements was stated as “a supplementary valve, arranged in the plug of the main valve.” The invention lay, the court said, in substance, in conceiving and putting into workable form the idea of regulating separately the flow of the water, while preserving the unity of action of the supply valves for both water and gas. The defendant used the supplemental valve and instead of locating it, as called for by the claim

of the patent in suit, in the main valve, he moved it from the plug to the side of the main valve.

The court in holding that this change did not avoid infringement of the claim said that, "If a patentee claims eight elements to produce a certain result, when seven will do it, anybody may use the seven without infringing the claim," thus summing up several cited cases. The court proceeds, however, to say that "form, location, and sequence of elements are all immaterial, unless form or location or sequence is essential to the result, or indispensable, by reason of the state of the art, to the novelty of the claim," citing several cases.

*B. F. Avery & Sons v. Case*, 143 Fed. 214, 78 C. C. A. 110. In this case in the same circuit (the Seventh) *Adams v. Folger* and other cases of the same type are cited to sustain the interpretation of a claim to include a different location where location was not of the essence of patentable novelty.

This case is also interesting as given a rather precise definition of the term "means."

Claim 5 of patent No. 650,771 reads as follows:

"(5) In a plow, the combination with a standard, share, and moldboard of a depth-runner, comprising two sections pivoted at their forward ends upon opposite sides of the standard, means for adjusting the height of their rear ends, a knife or rudder pivoted at its forward end between the sections of the depth-runner, and means for adjusting the height of its rear end independently of the adjustment of the depth-runner, substantially as described."

The court found that Avery had devised a novel combination in which a weighted support extended from the plow-structure to the rear end of the runner, and sustained, by means of a throughbolt, both the runner and the rudder in adjustable relations to each other and to the plow. But the court held that the broad claims 2 to 6, including the quoted claim 5, were not properly limited to the combination which included suitable means of securing the runner and the rudder in adjustable relations to each other and to the plow at one operation, but that the phrasing of the claim applied equally well to the old patents of the art.

Having thus refused an elastic interpretation of the broad claims, the court sustained the more specific claims 7 and 8 without reference to the fact that the defendant had a different location of the upper ends of the brace rods.

Upon critical comparison of the claims in the defendant's structure, however, the court concluded that, in reality, the defendant was within the terms of the claims, holding the defendant, therefore, an infringer in either event.

*Cazier v. Mackie-Lovejoy Mfg. Co.*, (Seventh), 138 Fed. 654, 71 C. C. A. 104. In patent No. 696,940, for a trousers-hanger, the novelty of the claim lay in the particular clamping-jaws. The other elements of the claim were old. The defendant appropriated the novel clamping-jaws but used with them another form of suspending arms equally old, but not those defined by the claim. The court said that to hold otherwise than that the defendant infringed, "would be to rob an inventor by a blind literalism," citing and discussing *Adam v. Folger*, etc.

*Metallic Extraction Co. v. Brown*, (Eighth), 104 Fed. 345, 43 C. C. A. 568.

Patent No. 471,264. Claim 1 read as follows:

"1. In an ore roasting furnace having means for stirring and advancing the ore, a supplemental chamber at the side of the main roasting chamber, and cut off from said main chamber by a wall or partition, and carriers in said supplemental chambers connected with the stirrers, but removed from the direct action of the heat, fumes, and dust, substantially as herein described."

The defendant manufactured under patent No. 532,013. The court speaking of the patent in suit said:

"In the light of the present record, it must be conceded, we think, that Brown was the first to conceive the idea of constructing a supplemental chamber adjacent to the oven of an ordinary ore-roasting furnace, and locating the rabble-operating mechanism therein, for the purpose of shielding it from the heat and prolonging its life. No other inventor prior to this time appears to have hit upon that mode of construction, and in suggesting it he appears to have made a marked advance in the art of furnace building, even if his invention can not be properly termed a pioneer invention."

And of the construction of the claim in discussing infringement:

"We can conceive of no reason for such a self-imposed limitation, since it is obvious that whether the supplemental chamber was placed at the side of the main roasting oven, or underneath, it would operate in the same manner and produce the same result. As we have before intimated, we think that the words stating the location of the supplemental chamber crept into the claim inadvertently, because of the style of furnace that happened to be chosen to illustrate or embody the invention. We are accordingly of opinion that the first claim of the Brown patent should be construed to cover a supplemental chamber placed beneath the main roasting chamber, as in the Ropp device, because a supplemental chamber so placed is a mere mechanical equivalent for one located at the side thereof."

(The court cited *Winans v. Denmead*, *Hoyt v. Horne*, *Mc-*

Cormick v. Aultman, Reece Buttonhole Mach. Co. v. Globe Button-Hole Co., Western Electric Co. v. La Rue, Devlin v. Paynter.)

In interesting comparison with this case is the case in the same circuit of Lanyon Zinc Co. v. Brown, 129 Fed. 912, 64 C. C. A. 344. The court referred to the previous cases on the patent No. 471,264, including Metallic Extraction Co. v. Brown, and Lanyon Zinc Co. v. Brown, 119 Fed. 918, 56 C. C. A. 448.

In the present case, the question was whether a structure made in accordance with patent No. 691,112 in which the furnace is supported by posts and the rabble operating mechanism is placed in the unenclosed space beneath was an infringement. The court held it was not an infringement and in this case applied the rule that the patent is limited to the claim as made, citing McClain v. Ortmyer, Keystone Bridge Co. v. Phoenix Iron Co., and White v. Dunbar.

That is, in these two cases on the same patent the court, in one, turned for authorities to the class of Winans v. Denmead and in the other to the class of Keystone Bridge Co. v. Phoenix Iron Co.

Mossburg v. Nutter, (First Circuit, 1905) 135 Fed. 95, 68 C. C. A. 257. This case involved patent No. 491,012. In describing the invention the court said:

"In this type of bicycle bell, the striking mechanism is set in operation by the contact of a friction roll with the tire of the wheel. In its normal position, the roll is held out of contact with the tire. When, however, the rider desires to ring the bell, he presses a lever or finger piece, which causes the roll to move into contact with the tire; and when this pressure is withdrawn, the roll immediately resumes its normal position."

The following claims fairly state the invention:

"(1) In a bell for bicycles and other velocipedes, an oscillatory plate or disk mounted to turn in the rear of the gong, and complementary striking mechanism, carried by said plate and adapted by the movement thereof to be thrown into and out of action by contact with and removal from the bicycle or velocipede wheel."

"(4) A bell for bicycles and other velocipedes, consisting of a bracket secured to the fork of the machine and extending beside its wheel, a gong supported upon the outer end of the bracket, a plate or disk centrally pivoted on the outer end of the bracket and fitted and adapted to turn freely in the inner side of the gong and carrying a striker adapted to operate on said gong, mechanism carried by said plate or disk for transmitting the power of the bicycle or velocipede wheel to operate the striker, and means for turning said plate or disk to throw

its power-transmitting mechanism into and out of contact with said wheel, substantially as herein described."

In the opinion, the court defines the meaning of the phrases employed in the claims. In discussing the two patents especially cited and speaking of the nearest one, the court said that it "never reached the Ericson conception of mounting the entire bell on a pin at the outer end of the rigid bracket." And, "it is an important structural modification, producing an improved mode of operation, in that the whole bell structure no longer swings bodily through the air." The court in speaking of the broad claims said: "Upon their face alone, it may be that claims 1 and 2 are broad enough in their terms to include the Hill & Tolman and some other prior bells." And concluded that the phrases of the claims when read with the drawings and specifications were intended to cover and do distinctly cover by their language the primary feature of the Ericson invention; and though, in one of the defendants' bells, the gong was not made stationary on the end of the pivot but was pivoted with the lever and so rotated with it and in the other there were separate pivots for the gong and lever whose axes were not pivoted so that the gong rotated with the lever and had a slight bodily movement, the court held these to be equivalent to the combination of the patent in suit and to be within the meaning of the claims of the patent in suit.

They proceeded upon the idea stated as follows:

"The claims of a patent are to be fairly construed, so as to cover, if possible, the invention, and thus save it, especially if it be a meritorious one. In approaching a patent, we are to look primarily at the thing which the inventor conceived and described in his patent, and the claims are to be interpreted with this particular thing ever before our eyes. In confining our attention too exclusively to a critical examination of the claims, we are apt to look at them as separate and independent entities, and to lose sight of the important consideration that the real invention is to be found in the specification and drawings, and that the language of the claims is to be construed in the light of what is there shown and described."

McSherry Mfg. Co. v. Dowagiac Mfg. Co., (Sixth), 101 Fed. 716, 41 C. C. A. 627.

In this case claim 1 of patent No. 446,230 for a grain drill included as an element "the clamping-plates for a pivotal connection with the draft-bars." The defendant used a pivotal bolt and wedge-plate for the same purpose.

Of this, Judge (now Mr. Justice) Lurton with whom sat Judges Taft and Day, said:

"It is true that he calls for clamping-plates in his claim,

and that he does not claim any other method of making his connection. But he has not shown any intention to confine himself to that specific mode of connection. The form he described and claims is not of the essence of his invention, and the law allows a patentee any form which is the equivalent of that claimed, unless he has expressly limited himself to the one claimed and described, or unless it is necessary to limit him to the specific form in order to save his patent from anticipation."

While in a sense this case is an example of a construction of a specific term to give it a broader meaning the defendants' structure, perhaps, might have been classed under the term of the claim without doing violence to the meaning of the words.

*Sessions v. Romadka*, 145 U. S. 29, 36 L. ed. 609, 12 Sup. Ct. 799. In this case the claim of patent No. 128,925 for a trunk fastener reads as follows:

"3. The spring catches I, constructed and applied to the front of the body, as described in combination with the tongues or hasps J, on the top, when arranged to operate as set forth."

The defendant made his device in pursuance of a patent. The court, after discussing the difference between the two patents, said:

"In view of the fact that Taylor was a pioneer in the art of making a practical metallic trunk fastener, and invented a principle which has gone into almost universal use in this country, we think he is entitled to a liberal construction of his claim, and that the Romadka device, containing as it does all the elements of his combination, should be held an infringement, though there are superficial dissimilarities in their construction."

There are a number of cases in the reports in which it would appear from the trend of the opinions that the principle of construction of *Winans v. Denmead* and *Reece Button-Hole Co. v. Globe Button-Hole Co.* had been adopted. On a closer analysis, however, many of these cases are found to turn upon some immaterial or formal difference between the structure of the defendant and of the complainant leaving the defendant's structure within the terms of the claim in suit. A few examples will serve to illustrate this class of cases.

*King's County R. & F. Co. v. U. S. Consol. S. R. Co.*, (Ninth), 182 Fed. 59, 104 C. C. A. 429. In this case claim 17 of patent No. 619,693 reads as follows:

"A machine for seeding fruit, comprising a cylindrical carrier composed of thin plates of two constructions arranged alternately, the plates of one construction having long teeth spaced apart circumferentially so as to exclude the seeds of the fruit, and the plates of the other construction being of smaller diameter and smooth circular contour and of such thickness as to

exclude the seeds of the raisins, pressing means for impaling the fruit on such teeth, a seed stripping device, and a fruit stripping device, substantially as set forth."

It will be observed that the claim of the patent in suit calls for plates (disks) having long teeth and alternating sets of plates or disks of smaller diameter and smooth circular contour. The defendant made up the first of two plates which held between them the long teeth, but this structure was in effect the structure set forth in the claim of the patent. The defendant also used corrugated annular plates of smooth circular contour alternating with the other plates or disks, but this was also within the terms of the claim.

In short, the difference between the two was merely that in the patented structure the disk was stamped out of a single piece of metal, whereas in the defendant's structure it was constructed of three parts. It would appear, however, that the defendant's structure would fall within the definition of the claim without the necessity of any such construction of the terms of the claim as was made in *Winans v. Denmead* and in the *Reece Button-Hole* case.

This case is especially interesting in that the court, in referring to a prior patent, Crosby, No. 56,721, said:

"The Crosby invention undoubtedly anticipates and described the whole theory of the Pettit patent; but it does not appear ever to have been put to use, and there is no evidence that any machine was ever constructed under it."

The court goes on, however, to point out some deficiencies of the Crosby specification and objections which would be made if the Crosby structure had been built. The case involving an appeal from an order granting a preliminary injunction, the court found it unnecessary to classify the Crosby patent, but plainly indicated that it would probably be held to be an unsuccessful and abandoned invention.

The court further said: "Pettit was not only the first to invent a built-up impaling cylinder, but he was the first to invent and construct a raisin-seeding machine embodying the principle upon which all such machines must necessarily operate."

Then, in summing up in the matter of equivalents, citing several authorities:

"If his improvement is but a narrow one, or if he has used language such as clearly to show his intention to limit his invention to a particular form described, then he is held to the language of his claim, and limited to that specific form. But if his is a pioneer invention, or one of such merit as to be entitled to a liberal construction, the claim will not be thus limited, even if couched in specific language, unless the inventor



has also shown his positive intention to relinquish to the public all other forms in which his invention might be embodied.”

*Western Electric Co. v. La Rue*, 139 U. S. 601, 35 L. ed. 294. In this case, patent No. 270,767, for a telegraph key, was held infringed by the telegraph sounder described in letters patent No. 352,317. The third claim of the patent in suit read as follows:

“The combination, in a telegraph key, of the lever fulcrumed upon the torsional spring, with the adjusting screws HH’, for regulating the amplitude of the lever movement, and the retractile resistance of the torsional spring, substantially as described.”

It is questionable if this case falls within the class of claims which do not in terms precisely cover the defendant’s structure, for though the defendant’s structure differed in details, it was held to embody the combination of the third claim of the patent in suit.

The case is also a famous illustration of invention. *La Rue* had applied a torsional spring to a telegraph key which had previously been regulated by a coil spring or a flat spring. Torsional springs had been used in clocks, doors, etc.

*Houser v. Starr*, (Sixth, 1913), 203 Fed. 264, (C. C. A.)

In considering patent No. 533,095 for a drawing instrument, the court discussed the third claim, which reads as follows:

“3. The combination of the sliding bar D, the shaft L, with its integral guide arms, the sliding shaft I, the arm H, the spiral spring S to elevate the several parts, the operating and depressing arm K, and the pencil holder, to produce continuous or broken lines, substantially as described.”

