THE GRANT AND VALIDITY OF BRITISH PATENTS FOR INVENTIONS

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WITH MANY DIAGRAMS

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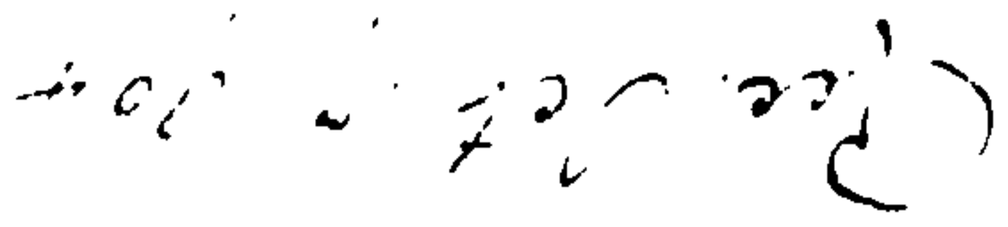

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PREFACE.

ANY work on the subject of Patents for Inventions must of necessity be a law book. This work has been written for, and from the point of view of, inventors. It is hoped nevertheless that the full statement of Principles with references to the authorities and the Abstracts of Cases will render it useful to practising lawyers.

It has been ascertained by an official inquiry that of the Patents for Inventions granted in England no fewer than 42 per cent., that is, about 5780 per annum, are invalid on the ground of having been already patented in this country. An examination of the results of litigation shows that, of such patents as are commercially worth infringing, no less than 51 per cent. are invalid. The invalidity of these patents is in many cases not discovered till after the lapse of years; but, even assuming that no invalid patent is renewed, sums amounting to £23,120 per annum are paid for patents which give no legal protection to the patentees. This state of affairs brings discredit upon all British patents, and diminishes the market value even of those which are valid.

Although the new procedure shortly to be brought into operation will prevent the grant of a large proportion of bad patents, many will still exist, as it deals only with one cause of invalidity.

This work has been undertaken to enable the inventor to confine his claims to what can be supported, and to avoid errors in drawing his specification. Under the new procedure there will arise questions of alleged anticipations, which hitherto have only been brought to the notice of the inventor during the progress

of litigation; the inventor will therefore have to consider such questions in future before the grant is made. The work accordingly deals with the subject up to the grant of the patent and the amendment of specifications. Although the action for infringement is not included, yet it will be found that this work bears fully upon it.

The First Part consists of the Principles and Rules affecting the Grant and Validity of Patents, and the practice respecting the Amendment of Specifications, both before the Comptroller-General and Law Officers of the Crown; the Second, of Abstracts of Cases illustrating the applications of the principles; and the Third, of the Statutes and Rules.

One method of ascertaining the general rules of law is to seek in each case the underlying principle on which it was decided. Owing to the technical nature of the subjects of litigation, the mistake has sometimes been made of taking a passage of general phraseology out of connection with the facts of the particular case. In the present instance, all the reported cases in which the validity of patents came in question have been examined—first the facts, and then the effect of each case on subsequent decisions. From a comparison of the results of these investigations the First Part has been compiled. Of these cases a large number of abstracts has been given by way of illustrations in the Second Part; the reader's attention being called more to what the Courts have done than to what individual judges have said. In all the abstracts the facts of each case have been set out as shortly and clearly as possible, the object being to give the reader a guide as to the application of the legal rules in practice. In many cases recourse has been had to original documents and exhibits the sources of which have been indicated.

In addition to the usual reports of the older cases, I am indebted to the Patent Office publications—Specifications and Reports—for a large amount of the material used; and to the Comptroller-General and members of his staff for their assistance in certain

minor matters. I am indebted to the well-known works of Mr. Ralph Griffin for many of the cases relating to procedure before the Law Officers from which abstracts have been made. The work of research was materially lightened by the use of the American Reprint of English Patent Cases (up to 1842), kindly placed at my disposal by Mr. James Swinburne. And I have had the advantage of perusing Dr. W. Martin's pamphlet on the Construction or Interpretation of Specifications of Letters Patent.

Mr. Allan Davidson and Mr. Alfred R. Shawe gave me much assistance in the reproduction of the drawings. I have had the benefit of the perusal and criticism, by Mr. J. W. Gordon, of part of the manuscript and proofs; and I am also indebted to Mr. D. M. Kerly and Mr. J. D. White for assistance with the proofs.

JAMES ROBERTS.

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[46 & 47 VICT. C. 57.]

(*Sections relating to Matters not within the scope of this Work are omitted.*)

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ABBREVIATIONS.

A. C., or Ap. Ca. ..	Appeal Cases, 1875-
A.-G.	Attorney-General.
Arn.	Arnold's Common Pleas Reports, 1838-41.
B. & Ald.	Barnewall & Alderson's King's Bench Reports, 1817–22.
B. & S.	Best & Smith's Queen's Bench Reports, 1862–69.
B. & Cr.	Barnewall & Cresswell's King's Bench Reports, 1822–25.
Beav.	Beavan's Rolls Court Reports, 1838–66.
Bell, or Bell A. C. ..	Bell's Appeal Cases, Scotland, 1842–50.
Bing. N. C.	Bingham's New Cases, Common Pleas, &c., 1835–40.
Br. & Bi. . ..	Broderip & Bingham's Common Pleas Reports, 1819–22.
Bu. N. P.	Buller's Nisi Prius, 7th Edition, 1817.
C. & K.	Carrington & Kirwan's Nisi Prius Reports, 1851.
C. & P.	Carrington & Payne's Nisi Prius Reports, 1823–41.
C. A.	Court of Appeal.
C. A. I.	Court of Appeal, Ireland.
C. B.	Common Bench Reports, 1845–56.
C. B. N. S.	Common Bench Reports, New Series, 1856–65.
C. G.	Comptroller-General of Patents, &c.
C. P.	Court of Common Pleas.
C. L. R.	Common Law Reports, 1854–55.
C. S., or Ct. Sess. ..	Court of Session, Scotland.
Carp.	Carpmael's Patent Cases.
Ch.	Chancery, or Court of Chancery.
Ch. D.	Chancery Division of the High Court, and Law Reports of Cases in 1876-90.
Ch. D. I.	Chancery Division, &c., Ireland, 1878-
Ch. Ap.	Chancery Appeal Cases in Law Reports, 1866–74.
Cl. & F.	Clark & Finelly's House of Lords' Reports, 1831–46.
Cr. M. & R.	Crompton, Meeson & Roscoe's Exchequer Reports, 1834–36.
D.	Dunlop, Second Series Court of Session Cases, 1838–62.
Dan. & Ll.	Danson & Lloyd's Mercantile Cases, 1828–29.
Dav.	Davies' Patent Cases, 1785–1816.
De G. F. & J.	De Gex, Fisher & Jones's Chancery Reports, 1859–62.
De G. J. & S.	De Gex, Jones & Smith's Chancery Reports, 1863–65.
De G. M. & G. ..	De Gex, Macnaghten & Gordon's Chancery Reports, 1851–57.
Dow. & Ry.	Dowling & Ryland's King's Bench Reports, 1822–27.
E. & B.	Ellis & Blackburn's Queen's Bench Reports, 1852–58.
E. & E.	Ellis & Ellis's Queen's Bench Reports, 1858–61,
East	East's King's Bench Reports, 1791–1812.
Eq.	Equity.
Eq. Ca.	Equity Cases, Law Reports, 1865–75.
Ex.	Court of Exchequer, or Exchequer Reports, 1847–56.
Ex. Ch.	Court of Exchequer Chamber.