The defendant employed the complete combination excepting the “arm H,” but to find infringement, the court said, it would be necessary to interpret the phrase as covering any means for producing right-angled, transverse motion in the second shaft of the machine.

In this case the court puts upon one side a class of cases illustrated by *Hoyt v. Horne*, *McSherry v. Dowagiac*, and *Metallic Extraction Co. v. Brown*; and on the other side *White v. Dunbar*, *Cimiotti v. American Co.*, *Coupe v. Royer*, *Brown v. Stilwell*, and *Keystone v. Phoenix Iron Co.*, placing the case before the court in the latter class, and finding no infringement because the defendant did not use the “arm H,” but suggesting a possibility of the opposite classification if the claim had referred to an invention more broadly novel.

The difficulty of stating “fixed rules” is suggested in this case, where the court said:

“The meaning of ‘equivalent’ is a question of fact to be de-

terminated by the language of a claim, in connection with the specification, the drawing, the state of the art, and history of the application. Attempts to make arbitrary rules, as of law, for determining questions of fact, lead, to artificiality and seldom help."

(The subject of equivalents is again considered under "Infringement," with additional illustrative cases.)

**Combination; Aggregation.**—By far the largest number of claims fall under the class of "machine," and under the designation of "combination" claims.

Under a preceding heading the true place of "aggregation" in patent law has been stated. There have been many restrictive definitions of combination, such for example, as that of *Pickering v. McCullough*, heretofore discussed, which have been applied in practice only where invention was lacking. There are, however, other definitions which are more universally applicable, and of these definitions perhaps none is more accurately stated in the light of the past practice as well as the practice subsequent to the decisions than are those of *Lynch v. Dryden*, 1873 C. D. 73, and *Forbush v. Cook*, 2 Fish. (U. S.) 669, Fed. Cas. No. 4931.

"A combination within the meaning of the patent law may be defined to be a novel assemblage of parts, either old or new, so coacting either simultaneously or successively as to produce a unitary result."

"A patentable combination is one of which the several parts co-operate to produce a certain result, not that their operation must be simultaneous, but they must co-operate in the sense that the function of each part aids and is aided by those of the other parts."

It may be advisable here to also state, in opposition to the definition of combination, one of the early definitions of aggregation of *Hailes v. Van Wormer*, 87 U. S. 353, 22 L. ed. 247.

"The grouping together devices, in which each produces its customary effect, unmodified by the others, and no more, and no result follows from the union which was not previously produced by some of the elements."

The stricter rule of combination has occasionally been restated, as, for example, in *Deere & Co. v. J. I. Case Plow Works*, 56 Fed. 841, 6 C. C. A. 157, citing *Florsheim v. Schilling*, 137 U. S. 64, 34 L. ed. 574, and other cases, in which it is said that in a patentable combination of old elements all the constituents must so enter into it that each qualifies every other. It must form either a new machine of a distinct character and function or produce a result due to the joint and co-operating

action of all the elements and which is not the mere adding together of separate contributions.

Carefully read these definitions and distinctions may be applied, but in practice the accepted rule is rather imbued with the spirit of the *National Cash Register Co., et al. v. American Cash Register Co.*, 53 Fed. 367, 3 C. C. A. 559, that it is not necessary in a new combination of old elements that each should modify or change the characteristic mode of action or method of operation of all the others, but only that the combination should produce a new and useful result as the product of the combination and not a mere aggregate of several results each the complete result of one of the combined elements. Where a new result is produced by the combination, it is enough that each element contributes to its production. In the *Deere & Co. cultivator* case just cited, the court found the claim void of novelty in view of the prior art, the parts of the combination were old in similar combinations and no new result was achieved by selecting certain parts, or equivalent parts, and putting them together in the familiar manner. (See as accepting this as the rule of the Patent Office, *McCormick v. Robinson*, 124 O. G. 2903.)

In considering or drawing a combination claim the rule of the weight of authority runs with the best practice. When a combination is presented, the first question is whether or not that combination is new, not merely whether or not the several parts or some of the parts are new. As a mere difference in structure can not avail an infringer if it be within the claim of a patent, conversely a claim of an application or a patent may be met or barred by the same combination or an equivalent combination. As illustrated in the case of *Aron v. Manhattan Railway Co.*, 132 U. S. 84, 33 L. ed. 272, the claims before the court related to the well-known swinging gates for elevated railroad trains in which the rods and links may be placed upon the inside of the guard railing as well as upon the outside, and in which the operating mechanism may, if desired, be placed beneath the platform, and in which the gates may be so hinged as to lie against the body of the car when opened instead of against the guard railing and in which sliding gates may be used instead of swinging gates.

In considering these claims a transom lifter, a gate opener for any use or a door closer which had the principal features of the combination claims would be a substantial anticipation, because, it would be said (and it was said), that the additional specific features are only such as are common in the car to which the operating mechanism was applied and because the specific changes were only such as came within the expected skill of

the calling, that is, involved mere mechanical skill and not invention. However, if in this case, there had been some change, some reorganization which the court thought did involve invention, then if the point had been covered in the claims, that change would have been patentable. It will, therefore, be apparent how necessary it is to first determine what is the feature and combination of novelty and then to determine how that shall be best expressed so as to most clearly define either the particular part which is the invention, the new combination which is the invention, or in other things than machines, the new method or process, the new product, or the new composition which has been invented.

Some examples:

Lynch et al., v. Dryden et al., 1873 C. D. 73. Claim:

“The combination, in a walking cultivator, of the following instruments, to wit: A split tongue or frame, an arched or raised axle mounted on wheels, and two beams hinged thereto in such a manner as to permit them to be moved vertically and laterally, independently of each other, substantially as described.”

This case recites the usual and expected definition of combination as follows:

“It would seem, however, from the decisions of the courts respecting combinations, cited in the cases above referred to, that two things are always essential: first, a novel assemblage of parts exhibiting invention; second, that the parts shall co-operate in the production of a useful result. By the term ‘co-operate,’ as here used, the courts do not mean merely acting together or simultaneously, but acting to one common end, to a unitary result. Each and every part must have its subfunction to perform, and each must have a certain relation to and dependence upon every other, and all must act in producing the result.”

The claim is criticised as follows:

“The relation of the tongue to the other parts is such that they are in no way affected by the circumstance as to whether the tongue is split or not. Their operation is exactly the same, and they produce exactly the same result with a straight tongue as with a split. The axle, wheels, plows, etc., have no influence in securing the benefits arising from the use of the split tongue; neither does the split of the tongue have the remotest bearing or influence upon the functions of the other parts; neither do the parts in any proper sense co-operate in producing a unitary result. The split tongue tends to keep the horses from treading upon the corn. That it does without the aid of any of the other parts, and here the peculiar function of the split tongue ends.

It would do exactly the same with any other cultivator, whether walking or riding, whether the plows are attached or detached, and whatever might be the shape of the axle."

National Cash Register Co. et al., v. American Cash Register Co., (Third), 53 Fed. 559, 3 C. C. A. 559. Claims:

"2. In a cash registering apparatus, a series of keys to designate certain amounts, a pawl-carrying bar, c, and a series of toggle-levers, x, intermediate between each key and the said pawl-carrying bar, the toggle-lever, b, actuated by the bar c, combined with the drawer-holder D and drawer C, substantially as described."

(The reference letters in this claim are plainly unnecessary and an element of weakness, and the concluding parts are not definitely located.)

"3. In a cash-registering apparatus, a series of keys to designate certain amounts, combined with the drawer, the drawer-holder D, mediate connected with said keys, and the spring to throw the drawer open when released by the drawer-holder, substantially as described."

These claims were held not substantially identical, and it was held that claim 3 could not be restricted to all or any of the devices used in the mediate connection between the series of keys and the drawer-holder, not only because they are not even specified in the third claim, but also because they are expressly claimed in the second claim.

These claims do not strictly meet the rigid requirements of the definitions of combination.

In this case, the court defines a combination and qualifies the original acceptance of *Pickering v. McCullough*.

"We have not overlooked the suggestion of appellee's counsel that Campbell's conception and arrangement were merely of an aggregation of known elements, not amounting to a true combination, and that therefore he was not entitled to a patent for anything. This suggestion is based upon the allegation that each of the elements associated by Campbell does not qualify every other of them; but this is true only in the sense that each does not modify or change the characteristic mode of action or method of operation of the others. In doing its appointed share toward effecting the single result achieved by the co-operation of all, each element acts, of course, according to the law of its own being; but, though of necessity so acting, it is still none the less combined with the others and does 'qualify' each and all of them (not their distinctive methods of operation) in the sense that each is by the co-operation of the others capacitated to contribute, by acting in its own peculiar way, to the common end, which, without the co-operation of each and

every other of the co-ordinated elements, it would be powerless to accomplish or advance. Some of the language used by Mr. Justice Matthews in delivering the opinion of the Supreme Court in the case of *Pickering v. McCullough*, (1882 C. D. 28, 21 O. G. 73, 104 U. S. 310, 26 L. ed. 749), has been pressed upon our attention as indicating, it is claimed, that, in a patentable combination of old elements, all the constituents must so enter into it that each changes the mode of action of every other and that each element must not merely perform its own part in the combination, but must also in some way be directly and immediately concerned in the performance of their respective parts by every other of the elements. No such doctrine as is thus claimed to be deducible from the opinion in *Pickering v. McCullough* appears to have been essential to the judgment in that case; nor do we think it necessary to attribute to the particular language referred to (1882 C. D. 28, 21 O. G. 73, 104 U. S. 310, 26 L. ed. 749) the meaning ascribed to it by counsel. If, instead of an extract, the whole opinion be read in connection with the authorities which are cited in it, it may be readily perceived that the substance of the doctrine intended to be affirmed is that a combination to be patentable must produce a new and useful result as the product of the combination and not a mere aggregate of several results each the complete result of one of the combined elements."

*Yale Lock Mfg. Co. v. Sargent*, 117 U. S. 373, 29 L. ed. 950.

Claim:

"The arrangement of two or more rollers, H H', of varying eccentricity, when combined with the cam, in the manner and for the purpose specified."

While this claim is somewhat awkward in its construction, it defines a combination. This combination does not meet the strict requirements of the definitions, because the cam performs its function unmodified by the rollers, and vice versa, though the relation is intimate.

(Patent No. 98,622, January 4, 1870, Sargent.)

*Clough v. The Gilbert & Barker Mfg. Co. et al.*, 106 U. S. 178, 27 L. ed. 138.

Claims:

"1. The bat-wing burner perforated at the base in combination with the surrounding tube, substantially as described.

"2. Also, in combination with the bat-wing burner perforated at the base, and surrounding tube, the tubular valve for regulating the supply of external gas to the burner, substantially as described."

These claims do not meet the strict requirements of the rigid

definitions, but no objection was made to them by the court upon that ground.

(Patent No. 104,271, June 14, 1870, Clough.)

(See this case more fully discussed under "Infringement.")

Lake Shore and Michigan Southern Ry. Co. v. National Car Brake Shoe Co., 110 U. S. 229, 28 L. ed. 129.

Claims:

"1. The shoe A and sole B, both being constructed and adapted to each other substantially as described, so that the sole can have a lateral rocking movement on the shoe, for the purposes specified.

"2. The combination of shoe A, sole B, clevis D, and bolt G the whole being constructed and arranged substantially as specified."

(Upon the question of infringement it was held that claim 2 was not limited to "lateral rocking movement.")

It is apparent that the claims are not well expressed. Nevertheless, though claim 2 is a bald combination without any statement of the relative location and relation of the parts, it does present a combination which was sustained.

(Patent No. 40,156, October 6, 1853, Bing.)

Ide v. Ball Engine Co. et al., 144 U. S. 550, 37 L. ed. 843.

Claim of Patent No. 301,720, Ide, July 8, 1884:

"In a fly-wheel governor, the combination, with relatively moving parts, of a dash-pot, substantially as described."

The claim is not presented as a model, but it was not criticised as being a bad combination, though reduced to the simplest elements and the broadest terms, and without any precise definition of combination.

[In the succeeding examples the selections have been made not only to illustrate views of the courts and Patent Office upon claims, but also to present forms of claims for various kinds of inventions which have been accepted as properly stating the invention or have been criticised as the context sufficiently indicates.]

In re Iagan, 162 O. G. 538.

The Commissioner of Patents held a claim of twenty-three typewritten lines in length and which was a complete inventory of all the elements contained in applicant's device, as prolix and improper and also that it was not necessary to specifically apply any citations in such a case.

He quotes as follows from a previous decision:

"This is a remarkable claim. It is for a combination consisting of no less than fifteen essential elements, the absence of any one of which would destroy it, and any fourteen of which might be used with impunity. It contains an inventory of ev.

ery minute detail of the apparatus. It is difficult to see how it could have been made more specific, unless it had included, as an additional element, the solder by which the parts are put together.

“It is scarcely necessary to say that no combination precisely similar is to be found in the Office. The fifteen elements here united were never united before, and probably never will be again. The applicant himself, in the next machine which he constructs, will doubtless omit one or more of them, and so destroy his combination and avoid his own patent.” (Ex parte Lawrence, 1869 to 1871 C. D. 83.)

Langan v. Warren Axe & Tool Co., (Third) 184 Fed. 720, 107 C. C. A. 631.

(Patent No. 595,181.) Combination claim held invalid, affirming the lower court because the combination was held old though one of the elements was accepted as probably new.

While in the Patent Office the applicant amended his claim, which was criticised as incomplete, and this claim was then allowed:

“The combination with the pair of grab-hooks, each consisting of a shank having an eye at its front end and at its rear end having a projecting perforated ear, immediately in front of which latter is located an angularly-disposed driving-tooth, said shank being widened above its tooth for the purpose of producing an increased impact-surface, of a draft device connected with the eyes at the front ends of the shanks, substantially as specified.”

The court said:

“Not only is the claim for a combination foreign to what is set forth in the specification, but there is no new coaction or cooperation of the elements of the combination. The grab-hooks and draft appliance of the patent, in combination, coact as grab-hooks and draft appliances have always done. The grab-hook of the patent, by reason of its peculiar construction and form, is very probably an improvement of no little utility. But the patentee can not, merely because of that fact, have a patent for a combination which shall have, as one of its elements, a pair of such grab-hooks. He did not invent the combination. He invented, if he invented anything, an improved grab-hook. Indeed, this is conceded by the patentee’s counsel, and he argues that because the Patent Examiner, when the original claims were before him, said that “claim 6 is incomplete without the links, and the eye in the end of the shank is useless without the other elements,” the claim as it now stands should be construed as one describing, as the real invention, a specific form of grab-hook. Manifestly, we cannot so construe it. The claim is for a



combination of grab-hooks, of a peculiar form, and a draft device. We are not at liberty to distort its plain language. It may be, as the patentee's counsel declares, that the criticisms of the Examiner led to the present form of the claim. But if the Examiner's criticisms were unsound, the patentee could have had them reviewed by an appropriate appeal. This is not a case where there was a mere change of phraseology to suit the views of an Examiner. The structure of the claim was remodeled in a fundamental respect. It was changed from a claim for an improved grab-hook to a claim for a combination of an improved grab-hook and a draft device. We are therefore compelled to read the claim as one for a combination, and not for an improved grab-hook."

This case does not rest upon precedents; and, in so far as it means that a claim for new combination may not recite the old devices with which it is employed, is not supported by the authorities with the possible exception of such cases as the following: *In re McNeil* and *In re Ratican*.

*In re McNeil*, 20 App. D. C. 294, 100 O. G. 2178, 1902 C. D. 563.

The claim in this case read as follows:

"5. The combination, in a sewing-machine, of a suitable trimmer, stitch-forming mechanism in rear of said trimmer including a plurality of eye-pointed thread-carrying devices forming parallel rows of stitches upon opposite sides of the line of feed and eye-pointed thread-carrying devices reciprocating back and forth between said opposite rows of stitches and forming intermediate interlocking rows of stitches, substantially as described."

The court quotes with approval the opinion of the Assistant Commissioner affirming the preceding tribunals. The Assistant Commissioner said:

"It is old in a sewing-machine to combine a trimmer with a stitch-forming mechanism. This combination is shown in patent to Borton and Willcox. In this patent the trimmer is arranged in advance of the stitch-forming mechanism in the line of the seam, and said stitch-forming mechanism includes devices for forming two rows of stitches.

"The particular stitch-forming mechanism shown by appellant and which constitutes an element in the combination of his claims is not separately claimed by the appellant. Such a stitch-forming mechanism is shown, described, and claimed in the patent to Woodward."

\* \* \* \* \*

"Borton and Willcox having invented the combination of a trimmer with a stitch-forming mechanism, it is not invention to

combine a trimmer with another stitch-forming mechanism whether the stitch-forming mechanism be new or old. No new result is accomplished by appellant which differs in kind from the result accomplished by Borton and Willcox. There is no special coaction between the particular stitch-forming mechanism and the trimmer. Each acts in its own way and is not affected by the other and performs its function in the combination irrespective of the other. I think that what the appellant has done is within the province of the mechanic and does not amount to invention."

The court also cited *Durham v. Seymour*, 6 App. D. C. 78, 71 O. G. 601, 1895 C. D. 307, and cases cited and reviewed therein. It will be observed that the opinion says that the combination would not be invention "whether the stitch-forming mechanism be new or old." This statement, however, was not necessary to the decision because the stitch-forming mechanism was found in a prior patent. The meaning of the opinion, however, appears to be that if a new stitch-forming mechanism had been claimed in combination instead of separately it would not have been patentable.

In *re Ratican*, 36 App. D. C. 95, 162 O. G. 540:

"4. A traveling street washing and sprinkling apparatus comprising a wheel-truck having a water-tank thereon and supply and delivery pipes for said tank, and a sector-shaped delivery-nozzle on the delivery-pipe, mounted to turn universally, said delivery-nozzle having a plurality of comparatively small apertures in its circular walls, said apertures being arranged in parallel rows, and the apertures of one row being arranged to overlap two adjacent apertures in another row."

The court said:

"One nozzle of the prior art was effective for street-cleaning and another for street-sprinkling.. When this nozzle is used for either purpose it operates exactly as did the nozzle of the prior art. If appellant has made an improvement upon the nozzle of the prior art he is entitled to be protected in the use of his invention, but he is certainly not entitled to a patent on a new combination merely because he has improved a single element of that combination. (*In re McNeil*, 20 App. D. C., 294, 1902 C. D. 562.)"

The principle of the three preceding cases will probably be applied only in rare cases, and cases of doubtful patentable novelty.

It has grown, however, to be common practice to imbed a feature of novelty in an elaborate combination claim. Sometimes this results from a lack of knowledge or appreciation of the scope of the prior art; sometimes from a purpose to give

greater dignity to a slight advance in the art; and sometimes to better describe the structure of a rival which the patent is expected to reach. An example is found in *Torrey v. Hancock*, (Eighth) 184 Fed. 61, 107 C. C. A.

The claim of patent No. 556,972, reads as follows:

"In a rotary plow, the combination with a plow-beam, of a box-bearing arranged on the plow-beam, an axle rotatable in the box-bearing, a plowing-disk secured to the said axle, rotated solely by the natural draft thereof and the friction of the soil, set diagonally to the line of draft and inclined out of a vertical plane for cutting the furrow and turning the soil therefrom, a furrow-wheel mounted on an axle at the same side of the plow-beam as the plowing-disk and arranged in advance thereof, an arm pivoted to the rear portion of the plow-beam and provided with a caster-wheel arranged in rear of the plowing-disk, and a stop device for limiting the swinging motion in one direction of the arm carrying the caster-wheel, said furrow-wheel and caster-wheel being inclined for resisting the side pressure of the plowing-disk, substantially as described."

The court found that the emphasized phrase was the single feature of novelty and, in fact, that the novelty really lay in the phrase "set diagonally to the line of draft." Finding the feature old in various devices the patent was held void.

In interference causes in the Patent Office the issues were formerly drawn by the Examiner with the view of stating broadly the common patentable idea of means or method of the interfering parties. The present practice is to suggest claims taken from one or more of the applications, so that all parties shall have the same claims. Not infrequently a claim such as is set forth above in *Torrey v. Hancock* is made the issue of an interference. Once such an issue has become the subject of testimony it is the position of the Patent Office that there can be no construction or interpretation of the claim. Therefore, he who proves the first invention of the precise combination set forth in a claim of this character is held the first inventor though the other party might have shown himself first to use disks in a rotary plow of the same type "set diagonally to the line of draft and inclined out of a vertical plane." In brief, the Patent Office in the examination of an application is, in theory, interested in the invention. In an interference cause it must accept the phraseology of the claim in issue. The courts theoretically are concerned with the actual invention; and practically in case of a narrow or doubtful invention hold the inventor to the precise terms of his claim, but in a broad or a primary or pioneer invention, or a "meritorious" one, endeavor to ascertain the actual feature of the invention or what the inventor actually did in-

vent and what he had in mind in drawing his claims. There are modes of practice and procedure which enable the skilled practitioner to reach a fair conclusion, but the tendency of the times appears to be to more simplicity and precision in these matters, so that patents shall seldom require interpretation or construction and so that in any cause, whether in the Patent Office or without, the proceeding may be based upon a clear statement of the actual invention, with only the limiting clauses necessary or desirable to place the invention in its proper relation to the art.

In *Roberts v. H. P. Nail Co.*, 53 Fed. 916 (Taft, Cir. J.), cited with approval in *Canda v. Michigan*, 124 Fed. 486, 61 C. C. A. 194, and *Goshen v. Bissell*, 72 Fed. 67, 19 C. C. A. 13, the following respective claims of patents Nos. 426,067, and 444,652, were considered:

"1. In metal-coiling apparatus, a rotary coiling-cone having a longitudinal rib with a lateral flange, substantially as and for the purposes described."

"3. In metal coiling apparatus, a rotary coiling-cone having an exposed outer surface along which the rod travels, a hollow collar, and driving-gear, substantially as and for the purposes described."

It was contended by the defendant that these claims did not cover an operative combination because they covered only one part of the machine required to perform the work. But the court held, following *Wells v. Jaques*, 5 O. G. 364, that, in a combination patent, it is permissible for the patentee after claiming the whole machine to claim a combination of fewer parts than the whole even though taken alone, it may not result in any known or useful product.

*Hancock Inspirator Co. v. Jenks*, 21 Fed. 911 (1884, Mich. Brown, J.). The defendant objected that the claims for the injector did not include as elements an induction tube and a chamber which, it was admitted, are essential to the operation of the device. The court remarked, however, that "the construction would be equally inoperative without a boiler to furnish the steam and a well to supply the water, and a pipe leading to and from the boiler." And the court upon this point said in terms which well define the general principle:

"But, in drawing the claims for a combination patent, we do not understand it to be necessary to include any elements except such as are essential to the peculiar combination, and are affected by the invention. Other portions of the machine are usually shown in the drawings to exhibit their relation to the patented combination, and they are wholly unnecessary to the validity of the claims. Indeed, it is manifest that the more ele-

ments introduced into the combination, the easier it would be to evade the patent; since, to sustain a suit for infringing a combination, it must be made to appear that the defendant used every element of such combination, however immaterial it may be. *Vance v. Campbell*, 1 Black (U. S.) 429."

(And to the point that a combination or subcombination need not be in itself operative, but may require associated features to complete the whole result, see, for example, *Railroad Co. v. Du Bois*, 79 U. S. 47, 20 L. ed. 265; *Parks v. Broth*, 102 U. S. 96, 26 L. ed. 54; *Thomson-Houston v. Black River*, 135 Fed. 759, 68 C. C. A. 461; and the following example and cases cited.)

*Clark Blade & Razor Co. v. Gillette Safety Razor Co.*, (Third 1912), 194 Fed. 421, 114 C. C. A. 383. The second claim of Gillette patent No. 775,134 reads as follows:

"As a new article of manufacture, a detachable razor-blade of such thinness and flexibility as to require external support to its cutting edge."

It will be observed that this claim states the invention so as to indicate the necessity of other parts to make it useful or operative. The court sustained the patent and on this point said:

"As to our fifth conclusion, we note it should be added that claim 2 is not invalid because not for an operative device, for, if such were the law, patentability must have been denied to Elias Howe for "the grooved and eye-pointed needle" which constituted his seventh claim. (*Howe v. Williams*, 2 Fish. Pat. Cas. 395, Fed. Cas. No. 6,778), and of which it was said in *Deering v. Winona*, 155 U. S. 286, 39 L. ed. 153, 15 Sup. Ct. 118:

"The invention of a needle with the eye near the point is the basis of all the sewing machines used, but the methods of operating such a needle are many; and, if Howe had been obliged to make his own method a part of every claim in which the needle was an element, his patent would have been practically worthless."

*Gold v. Gold*, 34 App. D. C. 229, 150 O. G. 570, 1910 C. D. 269.

This case embodies a discussion of the jurisdiction of the Court of Appeals, and especially with reference to the right to make claims, and also upon the question of *res adjudicata*. The claims themselves are interesting as an example of broad and almost functional statements, yet clearly stating the ideas of invention involved:

"1. In combination, an admission-pipe carrying a supply of steam at pressure greater than atmospheric and a steam-heating system taking steam from the [said] admission-pipe and circulating it, and including thermostatically-controlled means for de-

termining whether it shall be circulated at admission-pipe pressure or at approximately atmospheric or lower pressure and for automatically maintaining it at such determined pressure.

"2. A steam-heating system including in combination an admission-valve and an exhaust valve, both under automatic control and adjustable by hand to cause a circulation of steam at a high pressure or at a low pressure, at will.

"3. In combination, an admission-pipe for carrying a supply of steam at high pressure, and a steam-heating system including in combination an admission-valve for taking steam from [the] admission-pipe, and an exhaust-valve, both under automatic control by the temperature beyond the exhaust-valve, and each adapted to be held open so as to cause a circulation at high or low pressure at will.

\* \* \*

"5. A steam-heating system including in combination an admission-valve and exhaust-valve, both valves being under automatic control, and hand-operated means for opening the exhaust valve and neutralizing the automatic control thereof.

"6. A steam-heating system including in combination an admission-valve, an exhaust-valve, both valves being under automatic control, and means for neutralizing such control of the admission-valve.

"7. A steam-heating system including in combination an admission-valve, an exhaust-valve, both the [said] valves being under automatic control by the steam, and means for neutralizing such control of either of the [said] valves at will.

\* \* \*

"10. In combination, an admission-pipe carrying a supply of steam at pressure, greater than atmospheric, and a steam-heating system including an admission-valve and an exhaust-valve, both under automatic control, and means for converting the [said] system into an admission-pipe pressure system, or an atmospheric pressure system at will."

\* \* \* \* \*

Note—The term "said" is frequently employed in claims, but is generally unnecessary or tautological, as indicated by the brackets here introduced to illustrate the suggestion.

Forrest City Foundry & Mfg. Co. v. Barnhard, (Sixth) 176 Fed. 561, 100 C. C. A. 197.

(Patent No. 580,151, Barnard, April 6, 1897.) Valid. The claims were as follows:

"1. In a nozzle for spraying liquids a chamber substantially

circular in one plane of section provided with an outlet-port and with an inlet-passage, the axis of which lies in the plane of a circular section and between a diameter and a tangent of such section; whereby a rotary motion is imparted to the liquid in the chamber by the force of the inflow, which motion is retained after it escapes from the chamber, substantially as described.

\* \* \*

“3. A spraying-nozzle comprising a chamber of approximately circular form in cross-section, provided at its periphery with a tangential inlet-port, and at its center with an outlet-port, the axis of which is transverse to that of the inlet-port.”

\* \* \*

(See drawings in opinion.)

The wording of these claims indicates that the medium being acted upon by the machine was constantly in mind, and that the structure was arranged with reference to the laws governing liquids.

Morgan Engineering Company v. Alliance Company, (Sixth), 176 Fed. 100, 100 C. C. A. 30.

(Patent No. 791,951, Shem, March 17, 1905, for Cranes.) Held to involve invention and to have been infringed. Claims 1 and 2, however, held void because too broad. The following claims indicate the two classes and the subject-matter:

“1. A crane having a bridge with main hoisting-trolley mounted upon the main girders of said bridge, and a supplementary trolley mounted upon supplementary girders independent of said main girders, substantially as specified.