F. D.	First Division of the Court of Session.
Giff.	Giffard's Chancery Reports, 1857-65.
Good.	Goodeve's Patent Cases.
Gr.	Griffin's Patent Cases.
Gr. L. O. C.	Griffin's Cases before the Law Officers.
H. & N.	Hurlstone & Norman's Exchequer Reports, 1856-62.
H. Bl.	Hy. Blackstone's Common Pleas Reports, 1788-96.
H. L.	House of Lords.
H. L. Ca.	House of Lords Cases (Clark & Finelly), 1847-66.
Holt N. P.	Holt's Nisi Prius Reports, 1815-17.
I. H.	Inner House, Court of Session.
Jur.	Jurist Reports, 1837-54.
Jur. N. S.	Jurist Reports, New Series, 1855-66.
Joh.	Johnson's Chancery Reports, 1858-60.
K. B.	Court of King's Bench, or King's Bench Division of the High Court.
L. C.	Lord Chancellor.
L. C. B.	Lord Chief Baron (Ireland).
L. C. I.	Lord Chancellor of Ireland.
L.J. and L.JJ. ..	Lord Justice, and Lords Justices.
L. J. (O. S.)	Law Journal (Old Series) Reports, 1823-31.
L. J. Ch.	Law Journal Reports, Chancery, 1832- (similarly for King's Bench, Common Pleas, and Exchequer).
L. R.	The Law Reports, 1866-76.
L. R. I.	Law Reports, Ireland, 1878-93.
L. T.	Law Times Reports, 1859-
M. & W.	Meeson & Welsby's Exchequer Reports, 1836-47.
M. & Gr.	Manning & Granger's Common Pleas Reports, 1840-44.
M. & R.	Manning & Ryland's King's Bench Reports, 1827-30.
M.R.	Master of the Rolls.
M.R.I.	Master of the Rolls, Ireland.
Mac.	Macrory's Patent Cases.
Marsh.	Marshall's Common Pleas Reports, 1813-16,
Mer.	Merivale's Chancery Reports, 1815-17.
Mo. & Sc.	Moore & Scott's Common Pleas Reports, 1832-34.
Moo.	Moore's Common Pleas Reports, 1817—27.
Mur. & H.	Murphy & Hurlstone's Exchequer Reports, 1836-37.
My. & Cr.	Mylne & Craig's Chancery Reports, 1835-41.
N. P.	Nisi Prius; Cases heard at Nisi Prius.
N. R.	New Reports, Common Pleas, 1804-7.
Noy	Noy's King's Bench Reports, 2nd Edition, published 1669.
P. C.	Privy Council.
Q. B.	Queen's Bench Reports, 1841-52; or, Court of Queen's Bench.
Q. B. D.	Queen's Bench Division of the High Court, and Law Reports of ditto, 1876-90.
R.	Rettie, 4th Series, Court of Session Cases, 1873-98.
R. P. C.	Reports of Patent Cases, issued by the Patent Office, 1884-
Russ.	Russell's Chancery Reports, 1826-29.
S. C.	Same Case.
S. G.	Solicitor-General.
Salk.	Salkeld's King's Bench Reports, 1689-1712.
Sc.	Scott's Common Pleas Reports, 1834-40.
Scott N. R. . ..	Scott's New Reports, 1841-45.

T. R.	.. .. ..	Term Reports, King's Bench (Durnford & East), 1785-1800.
Taunt.	.. .. .	Taunton's Common Pleas Reports, 1808-19.
Tyr.	.. .. ..	Tyrwhit's Exchequer Reports, 1830-35.
V. C.	.. .. ..	Vice-Chancellor.
V. C. C. P.	.. ..	Vice-Chancellor of County Palatine of Lancaster.
V. C. I.	.. ..	Vice-Chancellor of Ireland.
Ves. & B.	.. ..	Vesey & Beames' Chancery Reports, 1812-14.
W. R.	.. .. ..	Weekly Reporter, 1853-
Web.	.. .. ..	Webster's Patent Cases.
West A. C.	.. ..	West's House of Lords Cases, 1839-41.

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THE GRANT AND VALIDITY OF PATENTS.

PART I.

CHAPTER I.

INTRODUCTORY—TREATMENT OF THE SUBJECT.

Introductory.