\* \* \*

“3. A crane having a bridge with main and supplementary hoisting-trolleys, the main hoisting-trolley being mounted upon the main outer girders of the bridge, and the supplementary trolley being mounted upon supplementary interior girders, the hoisting-chains from the main trolley depending between the said main and supplementary girders, substantially as specified.”

On patentable novelty the court held, in effect, that the re-organization of a crane having main and supplementary trolleys so that the hoisting-chains from the main trolley are placed inside instead of outside the girders supporting the main trolleys required invention.

Greenwald Bros., Inc. v. Enochs et al. (Third), 183 Fed. 583, 106 C. C. A. 351.

(Patent No. 662,714). Held valid and infringed, reversing the lower court:

"In a skirt, the combination substantially as described of a hip portion of elastic material, a skirt portion secured to the bottom edge of said hip portion, and a band of greater elasticity than said hip portion at a point near the upper edge thereof."

The court referred to this invention as one in a long developed art in which there was meagre sphere for invention. "Where a field is barren, a marked improvement in product evidences corresponding originality in making such improvement."

The court then proceeds to point out the two especial points of novelty, first in using the jersey as a section of a skirt and then having the waist band of greater elasticity than the hip portion, stating the practical advantages.

National Hollow Brake-Beam Co. et al. v. Interchangeable Brake-Beam Co. et al. (Eighth), 106 Fed. 693, 45 C. C. A. 544.

This case presents an elaborate review, citing numerous cases and constituting, in effect, an essay on several phases of patent law. It presents a patent as a contract with the government; affirms the doctrine that a patent is not anticipated by a similar device in a remote art not analogous; that the proof of prior use must be beyond reasonable doubt; that a new combination of old elements may be patentable; that extensive use while it may be persuasive evidence of novelty is not conclusive evidence of novelty; that the mere function of a device is not patentable; but that the means by which the function is performed are patentable; that a combination of an earlier combination of mechanical elements and their function is not patentable; that a patentee is entitled to all uses of his invention whether known to him or not; that one who invents and secures a patent for a machine or combination which first performs a useful function is protected thereby against all machines or combinations which perform the same function by equivalent mechanical devices and conversely may have the same rule applied in bar to his claims, while one who merely makes or secures a patent for a slight improvement can reach only those whose very device or improvement he describes or claims or mere colorable evasions thereof; that the term "mechanical equivalent" when applied to the interpretation of a pioneer patent has a broad and generous signification and when to a narrow patent, an equally narrow meaning, in the great majority lying between these two extremes; that the same rules apply to all classes of invention; that mere changes of form or of some of the mechanical elements of a combination will not avoid infringement where



the principle of the patented invention is adopted, unless the form of a machine or the elements changed is the distinguishing characteristic of the invention; that ordinarily independent inventions are patentable where the advance in the art has been gradual; that a patentee is estopped from maintaining that the amended claim covers the devices shown in the references against the canceled claim, and that it has the breadth of the claim rejected, but that this is the limit of the estoppel and that he is not prevented from claiming and securing every new and useful improvement not disclosed by the references; that the description of details not claimed is not a limitation upon the claims; that a reference letter does not limit the claim to the specific form of device or element shown, unless that particular form was essential to, or embodied the principle of, the improvement claimed; that the interpretation which sustains and vitalizes the grant of a patent should be preferred to that which strikes down and paralyzes it; that infringement is not avoided by the use of different means of fastening or operating a combination which is different from those which are pointed out for the purpose but which are not claimed in the patent; that the absence of an element of a combination avoids infringement.

Of the several patents involved the claims of two were held valid and infringed, while the others were held to be either invalid or not infringed. The four cardinal claims were the second claim of patent No. 361,009 and the first, second, and seventh claims of patent No. 480,194, which read as follows:

“(2) The combination, in a brake beam, of a hollow beam, a strut, end plugs or caps, 8, and a truss rod, 3, which extends through the caps, 8, and is provided with nuts, substantially as and for the purpose specified.”

“(1) A metallic brake beam, consisting of a compression member, a tension member, and an interposed strut; the compression member having a camber, and the beam structure containing means of adjustment whereby the camber of the compression member is produced and the resiliency of the beam made available.

“(2) A metallic brake beam, consisting of a hollow compression member, a tension member, and an interposed strut, the compression member having a camber, and the beam structure containing means of adjustment whereby the camber of the compression member is produced and the resiliency of the beam made available.”

“(7) In a trussed brake beam, the combination of a tension member having threaded ends and nuts therefor, a strut, and a

cambered compression member, which maintains the tension of the parts and prevents the rotation of the nuts, substantially as specified."

It was held that the combination which produced results set forth in the three claims of patent No. 480,194 was claimed in the second claim to the same inventor quoted from the patent 361,009 because in the earlier patent there was present the combination by which the resilience or camber in the beam could be utilized and whether or not the inventor had previously utilized it was immaterial. The claims of patent No. 480,194 were therefore held invalid by reason of the previous patent to the same inventor 361,009.

**Process; Method.**—A process is an action or a series of actions, a mode of operation; referable to various mechanisms and not confined to one.

It may not be a mere result or function, nor the mere statement of a principle. A new art or mode, that is, a new process or a new method, must be the result of invention or discovery and must meet all the statutory requirements of patentable novelty. These are the substantial maxims of the patent law. The terms "process" and "method" are synonymous, but, as hitherto observed there is a nicety in the employment of these words, "process" being customarily applied to designate some chemical or elementary operation, while "method" or "mode" are employed with reference to a sequence of acts, a manipulation of mechanisms, or a modification of the usual operations of existing mechanisms involving invention. This is not a legal distinction, but merely a rhetorical suggestion.

In the consideration of process and method claims it is advisable to decide if the claims define an action or a mode. In the customary cases which recite purposes and effects as well as the act it is ordinarily advisable to see that the process or mode is defined and is patentable independently of the statement of function and instrumentalities. There are, however, classes of claims, such for example, as "mechanical method" claims which may require for accurate statement either a recitation of purpose or function or instrumentality, as is the case in occasional machine and article claims.

In *O'Reilley v. Morse*, 15 How. (U. S.) 61, 14 L. ed. 601, the eighth claim read as follows:

"Eighth. I do not propose to limit myself to the specific machinery, or parts of machinery, described in the foregoing specification and claims; the essence of my invention being the use of the motive-power of the electric or galvanic current, which

I call electro-magnetism, however developed, for marking or printing intelligible characters, signs, or letters, at any distance, being a new application of that power, of which I claim to be the first inventor or discoverer."

This claim was held invalid by the Supreme Court of the United States, because to the use of a law of nature, on the ground that a principle is not patentable, that no one can have a monopoly of a power or law of nature. It has been suggested that if Morse had put his claim in the following form, it might have been sustained:

"The method of conveying intelligence to a distance, which consists in conducting a current of electricity from one place to another, and alternately establishing and interrupting or diminishing the current and causing the intervals to be marked or otherwise indicated."

This is on the suggestion of the following claim sustained by the Supreme Court in *The Telephone Cases*, 126 U. S. 1, 31 L. ed. 863.

"Fifth. The method of, and apparatus for, transmitting vocal or other sounds telegraphically, as herein designated by causing electrical undulations similar in form to the vibrations of the air accompanying said vocal or other sounds, substantially as set forth."

There has been some question (though academic) of the form of this telephone claim independently of the now objectionable phrase "and apparatus for." It has been thought that the telephone claim might have been more effectively or safely worded, that is worded so as to have been defended more easily, if it could have involved the basic principles of a continuous contact between the diaphragm and the electric circuit, or could have used an appropriate phrase such as was afterward so aptly employed to define the microphone patents, namely, "variable resistance." The claim as it was stated, however, rested upon the fact that it did not cover all electrical undulations in telephony, but covered the production of a certain kind of undulation which should follow not only the variations of pitch and tone of the human voice, but of also those of "character."

One of the early cases discussing a process claim is that of *Tilghman v. Proctor*, 102 U. S. 707, 26 L. ed. 279, in which the claim of the patent read as follows:

"The manufacturing fat acids and glycerine from fatty bodies by the action of water at a high temperature and pressure."

The claim in this famous case was based upon the chemical principle or scientific fact that the elements of neutral fat re-

quire to be severally united with an atomic equivalent of water in order to separate from each other and become free. The court held that the claim did not merely state that principle, but a process of applying the principle.

It is obvious that other claims might have been based upon the claim made, and if the claim were to be drawn today it would probably be stated in some such terms as:

"The process of manufacturing fat acids and glycerine which consists in subjecting a mixture of fat and water to a high temperature, under pressure, substantially as and for the purposes set forth."

Royer v. Coupe, et al, 146 U. S. 524, 36 L. ed. 1073. The claim read as follows:

"The treatment of the prepared rawhide in the manner and for the purpose set forth."

It was held to mean what should have been phrased in the form of a claim as follows:

The process of preparing rawhide which consists in the removal of the hair from the hide by means of sweating, drying the hide hard, then softening the hide by slightly soaking in water, fulling the hide, stuffing it with twenty parts of tallow, two parts of wood-tar, and one part of rosin, fulling the hide a second time repeatedly moistening the hide with water and stretching and cutting into belting, substantially as described.

It will be noted that a composition is here included.

The Supreme Court of the United States in *Underwood v. Gerber*, 149 U. S. 224, 37 L. ed. 710, and *Brigham v. Coffin*, 149 U. S. 557, 37 L. ed. 845 (hereafter discussed), has held that a composition adds no weight to a process claim. This is somewhat in the line of the decisions that a new element does not add patentability to an old combination, as in *Langan v. Warren Axe and Tool Co.*, and in *re McNeil*, supra.

The view, however, is more apt, it is thought, with reference to process claims than with reference to combination claims. It has been suggested that *Langan v. Warren* and *McNeil* are not in accord with the general trend of authority, and even in process claims, as examples will illustrate, it may be that the recitation of some new compound and its mode of action may help to set forth a new and patentable process.

*Weatherhead et al. v. Coupe et al.* 147 U. S. 322, 37 L. ed. 188.

(Patent No. 213,323.) Not infringed, claim 3 criticised. The claims read as follows:

1. The combination of a friction table or beam, over which the hide is drawn, a stretcher, substantially as described, and a

revolving roller, to which the hide is secured and around which it is wound as the hide is drawn over the friction-beam and stretcher, substantially as set forth.

2. The combination of a revolving roller, to which the hide is secured and around which it is wound, a laterally-yielding stretcher, and a laterally-yielding friction table or beam, substantially as described.

3. The improvement in the method of stretching hides, which consists in dragging the hide over a stretcher, and also over a friction table or beam, by means of a revolving roller, to which the hide is secured, as described, whereby as the hide is passed over the table or beam the thicker portions of the hide are detained or made to lag by pressure applied to such thicker portions, to increase at such points the friction between the hide and the table, substantially as specified.

The court said:

"It was correctly held by the circuit court that the third claim is for the exclusive right of using the machine referred to in the first claim and that it can not be infringed otherwise than by infringing the first claim."

That is to say, claim 3 does not really cover a method or a combination of mechanism having a certain function, but is a claim for the mere function of the machine.

Lawther v. Hamilton et al. 124 U. S. 1, 31 L. ed. 325. Claim of patent No. 168,164:

"The process of crushing oleaginous seeds and extracting oil therefrom, consisting of the following successive steps, viz., the crushing of the seeds under pressure, the moistening of the seeds by direct subjection to steam, and, finally, the expression of the oil from the seed by suitable pressure as and for the purpose set forth."

Of this claim Justice Bradley, speaking for the court, said:

"And why is not such new method of obtaining the oil and making the oil-cakes a process? There is no new machinery. The rollers are an old instrument, the mixing machinery is old, the hydraulic press is old. The only thing that is new is the mode of using and applying these old instrumentalities. And what is that but a new process? This process consists of a series of acts done to the flaxseed. It is a mode of treatment. The first part of the process is to crush the seed between the rollers. Perhaps, as this is the only breaking and crushing of the seed which is done, the rollers are required to be stronger than before; but if so, it is no less a process."

The case of Risdon v. Medart, 158 U. S. 68, 39 L. ed. 899, 15 Sup. Ct. 745, has hitherto been discussed.

That case was clearly intended to establish the rule that only such processes as involved chemical or similar elemental action or the action of an agency of nature are patentable.

This rule was followed by two circuit courts of appeals and at least in two other circuit courts as previously cited. Reference has also hitherto been made to the article in 29 American Law Review (July-August, 1895) citing numerous cases in which the supreme court and other courts had approved and sustained claims of patents for mechanical methods. Reference is also there made to the case of Union Paper Bag Co. v. Waterbury, 70 Fed. 240, 17 C. C. A. 84, in which the Circuit Court of Appeals for the Second Circuit (sitting with Justice Brown who wrote the opinion in *Risdon v. Medart*), refused to accept as sufficient to dispose of a claim the ruling of *Risdon v. Medart*.

Subsequently in *Westinghouse v. Boyden*, this matter came up before the Supreme Court of the United States, as reported at 170 U. S. 537, 42 L. ed. 1136.

By a bare majority of one (Justice Shiras, Brewer, Gray and McKenna dissenting) the court decided that though Westinghouse was unquestionably the discoverer of the function and of the process described, the patent (although admittedly for a pioneer invention) must be limited to the mechanical combination of the patents or absolute equivalents.

The claim in question read as follows:

"In a brake mechanism, the combination of a main air-pipe, an auxiliary reservoir, a brake-cylinder, and a triplevalve having a piston, whose preliminary traverse admits air from the auxiliary reservoir to the brake-cylinder, and which by a further traverse admits air directly from the main air-pipe to the brake-cylinder, substantially as set forth."

The Supreme Court in this case after citing several cases said:

"This rule was clearly laid down in the leading case of *Corning v. Burden*, 15 How. (U. S.) 252, in which Mr. Justice Grier, delivering the opinion of the court, drew the distinction between such processes as were the result or effect of 'chemical action, by the operation or application of some element or power of nature, or of one substance to another' and the mere result of the operation of a machine."