FROM very early times the English Courts held that trade monopolies granted by the Royal Prerogative were contrary to the public good, as tending to deprive persons already trading of their means of livelihood, and to raise the prices of commodities. But these considerations did not apply to monopolies granted with respect to new manufactures introduced into, or invented within, the realm, and it was in the public interest that the introducers and inventors of new manufactures should be rewarded for their share in developing the trade of the country. Hence when monopolies were declared illegal by the Statute of Monopolies, 21 Jac. 1, c. 3, an exception was made in sect. 6 in favour of inventions, in the following terms:—

> 6. Provided also . . . that any declaration before mentioned shall not extend to any letters patent and grants of privilege for the term of fourteen years or under, hereafter to be made of the sole working or making of any manner of new manufactures within this realm,[1] to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patent and grants shall not use, so as also they be not contrary to the law nor

[1] The realm for this purpose now includes the United Kingdom and the Isle of Man. British Colonies are places "abroad" within the meaning of the Patents Acts. *Rolls* v. *Isaacs*, 19 Ch. D. 268; 45 L. T. 704.

mischievous to the state, by raising prices of commodities at home, or hurt of trade, or generally inconvenient; the said fourteen years to be accomplished from the date of the first letters patent or grant of such privilege hereafter to be made, but that the same shall be of such force as they should be as if this Act had never been made, and of none other.

The grants of monopolies are made by "letters patent," *i.e.* *litteræ patentes*,—"letters open" or not sealed up, and addressed to all subjects of the King. "Letters patent" are used for other grants, such as titles, appointments, and so forth, but the abbreviation "Patent" is, in connection with manufactures, used for "letters patent for an invention."[1] To "patent" an invention means, therefore, to obtain, by complying with the law, letters patent granting a monopoly with respect to the invention in question. An invention which is the subject of such a grant is usually termed "patented," or "protected." But any representation that an article is the subject of a "patent" when it is not is now an offence punishable by fine and imprisonment.[2] The usual form of a "patent" is given *post*, p. 569.

The grant of a patent is now regulated by the Patents, Designs, and Trade Marks Act, 1883, and subsequent Acts. But the definition of an "invention" in sect. 46 of the Act of 1883 (*post*, p. 502), refers to the sixth section of the Statute of Monopolies, hence the limits placed by the law on a "patentable invention" are the same as those under and since the Statute of Monopolies, which, from the concluding words of sect. 6, include the limits recognized at common law at the date of that Act (1624).

There have been a large number of decisions on the meanings and limitations of the terms "new," "manufacture," "true and first inventor," "others shall not use," in the Statute of Monopolies. Besides the limitations imposed by such interpretations of the statute, other conditions have been defined; namely, that the alleged invention to be patentable must be useful for the purpose intended by the patentee; that it must not be of too simple a nature, or the grant of a monopoly for it would unduly hamper skilled workmen in using and applying their knowledge in their respective trades to new conditions, or to overcome new difficulties; and also that it

[1] See sect. 46 of the Patents Act, 1883, *post*, p. 502.

[2] Sect. 2 (1 *d*) (3) and sect. 3 (1 *e*) of the Merchandise Marks Act, 1887, 50 & 51 Vict. c. 28: and sect. 105 of the Patents, &c., Act, 1883: 46 & 47 Vict. c. 57, *post*, p. 510.

must not be one for effecting any purpose that is contrary to law or morality.[1]

The term "manufacture" is a very wide one. As the monopoly is permitted to promote the industries of the country, a "manufacture" must consist of something by which the industrial wealth of the country is increased.[2] The monopoly is for the "sole working or making of any manner of new manufacture," hence a "manufacture" must be capable of being "worked" or "made," and as it must be something that others at the time of the grant "shall not use," it must be capable of being "used." For these reasons such things as schemes of co-operation or methods of conducting business, ideas embodied in literary form, such as the contents of a book, are not manufactures within the meaning of the statute. Although the embodiment of ideas in writing or print is the subject of copyright, and not a patent, yet the physical, as distinguished from intellectual, means, such as printing processes, binding, &c., of producing a book, are "manufactures" because producing a vendible article—a book;[3] and these means are independent of the contents (*i.e.* the embodied ideas) of the book.

When an inventor has an invention for which he desires a patent, he must comply with certain conditions laid down by statute. Inasmuch as the patent is of the nature of a reward for the introduction of a new manufacture, it is granted conditionally on the inventor making a true and full disclosure of his invention and the mode of performing it, so that men skilled in the particular art may, without having to investigate or to solve the problem of overcoming difficulties, know how to carry it out for their own benefit after the fourteen years have expired.[4] For this purpose the inventor must file at the Patent Office a "specification" setting forth clearly what his invention is and the mode of performing it.

The rules on the several matters alluded to in the foregoing paragraphs have been evolved through a long series of decisions, and are now fairly well ascertained and defined. But there is immense difficulty in applying these rules in various cases as they arise. From the technical nature of the facts in each case and the difficulty of

[1] Sect. 86 of the Act of 1883, *post*, p. 504.

[2] *R.* v. *Arkwright*, 1 Web. 71 (per *Buller*, J., supported by *Tindal*, C.J., in *Crane* v. *Price*, 1 Web. 409; 12 L. J. C. P. 86).

[3] *Cooper's App.*, 19 R. P. C. 53; *Johnson's App.*, 19 R. P. C. 56. [4] See *post*, p. 400.

taking a comprehensive view of previous decisions, these rules are not of easy application. In the following pages the reader's attention is directed to the application of the rules as well as to their enunciation.

Treatment of the Subject.

In dealing with the question of the Grant and Validity of Patents for Inventions from the point of view of the inventor, it must be borne in mind that, according to the English law and practice, the question of validity (save in a few cases) [1] cannot be entertained or decided by the authorities whose duty it is to grant such patents. The inventor takes his patent at his own risk, and the validity of the grant may be contested in subsequent proceedings in the High Court, either by a Petition for Revocation being presented, or by the Defence in an action for infringement. A "patentable invention" and a "valid claim" mean, therefore, not merely those for which a grant may be obtained, but those which will be upheld and supported in subsequent litigation. It appears that at least 42 per cent. of the patents granted in England are invalid on the ground of want of novelty alone.[2]

The rules on which the questions affecting the grant and validity of patents depend are derived from various sources: (1) the common law and considerations of public policy; (2) the Statute of Monopolies, 1624; (3) a long series of decisions elucidating the foregoing; (4) the Patents, &c., Acts, 1883 to 1902, and cases thereon; and (5) the rules made under the provisions of those Acts. Although the rules relating to validity are mainly found in actions for infringement and petitions for revocation of patents, yet a knowledge of them is necessary in order to avoid taking out a patent which cannot be subsequently maintained when challenged.

Under the new practice introduced [3] by the Act of 1902, the applicant will be informed by the Comptroller of such previous specifications as appear to anticipate the invention in respect of which a patent is applied for. He must therefore, with professional assistance in most cases, decide whether he will modify his application, and if so, in

[1] See further, *post*, p. 102.

[2] The Comptroller's estimate of the number anticipated by earlier specifications is 42 per cent. (see Par. Rep. 1901, Cd. 506, par. 6); of 213 contested in the Courts from 1893-1902 inclusive, 110 were found invalid.

[3] The date on which the new procedure comes into operation will be fixed by an order of the Board of Trade, probably early in 1905.

what manner. This decision cannot be arrived at without a knowledge of the principles upon which the Courts decide on the validity of patents, and the mode of application of those principles.

The rules and their application are treated of in the following pages under *four* main heads or divisions :—

I. The consideration of the "manufacture" or "invention" for which a patent may be granted, distinguishing it on the one hand from the principles involved, the application of which constitutes the "invention," and on the other from the resulting advantages and uses to which it may be put ;—that is to say, where the monopoly begins and ends in relation to the *manufacture*.

II. The relations arising from the development of the knowledge of the art in question, and the consideration of the "invention" of the manufacture in regard to *time*. On the one hand, there are the questions of novelty, prior user, prior grant to a rival inventor, and the question of the extent to which the proposed grant might interfere with workmen at the time by reason of the slight amount of ingenuity required to produce the invention in question. On the other hand, there is the relation of the patentee to *subsequent* inventors involving the question of how far the inventor can anticipate subsequent inventors, by including that which he had not actually devised at the date of his application.[1]

III. The persons to whom and the conditions on which the grant will be made. Under this head come the filing of specifications disclosing the method of performing the invention and making distinct claim or claims thereto, and also questions arising from the policy of the law and the rules of construction or interpretation of specifications.

IV. The procedure to be followed, the drafting of specifications, the amendment of specifications, and opposition to the final sealing of the patent.

[1] It will be seen that, though logically distinct, this cannot be considered altogether apart from the Specification under the next head.

CHAPTER II.

LIMITS OF "MANUFACTURE" IN PATENT LAW.

Distinction between Principles and Inventions, p. 9—Distinction between Inventions and their Objects, p. 11—Patents for Improvements, p. 14—Master Patents, p. 15—Combination Patents, p. 16.

Limits of "Manufacture" in Patent Law.

THE term "manufacture" is one that is necessarily wide. Subject to what has been already stated (*ante*, p. 3), almost any new means whereby the production of wealth in the country is increased, may be a manufacture for which a patent may be obtained, provided the trade so introduced be not an unlawful one. It will be more convenient first to consider the limits to the subjects comprised in the term "manufacture" within the Statute of Monopolies.

The term "subject-matter" properly denotes that for which the patent is granted, and in order that the patent may be valid it must satisfy the conditions discussed hereafter. For instance, if an invention lack that amount of ingenuity required to make it patentable, the patent is said to be invalid "for want of subject matter."

The term "invention" is used in connection with Patent Law in more senses than one. It is commonly used in specifications and elsewhere to denote the subject of the monopoly granted by a patent, *e.g.* "My invention consists in, &c."—in such cases it denotes a *manufacture.*

All "inventions" (using the term in the sense just indicated) consist in the application of the laws of nature, the properties of bodies, elements, or other substances to produce certain results or attain certain objects for the benefit of mankind. Hence there are four natural divisions, or stages, to be considered in regard to any invention :—

I. The *principles* or laws of nature, *i.e.* natural phenomena, or properties of substances or things employed.

II. The *method* of application of those principles, *e.g.* a *process* of manufacture.

III. The immediate result, or vendible article, or substance produced.

IV. The ultimate result, that is, the object to be attained, or use to which the more immediate result is applied.

The nature of this division will be more fully understood by referring to a few elementary examples :—

In the invention of the pendulum there are involved—

(i.) the principles of gravitation and inertia involved in the period of oscillation of the pendulum ;

(ii.) the forms, the mode of suspension and attachment ;

(iii.) the complete article produced ; and

(iv.) the resulting property of the device in being capable of isochronous motion, and consequently of being able by suitable attachments to impart such motion to other mechanism.

In the balance-wheel of a watch there are—

(i.) the principles determining the oscillations of a rigid body, the period of which depends on the mass, shape, and size of the wheel ;

(ii.) the mode of manufacture and attachment to the rest of the mechanism ;

(iii.) the complete article produced ; and

(iv.) the property of being capable of isochronous motion, and of being used .o impart such to other mechanism.

In the case of an explosive such as ordinary gunpowder there are—

(i.) the chemical laws involved in the ignition and combination of the elements of sulphur and carbon with the oxygen of the nitre ;

(ii.) the process of mixing the ingredients under safe conditions ;

(iii.) the gunpowder produced ; and

(iv.) the force due to the sudden production of gases at a high temperature.

In the case of a dye there are—

(i.) the chemical laws involved in the reactions produced by certain substances under certain conditions ;

(ii.) the mode of applying these laws in making the dye ;

(iii.) the colouring-matter produced ; and

(iv.) the ultimate result of this substance dispersing certain waves of light and not others, producing thereby a "colour."

In the case of an electric glow-lamp installation there are—

(i.) the known laws of the heating effects of a current, and the conditions affecting the development of heat in different parts of the circuit;

(ii.) the choice of materials and mode of joining and combining the same to produce success;

(iii.) the lamp itself; and

(iv.) the production of light by incandescence of part of a circuit on turning on a current.

In the foregoing divisions and examples those numbered II. or III. may constitute "manufactures," but not I. or IV.