Then coming to a conclusion upon this the court, while stating that there was no desire to qualify previous holdings with respect to pioneer patents did, in effect, limit this pioneer invention to the structure presented by the patent.

The court in referring to Mr. Justice Grier's opinion in *Corning v. Burden*, must have overlooked the fact that the same justice at the same term read the opinion in *O'Reilly v. Morse*, in which, in dwelling upon the proper interpretation of broad patents, he said:

"The great art of printing, which has changed the face of human society and civilization, consisted in nothing but a new application of principles known to the world for thousands of years. No one could say it consisted in the type or the press, or in any other machine or device used in performing some particular function, more than in the hands which picked the types or worked the press. Yet if the inventor of printing had, under this narrow construction of our patent law, claimed his art as something distinct from his machinery, the doctrine now advanced, would have declared it unpatentable to its full extent as an art, and that the inventor could be protected in nothing but his first rough types and ill-contrived press."

In the dissenting opinion in *Westinghouse v. Boyden*, Mr. Justice Shiras says:

"I can not assent to what is perhaps rather intimated than decided in the opinion of the court,—that what is called a 'process,' in order to be patentable, must involve a chemical or other similar elemental action."

And in conclusion gave a definition which had previously been accepted by the court and has since been applied to the proper construction of the claims of a pioneer patent. It will be observed that the Supreme Court in *Westinghouse v. Boyden* interpreted the functional clause of this claim as making it in effect a mechanical method claim, and it was the purpose of Mr. Justice Brown, undoubtedly, to put the ban upon this form of claim as well as upon the mechanical method claim.

As hitherto noted, however, the same court, after dividing nearly evenly in the *Brake* case, finally, in the *Expanded Metal Co. v. Bradford*, 214 U. S. 365, 53 L. ed. 1035, unanimously sustained a mechanical method having a functional clause claim, so that it would seem that *Risdon v. Medart* and *Westinghouse v. Boyden* need no longer be matters of deep concern.

The claim in the *Expanded Metal* case read as follows:

"The herein-described method of making open or reticulated metal work, which consists in simultaneously slitting and bending portions of a plate or sheet of metal in such manner as to stretch or elongate the bars connecting the slit portions and body of the sheet or plate, and then similarly slitting and bending in places alternate to the first-mentioned portions, thus producing

the finished expanded sheet metal of the same length as that of the original sheet or plate, substantially as described. Long before these cases, however, the correct principle had been followed by the courts and the Patent Office. One interesting example will suffice.

Evans W. Shippen, 1875, C. D. 126.

The claim in this application read as follows:

“The improvement in the art of manufacturing wooden shoes by machinery, hereinbefore set forth, which consists in cutting, shaping, and boring the blank by submitting it successively to the operation of mechanism substantially such as set forth.”

Certainly no balder mechanical process could be presented than in this case. While it is true that at this day some further elaboration of this claim might be required to clearly state the invention, the meaning of the claim would be substantially the same.

It is, therefore, somewhat remarkable that the Commissioner of Patents should, in 1875, have so precisely stated the proper view of the law which was afterward to be so entirely mistaken in *Risdon v. Medart* by the Supreme Court, and afterward brought back to the view of this early case and the authorities upon which it rested by the same court in the *Expanded Metal Case*.

“What is set forth is a certain well-defined order of mechanical operations. The successive steps are all adapted to each other, and the operation performed on the block at one step fits it to receive the operation to be performed upon it at the next; and although the operation is wholly mechanical, and requires a peculiar set of instruments, yet the order in which the successive operations are performed is not inherent in the machinery.

The function of a machine is that operation which, when set in motion, it inevitably performs. Thus it is the function of a grinding-mill to comminute whatever is passed through it, of a lathe to give shape to bodies placed in it, or of an auger to bore. But where the operation of the machine, or of a series of machines, is supplemented by some new method of operation not contemplated in the construction of the machine, and not the inevitable result of its operation, and the new method subserves a new and useful purpose, it may amount to a patentable process, even though the operation depend necessarily upon the machinery. Such was the process claimed in the *Voelter* patent sustained by the court (5 Fish. (U. S.) 340), in which the mill or stone upon which the wood was to be reduced to fibre was old, and the novelty consisted in placing the wood in such a way that



the fibre was torn transversely—the change in which the invention consisted being solely in the method of using the machine, which method was not contemplated originally in making the machine, did not necessarily result from its operation, required evident invention, and produced a new and improved result.”

(See also, for full discussion and correct conclusion, *In re Weston*, 17 App. D. C. 431, 94, O. G. 1786, 1901 C. D. 290.)

*Ex parte Young*, 46 O. G. 1635, 1889 C. D. 116. The claims in this case, allowed by the Commissioner, are illustrated by the following:

“1. As an improvement in the art of manufacturing boxes from a strip of paper, etc., the described method of preparing the connected blanks for pasting and folding, consisting in intermittingly advancing the strip, and, during intermissions in its advance movement, cutting and creasing to successively and completely form the respective blanks of a series of unfolded, unpasted blanks connected at their ends by narrow necks, substantially as set forth.

“2. As an improvement in the art of manufacturing boxes from a strip of paper, etc., the described method of preparing the connected printed blanks for pasting and folding, consisting in intermittingly advancing the strip, successively printing the respective blanks during intermissions in the advance movement of the strip, and cutting and creasing the other blank also during intermissions in the advance movement of the strip to successively complete the respective blanks of a series of unfolded unpasted blanks connected at their ends by narrow necks, substantially as set forth.”

*Eastern Paper Bag Co. v. Standard Paper Bag Co.*, 30 Fed. 63, 41 O. G. 231, (cited in *Ex parte Young*).

The claim of patent No. 258,272 read as follows:

“The herein-described improvement in the art or method of manufacturing satchel-bottom paper bags from a tube, which consists first in forming the diamond fold, then cross-folding the leading corner of the diamond fold, and subsequently completing the satchel-bottom by cross-folding the rearmost corner of the diamond fold, and together with it the main body of the bag-blank, on the line of this second cross-fold, substantially as and for the purpose described.”

*Globe Nail Co. v. United States Horse Nail Co.*, 19 Fed. 819. The claim in Reissue patent 5,207 reads as follows:

“The process of curving the bodies of nails and beveling their points by spreading the metal laterally, and afterward forcing them through an open die to shear off superfluous metal, substantially as and for the purpose specified.”

In the two preceding much quoted and approved cases purely mechanical method claims were held valid, because they involved invention.

Dayton Fan & Motor Co. v. Westinghouse Electric & Mfg. Co., (Sixth) 118 Fed. 562, 55 C. C. A. 390.

The Tesla patents Nos. 511,559 and 511,560, December 26, 1893, held valid and infringed and not anticipated by the inventor's previous patent No. 416,193. The court held that an inventor may be entitled to a patent for the method or process of producing a new and useful result and also a patent for a mechanical means by which the result is produced when the method or process is susceptible of being performed by other known means, and the means are of invention and otherwise patentable.

The claims in suit of patent No. 511,559, are as follows:

"1. The method of operating motors having independent energizing circuits, as herein set forth, which consists in passing alternating currents through both of the said circuits, and retarding the phase of the current in one to a greater or less extent than in the other.

"2. The method of operating motors having independent energizing circuits, as herein set forth, which consists in directing an alternating current from a single source through both circuits of the motor, and varying or modifying the relative resistance of self-induction of the motor circuits, and thereby producing in the currents differences of phase. as set forth."

The discussed claims of patent No. 511,560, read as follows:

"1. The combination with a source of alternating currents, and a circuit from the same, of a motor having independent energizing circuits connected with the said circuit, and means for rendering the magnetic effects due to said energizing circuits of different phase, and an armature within the influence of said energizing circuits.

"2. The combination with a source of alternating currents, and a circuit from the same, of a motor having independent energizing circuits connected in derivation or multiple arc with the said circuit, the motor or energizing circuits being of different electrical character, whereby the alternating currents therein will have a difference of phase, as set forth.

"6. In an alternating-current motor, the combination with the field-magnets or cores and independent energizing currents of different active resistance, and adapted to be connected with the line or transmission circuit, of an armature wound with closed energizing coils or conductors, as set forth."

It has been said that this case is an illustration of the manner in which the criticisms of the Supreme Court in *Risdon v.*

Medart and Westinghouse v. Boyden may be avoided. It will be observed that in this case the patentee covered both the mechanism and the method stating the method in such manner as to clearly indicate the distinction between the function of the patent and the method of the claims. The two patents were assumed to be for different inventions.

**Article; Product; Composition.**—An article of manufacture, or a new product to be patentable, must have certain characteristics which distinguish the new thing from the prior state of the art, from antecedent articles or products. The claim should define these characteristics, and not the process or mode by which the article is produced. There may arise an instance in which a new article can be defined only by the process of making it, but the cases seldom present a satisfactory example.

A claim for a composition should recite the ingredients, agents, or materials, contained in the composition. As a rule, it is not essential, nor indeed good practice, to recite the proportions, which are of course stated in the specification. But in the rare cases where the essence of the invention lies in the proportions, they must of course be stated.

The recitation of a composition in a claim for an article of manufacture does not protect the composition, though the composition as a whole become a part of the article. (See *Underwood v. Gerber* [post].)

In *Ex parte Painter*, 57 O. G. 999, 1891 C. D. 200, it is stated that there may sometimes arise an article which can be defined only by the process of making it. As an example the following claim is cited by the Commissioner from *Globe Nail Co. v. United States Horse Nail Co.*, 19 Fed. 819: "A nail made by punching or cutting from hot-rolled ribbed bars of metal a headed blank substantially as described, and by elongating, hardening, and compressing the shanks of such blanks by cold-rolling from the head to the point, thereby giving to all parts of the nail so produced the peculiar qualities specified."

But in that case the court does not sustain the claim as an article claim, and it shows that an article claim might have been drawn, and in the decision defines precisely what the article is by stating its characteristics. The case does not suggest any difficulty in drawing an "article claim" to cover a new article, and it must be an unusual product that has new characteristics which are so vague as to be indefinable.

See, for examples of article claims the following two cases:

*Ex parte Cobb*, 5 O. G. 751, 1873 C.D. 60, "As a new article of manufacture, an inodorous and water-proof straw plastering board made in continuous lengths and wound in rolls, substantially as described."

Gandy et al., v. Main Belting Co. et al., 143 U. S. 587, 36 L. ed. 272. "2. The improved article of manufacture consisting of a hard, even-faced, rigid, impervious, nonelastic belt composed of cotton canvas or duck, having its warp-thread larger than the weft, both warp and weft being hard-spun, the fabric tight-woven and folded, stitched, and saturated with linseed-oil."

(It would seem that some of the qualifications in this claim might have been omitted without detriment.)

Oval Wood Dish Co. et al., v. Sandy Creek (N. Y.) Wood Mfg. Co., 60 Fed. 285, (C. C. A.)

Claims of patent No. 273,773: "1. A plate or dish cut or scooped from a block of wood in concavo-convex form, as an article of manufacture. 2. A plate or dish cut or scooped from the face of a block of wood in concavo-convex form and segmental in cross-section, as an article of manufacture. 3. A plate or dish consisting of a shell cut or scooped from the face of a block of wood in concavo-convex form and with horizontal upper edges, as an article of manufacture. 4. A plate or dish consisting of a shell cut or scooped from the face of a block of wood in concavo-convex form, segmental in cross-section, and with horizontal upper edges as an article of manufacture."

"The patent expressly refers to the machine and says the plates are made by a revolving cutting-knife and a flat facing-knife working alternately, by which process thin, tough flexible dishes are made of the same size and shape, which may be nested together in the smallest possible compass. A dish having these characteristics and the features covered by the claims is a new article possessing advantages not existing before. A dish not having these features, but made by hand, for instance, in attempted imitation of the complainants' dish, would not infringe. The dish of the patent is not carved, turned, pressed, or sawed. It is a scooped dish—a dish scooped from a block of wood by a revolving curved knife or its equivalent. In no other way can this dish be made."

The claims in this case furnish examples of claims for an article resting largely upon the process of making the article. They should be regarded as exceptions, however, and not as models of form in different circumstances.

Underwood et al. v. Gerber et al., 149 U. S. 224, 37 L. ed. 710.

Claim of Patent No. 348,073, August 24, 1876, to the plaintiffs:

"A sheet of material or fabric coated with a composition composed of a precipitate of dye-matter, obtained as described, in combination with oil, wax, or oleaginous matter, substantially as and for the purposes set forth."

Claim of Patent No. 348,072, issued at the same time to the same parties:

"The coloring composition herein described for the manufacture of a substitute for carbon paper, composed of a precipitate of dye-matter, in combination with oil, wax, or oleaginous matter, substantially as set forth."

The court said:

"As No. 348,073 does not claim the composition of matter, although it describes it, that composition must be regarded as disclaimed, and as being public property, and there was no invention in applying it to paper, as claimed in the patent sued on."

Brigham v. Coffin et al., 149 U. S. 557, 37 L. ed. 845.

Claim of patent No. 283,057, Aldrich, August 14, 1883:

"1. As an improved article of manufacture, a rubber cloth or fabric composed wholly or in part of rubber, having one or both of its surfaces printed or stamped with useful or ornamental designs or figures in an ink or printing compound of a different color or shade from the body of the cloth or fabric, substantially as set forth."

The second claim was like the first, except that the ink or compound is described as being:

"Composed in part of rubber, caoutchouc, gutta-percha, or some analogous substance and a coloring material or materials, substantially as specified."

The other claims were upon the same line with the addition of certain details, as of vulcanizing, varnishing, subjecting to heat or the sun's rays.

The court said:

"At the same time, while giving the composition of the ink, the patentee expressly declares that he does not claim the same in and of itself considered, because he proposed to make such ink or printing compound the subject of another patent. The case then reduces itself to the single question whether there is any novelty in printing or stamping a rubber cloth with designs in an ink of a different color or shade."

(And that should have been the claim.)

(See Underwood v. Gerber, *supra*; and, for example, Weirman v. Shaw Stocking Co. [Third], 157 Fed. 928, 85 C. C. A. 222. Ex parte Opdyke, 50 O. G. 1293, 1890 C. D. 39.