Patentable inventions may be therefore roughly divided into two great (but not necessarily exclusive) classes:—Processes or methods of production, and vendible articles.

The four stages of development exist in all cases, but are not of the same importance. For instance, in the majority of mechanical inventions, the "manufacture" is the machine produced (III.) whose parts perform certain functions, the mode of putting the machine together (II.) being a comparatively minor matter; but in inventions of chemical processes the reverse is the case, the resulting product (III.) being in many cases old, and the novelty being in the mode of producing the known substance. In many cases both II. and III. are of importance.

One of the commonest methods of increasing the wealth of the country is by cheapening the cost of production, hence it was very soon recognized that a *process* or *method* of producing old and known articles could be the subject of a patent although there was nothing permanent in the article produced to distinguish it from former results. If the manufacture were of a permanent nature it was termed an "engine" or "device," if of a fugitive nature a "method."[1]

The one "invention" may therefore comprise two "manufactures," the vendible result and the mode by which it is produced; each may be separately claimed. The same rules and legal principles apply to both classes, but some are more frequently invoked in regard to one class, and others to the other.

[1] *Boulton* v. *Bull*, 2 H. Bl. 494, 495; *Hornblower* v. *Boulton*, 8 T. R. 95; *R.* v. *Wheeler*, 2 B. & Ald. 349, 350; *Gibson* v. *Brand*, 1 Webs. 633.

Distinction between Principles and Inventions.

The laws of nature made use of in any invention are the underlying principles of that invention; the manufacture which constitutes the invention itself is the application or use of those principles.[1] It is contrary to public policy that the discoverer of a previous unknown "law" of nature, substance, or natural phenomenon (such as X rays) should be able to restrain others from applying such to various purposes or utilizing it for the purpose of making fresh discoveries; but a monopoly may be granted for the *means* used to produce the phenomenon or extract the element. Hence it has always been held that a "principle" cannot be the subject of a patent, the reason being *that a principle is not a manufacture*.[2]

In the preceding elementary illustrations the underlying principles are marked (i.), and in no case are patentable, the "invention," *i.e.* the *manufacture*, consisting in the application of those principles as shown in (ii.) and (iii.).

The following illustrations of the distinction are taken from actual decisions:—

Illustrations of Principles as distinguished from Manufactures.

The specification of *Watts'* invention of the separate condenser in a steam-engine was described by him as his "*method* of lessening the consumption of steam, and consequently fuel in fire-engines," consisting of "the following *principles*, &c." This was a misuse of words. The *principles underlying the invention* were the laws relating to the pressure and temperature of steam, and the dissipation of energy by radiation from the steam cylinder; the *invention* lay in the method of retarding the cooling of the cylinder and condensing the steam in a separate vessel, causing a fall in pressure of the steam in the cylinder. The *result* of the invention was the economy of fuel. *Boulton* v. *Bull*, 2 H. Bl. 463, 496.

In *Hartley's* patent for a *method* of rendering buildings fire-proof, the principles were the properties of iron and other substances to resist combustion, the *result* the negative property of the building being fire-proof. The *manufacture* was the *method* or arrangement of materials alone. 2 H. Bl. 493.

[1] Per Lord *Hatherley*, L.C., in *Cannington* v. *Nuttall*, *post*, p. 248.

[2] Discussed in *Boulton* v. *Bull*, 2 H. Bl. 463, 486, and *Hornblower* v. *Boulton*, 8 T. R. 95. *Otto* v. *Linford*, 46 L. T. (per *Jessel*, M.R., at p. 39), *post*, p. 288.

In the invention of the hot blast for smelting, the principles are the laws of chemical combustion as to production of heat; the *manufacture* consisted in the mode of placing and forming the air-chamber so as to be heated. *Neilson* v. *Harford*,[1] *post*, p. 189.

In an invention of an "improved mode of manufacturing gas," the *principles* consisted in the power of hydrated ferric oxide to absorb hydrogen sulphide, and in the oxidation of the ferric sulphide by the air, and the *manufacture* in the mode of applying those principles. *Hills* v. *London Gas Light Co.*, *post*, pp. 208, 211.

An improvement in a gas-engine consisted in admitting to the cylinder an explosive mixture of gas and air separate from a charge of air or incombustible gas previously introduced to act as a cushion. The *principles* were the known properties of gases, and the *manufacture* consisted in the *method* of so applying them to produce the desired result in an old engine requiring only slight alterations in the mechanical construction. *Otto* v. *Linford*, *post*, p. 288.

A patent was granted for the *manufacture* of "improvements in pavement lights." The improvement consisted in sending the light after it had entered the prism from above directly or with refraction in a definite direction, by so shaping the prisms that the light was reflected *internally* from the face of the prism. The *principle* here was that of internal reflection of light. *Hayward* v. *Hamilton*, *post*, pp. 277, 280.

An improved means of disinfecting consisted in a chamber surrounded by a casing so constructed that the casing could be filled with superheated steam under a very high pressure, and then the internal chamber could be similarly filled, the contents being thereby rapidly heated. Here the *principles* are the properties and use of superheated steam, the *manufacture* the contrivance itself so constructed as to stand the required pressure. *Goddard* v. *Lyon*, *post*, pp. 358, 361, 362.

Illustrations such as those given might be indefinitely multiplied, for every manufacture is based on underlying principles which are not themselves patentable.

In mechanical inventions a new principle is extremely rare; such manufactures consist in new applications or arrangements of old contrivances. The principles are general statements concerning such forces as weight and friction, and such properties as elasticity, rigidity, and inertia; these principles are brought to bear upon the

[1] Those who are not previously acquainted with the subject will find it more expedient to postpone referring to the details given in the abstracts of cases until the First Part of this work has been read.

purpose of invention by means of specific directions as to the use of such devices as levers, screws, pulleys, &c.

In the domain of physics the principles consist of natural phenomena and laws such as those pertaining to the ether and its vibrations, light and actinic rays, electric and magnetic waves, the laws governing the expansion of metals, the creation and transmission of sound, &c., and from these result as inventions such arts and manufactures as photography, the machines used in wireless telegraphy, balance-wheels of chronometers, telephones, &c.

In chemical inventions the laws governing the constitution of bodies and their chemical and physical properties are not patentable, but give rise to all kinds of manufactures, *e.g.* beverages, dyes, explosive powders, &c.

It is most important always to distinguish between the manufacture which constitutes the invention patented and the principles underlying it. A true appreciation of the latter is frequently necessary to understand in what the invention described and claimed really consists. The cases of *Goddard* v. *Lyon* (*post*, p. 358) and *Gormully* v. *N. B. Rubber Co.* (*post*, p. 414) are striking instances of this; the former has already been alluded to, and the latter consisted of a *method* of retaining the cover of a pneumatic tyre in its place in the rim by means of a *grip* produced by the action of the air and road-pressure on a certain arrangement of tubes and flanges.

Indeed, in many cases it is absolutely necessary to inquire into and distinguish the principles in order to understand the essence of the invention under consideration.[1]

Distinction between Inventions and their Objects.

As a "manufacture" must be distinguished from a *principle* on the one hand, so it must be from an *ultimate result* or *use* on the other. A manufacture to be a patentable invention must consist in the application of principles, or the mode of carrying them into effect (classed as II. above), or the resulting substances or things of a vendible nature, which are produced by such application or use of principles (classed as III. above). One must here distinguish between the manufacture itself and the ultimate purpose or object

[1] *Thomson* v. *Moore*, 6 R. P. C. 450, l. 37.

it is intended to attain. The *immediate* purpose, object, or result may be the manufacture itself, such as a new dye substance, or a simpler form of a machine, and the *ultimate* purpose, or object, be something the manufacture is intended to attain, such as a new colour, or the saving of time by more rapid working of machine. The manufacture that constitutes invention does not include the object to be attained by the invention, that is to say, all the resulting effects.[1]

The *mere application* of an old thing to a new purpose is not patentable, because the novel application is not a "manufacture,"[2] unless it amount to a new machine or mode of production, *i.e.* a new manufacture. For instance, the discovery that an old wheel had certain advantages and the explanation of such does not constitute a manufacture.[3] But where the manufacture is a process or method (II. above), it may consist in the *use* of certain old things or processes.

In the preceding classification and elementary examples given *ante*, p. 7, the *ultimate* results, objects, or uses are marked IV.; those are not manufactures. The distinction here made may be further illustrated from actual cases:—

Illustrations of Results as distinguished from Manufactures.

The saving of fuel and steam effected by *Watts'* invention is not included in his monopoly, only those means by which such saving is effected. The *result* of power to resist fire effected by *Hartley's* patent is not included in his monopoly. See *ante*, p. 9.

A patent was granted for an expanding table of circular or oval form of which parts could be moved outwards radially, and sectors inserted. The manufacture there protected was the device by which the result was accomplished, and did not extend to include the same result achieved by other means. *Jupe* v. *Pratt*, 1 Webs. 143 (as explained by *Cotton*, L.J., in *Automatic Weighing Machine* v. *Knight*, 6 R. P. C. 304).

An invention consisted of a machine for clipping horses; by means of it the process of clipping could be more conveniently performed. The manufacture protected by the patent did not include the mode

[1] See *Neilson* v. *Harford*, 1 Webs. 355; *Curtis* v. *Platt* (per *Wood*, V.C.), *post*, p. 239; *Goddard* v. *Lyon* (per Lord *Halsbury*, L.C.), 11 R. P. C. 358, l. 50; *Moser v. Marsden* (per Lord *Watson*), *post*, p. 376.

[2] *Reg.* v. *Cutler & Ors*, Mac. P. C. 134; *Bush* v. *Fox*, Mac. P. C. 164, 176 (approved by the House of Lords, 5 H. L. Ca. 713).

[3] *Tetley* v. *Easton*, 2 C. B. N. S. 739.

of clipping, but only the machine itself. *Clark* v. *Adie* (No. 1) (as explained in *Vorwerk* v. *Evans*), *post*, pp. 259, 263.

An invention consisted of a method of enlarging boiler-tubes by rolling. A tool consisting of three cylindrical rollers capable of being forced out by a central conical roller or plug enlarged the end of the tubes, the inner surface of the tube being rolled slightly conical. The *manufacture* was the device and the *result* the enlarging of the tube. The same result (*i.e.* conical extension of the tube by rolling) was produced by other means which were not the same *manufacture*. *Dudgeon* v. *Thomson*, 3 App. Ca. 34, *post*, p. 263.

A patent was granted for "improvements in weighing-machines." These consisted in certain arrangements of mechanism which enabled a person to ascertain his weight by standing on a platform and putting a penny in a slot whereby an indicator on a dial showed his weight. These results are not included in the *manufacture* patented, which consisted of the machine alone, *i.e.* the means whereby the result was attained. *Automatic Weighing Machine Co.* v. *Knight*, 6 R. P. C. 297.

A new ticket-punch was patented in which the insertion of a ticket unlocked the mechanism. On pushing a rod further the punching was effected, also the registering of the punching and the ringing of a bell. These results were no part of the manufacture for which the monopoly was granted, and others might effect the same results by different mechanism in which the ticket when inserted itself formed part of the mechanism. *Ticket-Punch Register Co.* v. *Colley's Patents*, 12 R. P. C. 171, 185.

The same invention may be sometimes looked at from more than one point of view. For instance, *Watts'* device of the separate condenser in the steam-engine was described in the specification and claimed as a "method for reducing the consumption of fuel" in fire-engines; it might have been described as "an improved engine" or as "improvements in engines." In every case, the inventor should, before applying for a patent, have a clear idea as to what is the *manufacture* he has devised, whether it be a *process* or *vendible article* or both.

Illustration.

Kay discovered that maceration of flax broke up the fibre, and invented the process of wet-spinning of flax, but he did not patent the process, but claimed only the machinery. In claiming the use of old machinery adjusted for spinning flax as "improved" machinery he only claimed an old use and not the new process. His patent was invalid. *Kay* v. *Marshall*, *post*, p. 190.

Patents for Improvements.