Claim:

"As a new article of manufacture, eye-glasses or spectacles having the part which comes adjacent to the nose formed of a winding of animal or vegetable material."

The Commissioner states the examiner's objection as follows, mineral wire having been shown:

"He takes the ground that while applicant is entitled to the

broad claims in the case involving the use of horse-hair for nose-pads and for such known equivalents as the courts would recognize, he is not entitled to put up bars to future inventions by a claim for the use of all possible known and unknown vegetable and animal substances which may be found adapted to the same use; that no one can tell what new materials of either origin the progress of the arts may develop, nor what new properties of old materials may appear; that the employment of such materials is clearly outside of known equivalents and of any rights applicant may possess; that his patent can at the most protect him no further than the disclosure he makes, the contribution he makes to the public good, or the step of advance he makes in his art, and that under all theories of patent law such a claim as that under consideration should be refused."

"I have not a word to suggest in opposition to the views expressed by the examiner."

(Proceeds then to state that above is matter for rejection, and not objection—that is, goes to the merits of the claim.)

The Incandescent Lamp Patent Case, 159 U. S. 465, 40 L. ed. 221.

Claims:

1. An incandescent conductor for an electric lamp of carbonized fibrous or textile material and of an arch or horseshoe shape, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of an electric circuit and an incandescing conductor of carbonized fibrous material, included in and forming part of said circuit, and a transparent hermetically-sealed chamber in which the conductor is inclosed.

3. The incandescing conductor for an electric lamp, formed of carbonized paper, substantially as described.

4. An incandescing electric lamp consisting of the following elements in combination: first, an illuminating-chamber made wholly of glass hermetically sealed, and out of which all carbon-consuming gas has been exhausted or driven; second, an electric-circuit conductor passing through the glass wall of said chamber and hermetically sealed therein, as described; third, an illuminating conductor in said circuit, and forming part thereof within said chamber, consisting of carbon made from a fibrous or textile material, having the form of an arch or loop, substantially as described, for the purpose specified.

Speaking of claims 1, 2 and 4, the court said:

"Under these circumstances, to hold that one, who had discovered that a certain fibrous or textile material answered the required purpose, should obtain the right to exclude everybody from the whole domain of fibrous and textile materials, and

thereby shut out any further efforts to discover a better specimen of that class than the patentee had employed, would be an unwarranted extension of his monopoly, and operate rather to discourage than to promote invention. If Sawyer and Mann had discovered that a certain carbonized paper would answer the purpose, their claim to all carbonized paper would, perhaps, not be extravagant; but the fact that paper happens to belong to the fibrous kingdom did not invest them with sovereignty over this entire kingdom, and thereby practically limit other experimenters to the domain of minerals."

(And see in the same line, *Matheson v. Campbell* [Second], 78 Fed. 910, 24 C. C. A. 384.)

*Arbetter v. Lewis*, 34 App. D. C. 491, 154 O. G. 516, 1910, C. D. 371.

In this interference case the following counts sufficiently indicate the character of the invention:

"1. A hem or seam for sewed articles, consisting of a main layer of textile or similar material and a superimposed layer of material having a turned-under edge and secured to said main layer by two connected rows of locked or enchained stitches entering and emerging at different points on the same side of the work, one of said rows entering under said edge, and said edge lying between the extremities of said stitches.

3. A hem or seam for sewed articles, consisting of a main layer of textile or similar material, and one or more superimposed layers of material secured to said main layer by two connected rows of locked or enchained stitches entering and emerging from different points on the same side of the work, one of said rows entering the main layer only and the other row entering under the edge of the superimposed layer or layers."

It will be observed that the invention involved merely a seam or article of manufacture without reference to the method of process of producing the seam or article or a machine by the operation of which the article is produced.

Incidentally in this case, the court held that:

"A limitation in a claim that is merely arbitrary and without function ought not to be permitted to deprive the first inventor of reward simply because the one first to file an application has inserted it."

This referred to the fact that the limitation "under the edge" had for its reason the statement that there was concealment of one of the threads whereas the seam of neither party accomplished that result.

*Dilg v. Moore*, 34 App. D. C. 106, 150 O. G. 269, 1910 C. D. 267.

This is a case of a bill in equity brought under section 4915.

The claims in question illustrate a form of article claim and read as follows:

14. A ball-retaining device for ball-bearings consisting of a ring-shaped portion or base having series of standards springing from one edge thereof only and provided with sector-shaped or flaring angularly-arranged extensions, whereby suitable spaces are formed for receiving and confining the balls between adjacent standards.

15. A ball-retainer consisting of an annular base portion and a series of integral parts extending from one edge only of said base, and having flaring portions arranged at an angle thereto, whereby suitable spaces are formed for receiving balls which are sprung into said spaces and confined between said parts.

16. A ball-retaining device for ball-bearings consisting of a ring-shaped portion or base having a series of standards springing axially from one edge thereof only and terminating in sector-shaped or flaring angularly-arranged flanges or extensions, whereby suitable spaces are formed for receiving and confining the balls between adjacent standards."

It was held that the evidence was not sufficient to show that the elements of these claims were described and disclosed in applicant's original application, it having been held in a previous decision on appeal from the Commissioner of Patents that they were not so disclosed.

(It may be interesting to consider if the "whereby" clause could have been omitted or modified to accord more directly with the fact that the claims are for an article, and if any modification would really have been desirable.)

In re Russell, 36 App. D. C. 444, 165 O. G. 474.

The following claims illustrate the narrow subject-matter of the appeal, and the practice of ringing the changes upon an expression of an idea of invention:

1. A metal can having the inner and outer faces of the same provided with a coating of flexible enamel.

2. A metal can having the inner and outer faces of the same provided with a coating of flexible enamel, said coating being adapted to fill the joints of said can and form a tight connection.

3. A metal can formed from black sheet iron or steel having the inner and outer faces of the same provided with a coating of flexible enamel.

4. A metal can formed from black sheet iron or steel having the inner and outer faces of the same provided with a coating of flexible enamel, said coating being adapted to fill the joints of said can and form a tight connection.

5. A metal can having the inner and outer faces of the same provided with a coating of flexible enamel, and a thicker coating



of said enamel on a portion of said faces for the joints of said can to form a tight connection.

6. A metal can formed from black sheet iron or steel having the faces of the same provided with a coating of flexible enamel, and a thicker coating of said enamel on a portion of said faces for the joints of said can to form a tight connection.

7. A metal can having the inner and outer faces of the same provided with a coating of flexible enamel and a second coating of said enamel on a portion of said faces for the joints of said can to form a tight connection.

8. A metal can formed from black iron or steel having the faces of the same provided with a coating of flexible enamel, and a second coating of said enamel on a portion of said faces for the joints of said can to form a tight connection.

9. A metal can having one face of the same provided with a coating of flexible enamel, and a like coating on both faces of the same at the joint-forming portion to form a tight connection.

Of these claims 1 and 9 were refused while claim 5 was allowed. The rejection was based upon the proposition that there was no invention in substituting appellant's enameled coating for the tin coating on the outside of the can. The patent also showed an aluminum lining on the inside of the can. It will be noted that the specific point of the allowed fifth claim related to the thicker coating at the joint portions.

In re Decker, 36 App. D. C. 104, 162 O. G. 999.

The following claim is an example of a certain form of articles of manufacture:

"A bilged barrel-body composed of a wound sheet of paper-pulp disposed in a series of undistorted layers, superposed directly one upon another each of which layers is of a uniform thickness and uniform degree of solidity from end to end of the barrel, substantially as set forth."

In this case it was held that where an article is fully described in a patent for a machine designed to make such an article, the claims for the article were properly rejected whether the machine disclosed in the patent was operative or not.

The point in this is that whatever invention might be required would be in the production of the machine and not in the production of a clearly-described article of manufacture.

In Parke-Davis Co. v. Mulford, (N. Y.) 189 Fed. 95, 103, the following claim was held not objectionable as being too abstract or merely for effect, especially in view of the specification:

"1. As an article of manufacture, a substance consisting of the blood pressure raising principle of the suprarenal glands chemically combined with a nonsuprarenal substance whereby

the stability of a water solution of said blood pressure raising principle is maintained.”

Union Carbide Co. v. American Carbide Co., (Second), 181 Fed. 104, 104 C. C. A. 522.

Patent No. 541,138, Willson, 1895, for “a useful product existing in the form of crystalline calcium carbide.” Valid and infringed.

The defendants cited a publication known as “Woehler” publication which the court said was merely the result of laboratory experiment. The defendants’ experts in following the Woehler process carried it far beyond the statement of the publication and secured a material having no resemblance to the Woehler product, as described. The court was not satisfied that “the defendants’ experts in producing their compound did no more than to follow the teaching of the Woehler article.”

Willson’s original claim was as follows:

“As a new product crystalline calcium carbide having a bluish iridescence, substantially as described.”

This claim was rejected, whereupon an amendment was filed with the following two claims:

“1. As a new product, crystalline calcium carbide existing as masses of aggregated crystals having a bluish iridescence, substantially as described.

“2. As a new product, crystalline calcium carbide, existing as masses of aggregate crystals, substantially as described.”

The Patent Office held that the two claims were not patentably different, whereupon the first claim was erased leaving the second, the single claim upon which the patent issued.

“In determining the question of patentable novelty, there can be no hard and fast rule. Each case must be decided upon its own facts. Mere change of form in and of itself does not disclose novelty. A new article of commerce is not necessarily a new article patentable as such. But patentable novelty in a case like the present may be founded upon superior efficiency; upon superior durability, including the ability to retain a permanent form when exposed to the atmosphere; upon a lesser tendency to breakage and loss; upon purity and, in connection with other things, upon comparative cheapness. So, as supplementing other considerations, commercial success may properly be compared with mere laboratory experiments.”

Potter v. Tone, 36 App. D. C. 181, 163 O. G. 729.

The following claims are cited as additional examples of claims for a chemical product:

1. The within-described product, being silicon monoxide  $\text{SiO}_2$ .
2. A physically homogenous, light brown material com-

posed essentially of silicon and oxygen in about the ratio of their atomic weights.

3. A material consisting of silicon and oxygen in which these elements are present in the ratio of one atom of silicon to one atom of oxygen.

4. A material containing silicon combined only with oxygen, the oxygen being less than is contained in silicon dioxide.

5. A compound of silicon and oxygen having the approximate specific gravity 2.24 and containing less weight of oxygen than of silicon.

6. A compound of silicon and oxygen only, which can be further oxidized.

7. A compound of silicon and oxygen having approximately the same specific gravity as the amorphous dioxide but containing but half as much oxygen.

8. The within-described material containing silicon monoxide characterized by the extreme fineness of particle produced by sublimation into an inert environment.

9. A compound of silicon and oxygen, which, when pure, has a soft brown color.

10. A pulverulent compound containing monoxide of silicon and being characterized by a soft brown color.

11. The herein-described new condensation product from the gases produced by electrically heating a mixture of carbon and silica, said product consisting substantially of silicon and oxygen, and having a specific gravity of approximately 2.22.

12. The herein-described new product condensed from the gases produced by electrically heating a mixture of carbon and silica, and consisting substantially of silicon and oxygen, in the proportions of sixty-three parts silicon to thirty-seven parts oxygen, in the form of a brown substance which, by treatment with hydrofluoric acid, yields a residue of amorphous silicon.

The opinion of the Examiners-in-Chief, cited with approval by both the Commissioner and the court, was to the effect that it was sufficient in this case to turn to the value of the invention for educational purposes in demonstrating to chemists the character and properties of "the long-sought silicon monoxide," and the few examples of its uses were sufficient to confer utility. In short, it was held that to establish reduction to practice of a chemical compound, it is not necessary to show that it is capable of use in some commercial way and such process has been successfully practiced; but it is sufficient if it be established that the compound has apparent usefulness.

Two cases by the Court of Appeals of the District of Columbia are interesting examples of chemical claims and the manner in which the Patent Office and the Court of Appeals are gov-

erned by the views of the federal courts in cases involving the construction or interpretation of patents.

In *re Ellis*, 37 App. D. C. 203, 167 O. G. 981. The court presents two claims as examples of the eight appealed claims as follows:

"The finish-remover comprising composite finish-solvent material including a liquid, finish-solvent, ketonic derivative of cyclic  $\text{CH}_2$  hydrocarbon.

"The finish-remover comprising composite finish-solvent material including a liquid, finish-solvent, ketonic derivative of cyclic  $\text{CH}_2$  hydrocarbon and miscible solvent material of a generally penetrating and loosening character."

The Patent Office had confined the applicant to claims specifying adipin ketone as an ingredient.

The applicant had in his specification enumerated many other substances of the same chemical group possessing the same properties as adipin ketone and capable of being used with equally satisfactory results. The court therefore held that the applicant was entitled to include in his claims the broad expression "a liquid finish-solvent, ketonic derivative of cyclic  $\text{CH}_2$ ."

In *re Dosselman and Neyman*, 37 App. D. C. 211, 167 O. G. 983. This case was decided on the same day as the case of *In re Ellis*. Illustrative claims appealed in this case are as follows:

"The substantially fluent finish-remover comprising substantially equal parts of ketonic finish-softening material and other miscible finish-softening material and incorporated evaporation-retarding material including paraffin.

"The substantially fluent finish-remover substantially neutral to wood comprising composite finish-softening material including aromatic finish-softening material and incorporated colloidal thickening material.

"The substantially fluent finish-remover substantially neutral to wood consisting substantially of organic finish-softening material and incorporated substantially solid thickening the remover to substantially semi-paste consistency."

The court held that such phrases as "ketonic finish-softening material," "aromatic finish-softening material" were too broad because acetone was the only substance specified in the original disclosure and there was no presumption that ketones generally could be used.

(See for other chemical cases, post "Infringement.")

**Functional Claims.**—There is, perhaps, no word which has been more abused or more loosely applied in the criticism of claims than the word "Functional."

In *Ex parte Knudsen*, 72 O. G. 589, 1895 C. D. 29, Acting Commissioner Fisher divided such claims into four classes.

The classification does not now seem to be of so much importance as the conclusions reached in that case which served to direct in the proper channel the practice of the Office previously directed by cases in the line of *Ex parte Pacholder*, 51 O. G. 295, 1890 C. D. 55, deprecating in all but exceptional cases claims turning upon such phrases as "means" or "mechanism."

The Supreme Court in *Corning v. Burden*, 15 How. (U. S.) 252, 14 L. ed. 683, had classed as unpatentable claims which cover merely the expected function of a machine or apparatus which had been before performed by hand, and that class of claims was so included in *Ex parte Knudsen*. It was said also that claims such as are illustrated, for example, in *Smith & Egge Mfg. Co. v. Bridgeport Chair Co.*, 46 Fed. 393, are functional because they covered sets of mechanism by setting forth the results which such classes of mechanism severally produce.

However, it would seem that such claims present first the question of invention; and there are valid or approved claims so closely resembling this tabooed class of claims as to be distinguished only by the fact that they happen to relate to novel inventions. That is to say, in many cases the question is merely one of novelty. The mere presence of such terms as "means" or "mechanism" ought not, it is thought, be a matter of objection. For it is sufficient in such cases if an idea of invention be presented, and, if the expressions clearly distinguish what is new from what is old, the claims are patentable. If they do not, then they should be rejected upon a reason based upon a statutory bar. They are "objectionable" only when too vague and indefinite to be properly examined. *Ex parte Halfpenny*, 72 O. G. 1135.

*Ex parte Hahn*, 8 O. G. 597, 1875 C. D. 107. "The combination of two carriers, each capable of revolution around a central axis, and both capable of lateral movement in the main frame, substantially," etc.

This claim was held not functional, and the following case cited as an example of a "functional claim:"

*Sickles v. The Falls Company*, 2 Fish. (U. S.) 202, Fed. Cas. No. 12,834. "Imparting a co-existing movement to two reciprocating catch-pieces in the operation of trip-off valves."

*Lull v. Clark*, 22 O. G. 1535, 1882 C. D. 461. "The so forming of a self-locking shutter-hinge case in two pieces as that the blind or shutter hung thereon may swing open or shut on a horizontal plane and lock when open to its limits, and so that also when locked open the strain shall be taken off from the spindle

and thrown onto cam-arms, and thus effectually relieve the spindle from the weight or strain of the shutter."

This badly-drawn, indefinite claim was construed by the court to be for mechanism; but it was necessary to turn to the specification for definition of the mechanism which produced the results.

Ex parte Simonds, 1870 C. D. 23. "Producing in cutting presses a successive change in the point of contact of the cutting block with the cutting die."

Held, a "functional" claim, i. e., a claim to an effect or function of the machine. Nevertheless, it is not clear that an idea of invention may not be expressed by that claim.

Ex parte Cornell, 1 O. G. 573, 1872 C. D. 120. "Preparing the end of the beam, as described, in a machine fitted with a web-cutter, n, and flange-cutters, h h, made substantially as described, and combined and operated with reference to each other to cut away the flange and trim the end of the web, substantially as set forth."

It was said that while this claim might be sustained by a court in the light of the specification, it ought not to be allowed by the Office because drawn to an act or result, i. e., functional. The claim is really uncertain and indefinite.

Ex parte Gray, 1877 C. D. 18, 11 O. G. 329. "A scroll-saw having a V-shaped frame, A, the arms of which are adapted to be lengthened or shortened in such a manner as to increase or diminish the distance between the bend or cross-bar 1 of the frame and the saw-blade B, as set forth."

This claim was criticized as "functional;" but, on appeal, was held not so because an idea of means was plainly defined and was either patentable or not.

Ex parte Knudsen, 72 O. G. 589, 1895 C. D. 29.

Claim:

1. The combination, with a suitable valve for controlling passage of fluid under pressure, of differential spring mechanism for said valve, said spring mechanism being arranged to exert a materially greater pressure in resisting the initial movement of said valve from its normal position than said spring mechanism exerts in the initial return movement of said valve toward its normal position after it has been forced to a considerable distance from said normal position, whereby when said valve has been moved to a considerable distance from its normal position by fluid pressure it will remain in the position to which it has been so moved until said fluid pressure has materially decreased below the amount of pressure necessary to effect the initial movement from its normal position, substantially as described.

Acting Commissioner Fisher said:

"The claim is not a process claim, nor can it be fairly construed to cover a process. It is clearly for a combination of two elements, one of which is expressed by the term 'differential spring mechanism,' followed by a description of the arrangement of said mechanism. It is not for controlling a fluid-pressure valve by differential spring mechanism, etc., and is neither functional nor for the function of the machine. It is the evident intention of the claim to cover not only the specific subordinate means for producing certain motions of the valve, but to cover certain devices without regard to the special means by which they produce these motions. The language of the claim seems to me to be definite, and the only objection to be urged against it is that it is too broad in view of the art. Rejection of claims of this class should always be accompanied by citation of references and such citations should be made at the time of the first office action."

(See also, *Expanded Metal Co. v. Bradford*, supra., for a striking example of a mechanical method claim resting upon a functional clause, but clearly stating the invention.)

In *re Perlman*, (1913) — App, D. C. —, 186 O. G. 560. This case well illustrates the present tendency to treat a certain class of "functional" claims with reference to whether or not they clearly state the novelty, that is, whether or not in view of the art they are sufficiently definite to define the novelty. In this case it was held that the applicant was not a pioneer inventor in this line and he was criticized for expanding his claims to an enormous number, and the claims on appeal were rejected because not sufficiently limited to the novel features and in many respects indefinite, dependent upon the statement of function rather than structure to distinguish from the prior art.

"10. In a wheel, the combination with a wheel body of a demountable rim therefor adapted to be moved into and out of an operative position on the wheel body, and a tapered element connected to the wheel body and having a wedging engagement with one of the first two-mentioned elements and adapted to exert an outward radial pressure on the demountable rim and engaging the rim for retaining the same in its operative position on the wheel body.

"36. In a wheel, the combination of a wheel body having spokes, a felly, and a metallic band or rim fixed to the felly and comprising an unbroken and uninterrupted ring, a demountable rim adapted to be moved axially into and away from an operative position on the fixed rim, the demountable rim having substantially radial flanges for positively engaging the marginal

beads of the shoe of a pneumatic tire, and means for clamping said beads against said flanges.

"48. In a wheel, the combination with a wheel body, of a demountable rim therefor adapted to be moved into and away from an operative position on the wheel body, and a wedging element disposed for effecting action tending to separate or space the rim from the wheel body and serving as means of engagement for retaining the rim in operative position on the wheel body."

There are two cases which well illustrate on one hand the difficulties created by claims not in conformity with usage, and on the other hand, the extent to which the courts will sometimes go in interpreting claims of a "functional" character, or claims which fail to set forth in clear terms the new combination.

*Brown v. Guild, "Corn Planter Case,"* 23 Wall. (U. S.) 181, 23 L. ed. 161.

In reissue patent No. 1039, claim 1 reads as follows:

"What I claim under this patent is a seed-planting machine wherein the seed-dropping mechanism is operated by hand or by an attendant, in contradistinction from mechanical dropping, the mounting of said attendant upon the machine in such a position that he may readily see the previously made marks upon the ground, and operate the dropping mechanism to conform thereto, substantially as herein set forth."

Referring to this claim, Mr. Justice Bradley, speaking for the court, says:

"The first of these claims, if construed simply as claiming the placing of the seed-dropper on the machine, would probably be void, as claiming a mere result, irrespective of the means by which it is accomplished. But, if construed as claiming the accomplishment of the result by substantially the means described in the specification, it is free from that objection; and we ought to give a favorable construction, so as to sustain the patent, if it can fairly be done. By reading the claim in connection with the final qualifying clause, thus, 'the mounting of said attendant upon the machine,' etc., 'substantially as herein set forth,' the fair construction would seem to include the means and manner of placing him upon the machine."

*Columbus Watch Co. v. Robbins.* (Sixth) 64 Fed. 384, 12 C. C. A. 174. In reissue patent No. 10,631, the claims rest largely upon such words as "adapted" followed by statements of function, for example:

"(1) As an improvement in stem winding and setting watches, a winding and hands-setting train which is adapted to be placed in engagement with the winding wheel or the dial wheels by longitudinal movement of a stem arbor that has no



positive connection with said train, substantially as and for the purposes specified.

“(2) As an improvement in stem-winding and setting watches, a winding and hands-setting train which is adapted to be placed in engagement with the winding wheel or the dial wheels, and is normally in engagement with said dial wheels, substantially as and for the purpose shown.

“(3) As an improvement in stem winding and setting watches, a winding and hands-setting train which is adapted to be placed in engagement with the winding wheel or the dial wheels by the longitudinal movement of a stem arbor, and is normally in engagement with said dial wheels, substantially as and for the purpose set forth.”

\* \* \* \* \*

Taft, Cir. J., in the opinion referring to these claims, held that they must be construed narrowly, saying:

“The only adaptation capable of appropriation by the inventor is that which is shown in the specification and drawings of his patent, and this is the necessary limiting effect of the words, ‘substantially as and for the purpose specified.’ In this way the court may sustain the validity of the claims, as it is its duty to do when possible.”

The court then cited the claim of the *Corn-Planter* Case and the above remarks of Mr. Justice Bradley. Under this interpretation the claims were held infringed.

A similar illustration from the early cases is *Le Roy v. Tat-ham*, *supra*.

It would appear that in many cases the claims of patents have invited infringement and been the source of litigation; and that, on the other hand, the courts have sometimes, in effect, re-written the claims of a patent when the defense was merely technical.

In *Eastern Dynamite Co. v. Keystone Powder Mfg. Co.*, 164 Fed. 47 (Pa.), the following claim was held bad as covering merely a principle or function.

“In a machine for packing explosive gelatin, the combination of a packing-screw and its case, of a hopper, means within the hopper for forcing material therefrom to said screw, and means whereby the pressure upon the material in the hopper will remain constant during the operation of the machine, regardless of the quantity consumed by said screw, substantially as described.”

In *Denning Wire & Fence Co. v. American Steel & Wire Co.*, (Eighth) 169 Fed. 793, 94 C. C. A. 634, the following claim of patent No. 788,305, was held not void as covering merely a function or the function of a machine.

“(1) In a wire-fence machine, the combination of mechanism for intermittently feeding a plurality of longitudinal strand-wires, mechanism for simultaneously and intermittently feeding a plurality of stay-wires transversely and so as to cross each other in pairs, both lying on the same side of the strand-wires, a cut-off for the several stay-wires, and coilers to knot them around the strand-wires.”

In *Dey Time-Register Co. v. Bundy*, (N. Y.) 169 Fed. 807, several claims including and similar to the following cited claims were held to plainly present a certain and definite mechanical meaning and to require explanation from the specification only of the terms “regular records” and “irregular records.” They were held, however, not to be infringed because the defendant’s structure accomplished the same general ultimate result by substantially different means operating in a substantially different way; and that, notwithstanding the apparent breadth of the claims, they were, in fact, limited by the prior art to the precise point indicated.

“(35) A clock-controlled time-recorder having automatically-acting time-printing means adapted to print regular records in a certain color and irregular records in a certain other color.  
\* \* \*

“(54) A clock-controlled time-recorder having automatically-actuated time-printing means adapted to print regular records with an impression of a certain color, and irregular records with an impression of a certain other color. \* \* \*

“(60) A time-recorder including, in combination, time-controlled printing mechanism, means for taking impressions from said printing mechanism upon a record-surface, and means whereby the impressions made by said printing mechanism during different predetermined intervals are made in different colors.”

*Curtis v. Atlas Co.*, (Pa.) 136 Fed. 222. The court held valid and infringed claims 1 and 2 of patent No. 533,867, but as void claims 3 and 4 because indefinite and uncertain or rather as not stating the real invention made by the applicant.

“(3) A detachable foot-rest for rat-trap pedals, having a clamp shaped to receive a rat-trap plate, and faced with rubber, and means for detachably securing said clamp to said plate, substantially as described.

“(4) A detachable foot-rest for rat-trap pedals, having a perforated metallic clamp adapted to receive a rat-trap plate, a rubber facing cast upon and extending through the perforations of the metallic clamp, and means for detachably securing said clamp to said plate, substantially as described.”

The other claims which were held valid defined the novel

construction of the pedal by which the parts were given their advantages over the prior art; that is, how the "clamp" was "shaped" and how "adapted," etc.

Brown Mfg. Co. v. Deere, (Seventh) 61 Fed. 972, 10 C. C. A. 208.

Claim 1 of patent No. 190,816, reads as follows:

"1. The pipe-box provided with a projection adapted to co-operate with a spring, weight, or the draft, to rock the said pipe-box against or with the weight of the rear cultivators or plows, substantially as and for the purpose described."

In presenting this claim to the court counsel for the patentee urged it should be read as if written as follows:

"The combination in a corn-cultivator of a pipe-box, a projection thereon, a spring hitched to such projection at its free end, and one or more 'rear cultivators or plows' also pivoted to the pipe-box; these being so connected and combined that the spring, acting through such projection, shall co-operate with the operator in the manipulation of the beams by hand."

Of this the court remarked that: "It is only under the emergencies and 'for the purpose of the present case' that such a combination could be read into the claim," etc. It may be interesting to observe that in this case counsel for the patentee argued that a weight used in this case was not practically the equivalent of a spring. This argument, however, did not obtain.

The court also held that claim 1 was for the pipe-box as a single device and that the word "adapted" could not be given a strained and unwarranted significance synonymous with "combined."

(See, for additional example, and illustration of approved use of "adaption," *Mossburg v. Nutter*, supra, under "Equivalents.")

In *Hobbs v. Beach*, 180 U. S. 383, 45 L. ed. 586, the court amongst other things discussed and sustained the following claim of reissue patent No. 11,167:

"6. The combination of opposing clamping-dies having diverging working faces constructed to co-operate in pressing an adhesive stay-strip upon an interposed box-corner, one of said clamping-dies being constructed to act with an elastic or yielding pressure to enable the die to operate upon the box-corners of different thicknesses, substantially as described."

It will be observed that this claim does not positively include the parts which operate the "diverging working faces," and especially that it does not include the spring or its arrangement for giving the "elastic or yielding pressure;" but that these relations turn upon the word "constructed." In some cases this form of claim might be dangerous because inviting litigation or requiring interpretation, or open to a limitation that a part itself

was constructed to perform the function as distinguished from being joined with other operative parts different in construction, for producing the result. In this claim it will be observed, however, that force is given rather to the phrases "constructed to operate" and "constructed to act."