The development of arts and manufactures is a gradual one. Nearly every invention is a step in advance of what was the common knowledge of skilled persons. It was held at an early date that an improvement in an existing manufacture might be the subject of a patent for a "new" manufacture under the Statute of Monopolies. Patents may therefore be obtained for improvements in existing manufactures, both in processes and in vendible articles, and although the manufacture so improved is itself the subject-matter of an existing patent,[1] the ultimate customer or user paying royalties to both inventors in an increased price.

Illustrations of Improvements.

To obviate the necessity of altering the length of a pendulum to correct for elongation or shortening due to a rise or fall in temperature, a method was devised by which the property of unequal expansion of metals was made use of. The bob of the pendulum was suspended from a "gridiron" arrangement, and was lifted by the expansion of some rods of metal, thus counteracting the lengthening due to the expansion of the main rod.

In balance-wheels the principle of unequal expansion of metals is used for the same object. The effect of the lengthening of the radii of the wheel on the time of oscillation is counteracted by constructing the rim in segments, with the more expansible metal outside; on expansion of the wheel "warping" ensues, thereby bending the masses of the segments more towards the centre.

In both these cases the same principles are used for the same object, but in a different manner. The improvements are therefore different inventions.

No matter how great the improvement may be from a commercial point of view, it must come within the term "manufacture" as used in Patent Law. "It is not every useful discovery that can be made the subject of a patent, but you must show that the discovery can be brought within a fair extension of the words, 'a new manufacture.'"[2] An improvement must be capable of being described and specified.[3] It is a fallacy to assume that every

[1] *Crane* v. *Price*, *post*, p. 197; *Fox*, *ex parte*, 1 V. & B. 67; 1 Webs. 431 (*n*).
[2] Per Lord *Cranworth* in *Ralston* v. *Smith*, 11 H. L. Ca. 250 (*post*, p. 230).
[3] *Dudgeon* v. *Thomson*, *post*, p. 268.

improvement in a known patentable article is necessarily of itself a patentable improvement.[1]

In the above illustrations of the compensating pendulum and balance-wheel it will be seen that the improved articles are different from the old; they are different articles, and possess a new property, viz. that of automatic correction. They are therefore distinct manufactures.

Where the invention constitutes a "new manufacture" in the popular sense of the term, that is, when it gives rise to a new industry or trade, it is usually termed a "pioneer" invention. In modern times these usually consist of applications of newly discovered principles, or laws, of nature; *e.g.* the incandescent electric lamp, incandescent gas mantles, the first coal-tar dyes, &c. A pioneer invention is, in the nature of things, a comparatively wide one, and a patent for such may control those for improvements, so that the users of the latter are liable to two royalties. Owing to the subdivision of labour and manufactures, what is an improvement in one manufacture may itself give rise to a separate industry.

Master Patents.

Where improvements are made in manufactures for which patents have already been granted, and which come within their claims, the earlier patents are termed "Master" or "Governing Patents," and the patents granted for the later inventions "Patents for Improvements." But a patent for an improvement in an existing invention—say a complicated machine—may be sufficiently wide to include various improvements thereon, and in that case would be a "master patent" as well as a "patent for an improvement."

The case of *Boyd* v. *Horrocks* (too complicated for insertion here) may be referred to as an illustration. See report of that case in the House of Lords, 9 R. P. C. 77.

Hence it will be seen that the term "master patent" is a relative one. Inventions cannot be distinctly classified as "pioneer" or "improvements," although they are frequently so described as constituting two loosely defined classes.

[1] *Kynochs* v. *Webb*, 17 R. P. C. 100, per Lord *Halsbury*, L.C., p. 107 (*post*, p. 428), and Lord *Davey*, p. 115 (*post*, p. 430).

The simpler manufacture in one case may become a part, or element, in another more complex or advanced.

For instance, a manufacture may consist of a process for (1) the making of pure glycerine. The glycerine in its turn is an ingredient used in (2) the manufacture, by treating it with nitric acid, of the powerful explosive nitroglycerine. Nitroglycerine in its turn is an ingredient used in (3) another manufacture, that of a certain class of smokeless powders.

In the foregoing instance there are three distinct patentable manufactures, and if patents for each be in existence at the same time, the ultimate purchaser pays royalties for all either directly or in the increased price of the materials used by the last manufacturer, and in the price of the ultimate article.

Combination Patents.

Referring to the elementary illustrations given above (*ante*, p. 7), it will be seen that each manufacture is founded on certain simpler elements. In the pendulum and balance-wheel are used certain metals of different coefficients of expansion. In the making of gunpowder the "principles" are applied by the use of certain concrete substances—charcoal, sulphur, and nitre, and so on. The "principles," or natural laws, are applied by means of such things or proximate elements of the new manufacture. In more advanced cases the proximate elements of the manufacture, by the use of which the ultimate principles are applied, are more complex, *e.g.* nitroglycerine in the manufacture of smokeless powders.

It is only in comparatively few and the simpler cases that patentable inventions consist of the direct application of "principles," or natural laws, or phenomena. In general the ultimate principles are applied by means of known manufactures, either things or processes; thus in relation to mechanical inventions the terms "principle of the lever," "principle of the rack and pinion," are frequently used to denote the principles underlying and applied in the devices of the lever and rack and pinion respectively.

In very many cases the application of principles, which constitute a new manufacture, takes the form of using or combining known previous applications of principles in a new manner or for a new purpose. Attention is then mainly directed to the *proximate*

elements employed—*i.e.* known devices or processes—and the invention is termed a "combination," the known applications of the principles being termed the "elements" of the combination. In such cases the new manufacture is the *combining together* of the old elements producing either a new process or a new article. All machines are of this class, and many processes of manufacture.

Illustrations.

A meter to measure the supply of gas or electricity by time would be a combination of a meter and clockwork mechanism, the result being a new meter—a new manufacture.

The invention of heating the air in its passages to a smelting furnace in combination with the use of anthracite coal constitutes a new process of smelting iron, although the hot blast and anthracite coal had been separately used before. *Crane* v. *Price*, *post*, p. 195.