That functional limitations in a claim can not be ignored in determining the question of infringement, see, for example, *Thomson Meter Co. v. National Meter Co.* (N. Y.), 106 Fed. 519; *Neasseth v. Larkin* (Pa.), 111 Fed. 409; *Anthony Co. v. Gennert* (Third) 108 Fed. 396, 47 C. C. A.; *Regent Mfg. Co. v. Penn Electrical Mfg. Co.* (Seventh) 121 Fed. 80, 57 C. C. A. 334.

The relation of the "rule" of equivalents to broad or primary inventions has been hitherto briefly presented under this heading. In many cases the claim is in such comprehensive terms as not to necessarily involve the application of any rule of equivalents, because ordinarily it is found impossible to put together any combination of parts which do not come within the sweeping terms of such claims as, for example, the claims in *Morley Machine Co. v. Lancaster*, post, under "Infringement."

The rule relates rather to the secondary division of such inventions or patents, where there is some distinctive idea not necessarily creating a new art, but marking a distinct advance.

There are cases in which the opinion of the courts compares the means or method of the defendant with that described or illustrated in the patent in suit—cases in which little is said of the claims and the decision turns upon types of structure or method, or upon operations and results. It would appear that, in such a case, the court has concluded the claims to be sweeping and that the defendant can make nothing which will not infringe, and that, therefore, no close analysis of the claim is required.

(The application of these principles is generally involved with the question of infringement, and for that reason the topic will be again considered under the heading "Infringement.")

**Formal Objections in General: Alternative, Ambiguous, Indefinite, Incomplete, Duplicate, Multiplied, Identical**—The purpose of formal objections, as a class is to make the claim a clear and exact statement of the idea of invention. Some of the many general requirements have already been stated, and the preceding illustrations in some cases note minor objections. These minor objections are too numerous to define seriatim, and in fact the terms designating the objections generally carry their own definition.

An "alternative" claim is one in which it is doubtful which of two or more things is covered. A claim having the phrase "one or more" is alternative in form, if the elements covered by such phrase are not duplicates; when they are duplicates the claim is

not alternative. (Assistant Commissioner Fisher in *Ex parte Hulbert*, 63 O. G. 1687, 1893 C. D. 74; *Ex parte Thorsen*, 63 O. G. 1688, 1893, C. D. 75.)

*Ex parte Mayall*, 4 O. G. 210, 1873, C. D. 134.

"1. The employment in the manufacture of packing of canvass or other suitable woven fabric, treated first with beeswax or other lubricant and then with rubber solution substantially as and for the purposes described. 2. The manufacture of packing from strips of canvas or other woven fabric suitably treated, wound spirally upon a mandrel in successive, separate and independent layers, the tube thus produced being divided into packing rings substantially as herein described and illustrated in the accompanying drawings. 3. Packing composed of canvas strips preliminarily treated with beeswax or other lubricant, followed by rubber solution, as described, and then wound spirally in successive, separate, concentric layers on a suitable mandrel or form, substantially as and for the purposes shown and set forth.

These claims were thought "nondescript." They cover in a rude way four inventions: 1. Art of making fabric. 2. Fabric for packing. 3. Method or art of making packing from fabric. 4. Packing cut into rings. Is claim 1 for a product? The inventor contended it was the use of material. Claims 2 and 3 cover the same product. Claim 2 is drawn to the art of forming packing from prepared canvas. The latter part simply obscures the real method aimed at, and bears no relation to the first part. Claim 3 is for a product, indirectly qualified by recitation of method. An article is not patentable merely because produced by a certain method.

*McCormick Harvesting Mach. Co. v. C. Aultman & Co. et al.*, (Sixth) 69 Fed. 371, 16 C. C. A. 259. This case is presented more fully under the heading: "Primary or Pioneer Inventions." Of the claims there recited the court held that the tenth and eleventh claims were substantially identical because the parts omitted in claim 10 and supplied in claim 11 must be understood in claim 10. That is to say, as a patent office criticism, either claim 10 was incomplete or the two claims were substantially identical, and one should have been canceled prior to issue. It will be observed also from the statement of the case herein that neither claim recites all the parts necessary to the operation. In a primary or pioneer invention this might be immaterial after the grant of the patent, but in case of a mere improvement it is important to determine that all the parts essential to the combination have been recited, and this rule applies to all applications for patent.

*Thomson-Houston Electric Co. v. Elmira & Horseheads Ry. Co.* (N. Y.) 69 Fed. 257. This case furnishes an example of what

the court thought was an unnecessary multiplication of claims in an anxious endeavor to cover every shade of the invention. The complainant admitted that claims 9-14, inclusive, "cover substantially the same ground." The court divided the numerous claims into groups and selected the leading ones as covering the full invention. See, also, *Benjamin Electric Co. v. Dale* (N. Y.) 141 Fed. 989; *Bellows v. United Electric Mfg. Co.* (Second), 160 Fed. 663, 87 C. C. A. 551.

The practice of having broad and narrow claims has been, of course, indirectly sanctioned in very many cases, and is directly sanctioned, for example, in *Parke-Davis Co. v. Mulford*, 189 Fed. 95.

It would be practically impossible within the limits of this topic, as suggested, to cover all, or approximately all, of the criticisms of claims which have been approved or rejected, because there is no limit, on the one hand, to the capacity of an inventor or his representative in originating forms of expression, and, on the other hand, no limit to the opportunities for the examiner either to minimize or magnify objections. From the hundreds of interesting decisions of the Commissioner of Patents a few may be selected, in addition to those hitherto given, to illustrate the general trend of the criticism of claims upon matters of form.

A claim is not alternative where, in the description in the claim, two terms are correctly employed to designate the same element. (*Ex parte Holder*, 107 O. G. 833, 1903 C. D. 442; *Phillips v. Sensnich*, 132 O. G. 677, 1908 C. D. 14.)

In *Caldwell & Parr*, 120 O. G. 2125, 1906 C. D. 58, it was held that a claim including a description of an element as "brick or the like" was alternative and indefinite.

Such a phrase as "asbestos or its equivalent" was held objectionable. (*Ex parte Phillips*, 135 O. G. 1801, 1908 C. D. 195). "Brake or locking device" alternative and indefinite. (*Ex parte Leon*, 164 O. G. 250); also "button or end wheel" alternative.

In *Chapman*, 120 O. G. 2440, 1906 C. D. 79, a claim for "lumber partially saturated with sulphuric acid" was held objectionable in the phrase "partially saturated," obviously inapt.

In *Donk*, 119 O. G. 965, 1905 C. D. 498, claims for an apparatus which included amongst other elements an "arrester," a "mechanical separator," and a "chemical separator" were held not vague and indefinite where the specification clearly set forth the meaning of the terms, but that the matter was simply one of breadth or scope.

In *Morgan Envelope Co. v. Albany Paper Co.*, 152 U. S. 425, 38 L. ed. 500, it was held that a combination claim could not include the article operated upon by the mechanical parts; and this was repeated in *American Tobacco Co. v. Streat*, 83 Fed. 700, 28

C. C. A. 18; and *Union Paper Bag Co. v. Advance Bag Co.*, 194 Fed. 126, 139; and the Patent Office practice follows these cases.

The Patent Office has objected to the inclusion of an intangible element like a hole as in *Davin*, 100 O. G. 452, 1902 C. D. 251, but in *Ljungstrom*, 119 O. G. 2235, 1905 C. D. 541, the Commissioner held that the use of the term "outlet" is not for that reason objectionable.

The office has also established a practice of objection to elements which are inferentially positively included, and the reason for making this sometimes doubtful objection is that it is in the interest of clearness and good form to positively and directly include an element. (See, for example, *Vinke*, 96 O. G. 2061, 1901 C. D. 124; *Dodge*, 125 O. G. 665, 1906 C. D. 439.)

(For slight differences in claims held sufficient to differentiate them, see, for example, *Wiens*, 101 O. G. 1369, 1902 C. D. 387; *Lahue*, 101 O. G. 448, 1902 C. D. 357; *Ach*, 96 O. G. 2411, 1901 C. D. 139; *Wishart & Seidel*, 101 O. G. 3107, 1902 C. D. 479; *Reese*, 113 O. G. 849, C. D.; *Massie*, 113 O. G. 2505, C. D. And see also, for example, *Deecco Co. v. Gilchrist* [Second] 125 Fed. 293, 60 C. C. A. 207.)

The examples show instances of claims turning upon reference letters which have been sustained by the courts but the Patent Office has, especially in recent years, objected to such claims because not definitely setting forth the structure claimed. (See, for example, *Osborne*, 92 O. G. 1797, 1900 C. D. 137.)

**Words, Terms, and Phrases.**—It is customary to conclude claims with some phrase as "substantially as described," "substantially as and for the purpose set forth," etc. These phrases are generally considered as not of themselves qualifying, but as emphasizing the fact that the claim may be referable to the description. (See *Brown v. Guild* "Cornplanter Patent," 90 U. S. 181, 23 L. ed. 161; *Columbus Watch Co. v. Robbins*, 64 Fed. 384, 12 C. C. A. 174.

It has been said that the first phrase is merely formal, while the latter is one of limitation; but the distinction seems to be of no practical importance.

In *Houser v. Starr*, (Sixth Circuit, 1913) 203 Fed. 264, 270, 120 C. C. A. the court said:

"The words 'substantially as described' do not create this necessity for construction by the entire patent; they are only a formula in recognition of the rule, and the cases, like *Pope v. Gormully*, 144 U. S. 248, 253, 36 L. ed. 423, 12 Sup. Ct. 641, and *Fox v. Perkins*, 52 Fed. 205, 214, 3 C. C. A. 32, which make reference to the phrase, can not mean anything more."

The terms "means" and "mechanism" have been much dis-

cussed by the Patent Office, but are now accepted as raising merely a question of patentability.

*Ex parte Halfpenny*, 72 O. G. 1135, 1895, C. D. 91. Claim 3 is an example of the claims objected to by the examiner.

3. The combination of bobbin-feeding, bobbin-separating, and stick-filling mechanisms, co-operating to feed and separate bobbins and fill bobbin-sticks therewith, substantially as and for the purpose specified.

Acting Commissioner Fisher said: "The objection of 'indefiniteness' or 'vagueness' commonly urged against claims, when such objection is based on the fact that the claims include as elements 'means' or 'mechanism,' limited only by the function which such means or mechanism performs, is inaccurate. Those terms do not, under such circumstances, render the claims indefinite or vague. It would be more accurate to say of those terms, when only limited in the manner above stated, that they render the claims too broad—an objection which goes to the merits of the claims, and which calls for a rejection. (*Ex parte Opdyke*, 50 O. G. 1293, 1890 C. D. 39." (Compare claim under "Primary or Pioneer Inventions.")

Likewise in *Weaver*, 81 O. G. 967, 1897 C. D. 165, it was held that the use of the term "means" with the proper qualifying words, is not prohibited by any decision of the office or courts. Generally, however, the question is what are the "proper qualifying words."

(And see, for example, *Young v. Eick*, 113 O. G. 547, 1904 C. D. 465.)

*Lacroix v. Tyberg*, 33 App. D. C. 586, 150 O. G. 267, 1910 C. D. 263.

It has been almost a rule of the Patent Office to object to claims where the word "means" was employed to indicate two separate features of invention. Objection was made by *Lacroix* that *Tyberg* had no right to make claims in the line of counts 1, 2 and 3. It was held, however, that the words "means for transferring the bunches from the mold to the wrapping mechanism" must be generic terms and applicable to each species of transferring device, though in *Tyberg's* case this means covered three different elements.

Claims 1, 2 and 4 sufficiently indicate the invention, it being noted that claim 4 does not include as an element the wrapping mechanism:

"1. The combination, with a wrapping mechanism, of means for supporting a plurality of bunches, and means for transferring bunches from the supporting means to the wrapping mechanism.

2. The combination, with a wrapping mechanism, of means



for supporting a mold, and means for transferring the bunch from the mold to the wrapping mechanism.

4. The combination with a bunch-support operating to sustain a plurality of bunches, of a lifting device including means for engaging each bunch, and devices for operating the lifting device to remove the bunches from and transport them from the support."

Claims have sometimes rested upon the definition of a single word, term or phrase.

In *Brush Elect. Co. v. Ft. Wayne Elect. Light Co. (Ind.)*, 40 Fed. 826, Brush's patent was sustained as a broad patent upon the interpretation of the word "dissimultaneous," a word coined for the occasion, while in *Brush Elect. Co. v. Western Elect. Co.*, 69 Fed. 240, another circuit held that the word did not state the broad patentable novelty found in it by the other courts. (Affirmed (Seventh) 76 Fed. 761, 22 C. C. A. 543.

In *Edison Elect. Light Co. v. U. S. Elect. Lighting Co.*, 52 Fed. 300, 3 C. C. A. 83, the court gave the widest scope to the vital word of the claim "filament."

Many other cases cited herein bear upon a phrase or a term in a claim.

*Bresnahan v. Tripp Giant Leveller Co. et al., (First)*, 102 Fed. 899, 43 C. C. A. 48.

The claim in issue of patent No. 384,893 reads as follows:

"A machine for beating out the soles of boots and shoes, provided with two jacks, two molds, and means, substantially as described, having provision for automatically moving one jack in one direction while the other is being moved in the opposite direction, whereby the sole of the shoe upon one jack will be under pressure, while the other jack will be in a convenient position for the removal of the shoe therefrom."

In the machine human intervention is necessary at the treadle to set the machine in operation and every time a blank is introduced for compression. The court, therefore, said that the word "automatically" used in the claims of the patent was not used in the strict sense but that it was sufficient as applied to any part of the patented machine. The claim was said to be a very broad one and it was held that no method of making the connection between the actuating-jacks and the crank-shaft by means well-known in the art at the date of the patent would evade it.

Other examples of stress upon a single word or phrase of a claim are found in preceding cases, as, for example, under "Equivalents."

For the restriction of claims using the terms "adapted," see *Columbus Watch Co. v. Robbins*, supra. For "participial" forms and use of terms such as "so arranged," see "Functional Claims."