In cases of combinations of things or processes the elements, if old, are not patentable, but the combining together of them may be, if the other conditions required in new inventions are complied with. Combination inventions present special features which are considered *post*, p. 38. But on a close examination it will appear that the legal principles underlying the question of validity are the same in all cases, although in one class of inventions one principle may be more frequently applied than in another class.

CHAPTER III.

INVENTIONS IN RELATION TO THE HISTORY AND DEVELOPMENT OF THE ARTS.

Rights of the Public—Prior User, p. 21—Prior Publication, p. 23—by others, p. 24—by the Patentee, p. 24—by documents, p. 25—Amount of Disclosure in Prior Publications, p. 27—Exhibitions, p. 29—Identity of Inventions, pp. 30–33—Minimum of Addition to Public Knowledge essential, pp. 34–37—Proof of Ingenuity, p. 37—Cases of Combination Patents, pp. 38–46—Rights of Subsequent Inventors, p. 47.

Rights of the Public.

THE Statute of Monopolies declaring, but not extending, the law, permits of the granting of monopolies for "any manner of new manufacture" " . . . which others at the time . . . shall not use, so as also they be not . . . mischievous to the state, by raising prices of commodities at home, or hurt of trade, or generally inconvenient . . . the same shall be of such force as they should be as if this Act had never been made, and of none other" (*ante*, p. 1). But, save in certain excepted cases, the question of refusal of the grant of a patent on the ground of invalidity from want of novelty or insufficiency of inventive ingenuity is not entertained, the applicant taking the patent at his own risk.[1] The question of the validity of a patent is raised either in proceedings taken for the revocation of a patent, or by way of defence to an action for infringement. The rules relating to validity are therefore to be found in such cases. The inventor, however, does not commonly look at the questions involved from quite the same point of view as the lawyer. But it is necessary for him to do so, for the problems presented to him are those of ascertaining whether the step in addition to the public knowledge which constitutes his "invention"

[1] This subject is dealt with, *post*, Chap. VII., p. 100.

is one that can support a valid patent, and the procedure to be observed to obtain such.

Having satisfied himself that his invention (whether a mere improvement or not) comes within the description "manufacture," as before explained, the next consideration is that of the rights of the public in regard to the existing knowledge of the art in question. The general principle constituting the test may be conveniently expressed in the following introductory statement:[1]—

A patent, to be valid, must not be such that the monopoly granted by it would preclude any member of the public from doing that which at the date of the patent he or other members of the public have been in a position to do by reason of the common knowledge of the art, prior user, or publication of the invention. Publication, however, does not include information given to persons confidentially consulted or employed.

The subject is here dealt with alone as regards "the realm," *i.e.* the United Kingdom and the Isle of Man; the "public" is the British public — persons residing within the realm. The earliest patents were granted almost in every case for manufactures imported from abroad; hence an importer of a new manufacture is in the same position as one who devises an invention within the realm. [This will be further considered, *post*, Chap. IV. p. 48.]

This branch of the subject naturally consists of several subdivisions. A "member of the public" may be "in a position to do" a certain thing because—

(*a*) *He has done it before*,[2] in which case he comes within the words of the Statute of Monopolies, "which others at the time . . . shall not use," and a subsequent patent for the same manufacture would be invalid on the ground of "prior user" (*post*, p. 21), the acts performed in a process, or the thing produced (as the case may be), being termed "an anticipation;" or,

[1] The question of invalidity on account of want of utility and prior commercial user by the inventor himself depend on considerations of public policy. See *post*, pp. 79–83.

[2] That this is the ground on which patents have been held invalid, and therefore forms a test of validity, is apparent from *Heath* v. *Smith* (per Lord Campbell, C.J.), 3 E. & B. 273; *Patterson* v. *Gas Light and Coke Co.* (per Lord *Blackburn*), 3 App. Ca. 244, 247; *Haddan's Patent*, 2 R. P. C. 218; *Cassel Gold Extracting Co.* v. *Cyanide Gold Recovery Synd.*, 11 R. P. C. 652. The public, when once possessed of an invention, cannot be deprived of it by a subsequent patent. *Harris* v. *Rothwell*, 4 R. P. C. 234.

(*b*) *he knows how to do it* from having read a description in the realm, or from having seen in the realm the invention itself, or models, or machines, &c., in which case the patent would be invalid on account of "prior publication;" the description, or process, or result seen being termed an "anticipation."[1]

[Each of these grounds of invalidity constitute "want of novelty."]

or (*c*) *he can, from his knowledge of his trade or art, do it as soon as* his attention is called to the subject, in which case the patent is invalid, because it is in the words of the Statute of Monopolies "mischievous by hurt of trade by raising the price of commodities *or generally inconvenient*." A patent held invalid on this ground is said to be invalid for "want of invention" or "want of sufficient inventive ingenuity," and also for "want of subject-matter."[2]

[One may here add the exceptional case where (*d*) *one has protected the thing himself, having either devised or imported it*, in which case a subsequent patent would, apparently,[3] be invalid by reason of a "prior grant," as two monopolies cannot co-exist in respect of the same invention, and the later applicant, although a true, is not the first inventor (*post*, p. 51).

As the earlier invention in this case is not published, "prior grant" will be considered, *post*, p. 51.]

The inquiry into the application of the foregoing principles as affecting the validity of patents involves, therefore, three questions.

I. What is the nature and amount of *prior user* of a manufacture that would invalidate a subsequent patent for the same invention?

II. What constitutes *publication* of an invention so as to invalidate a subsequent patent for the same?

[1] When the description is in a document alone, the invention not having been used or made, the term "paper anticipation" is frequently used in litigation; it is not a term of art, and is generally used in argument in a disparaging sense.

[2] See *post*, p. 355. This use of the term "subject-matter" is only a particular application of the term defined *ante*, p. 6. If it be recognized that an invention to be patentable must be a "manufacture" as defined *ante*, pp. 3, 6, and that it must not be so simple as to interfere with existing trades, then the term "subject-matter" may be dropped altogether. Apart from "*want of invention*," the use of the term was condemned by Lord *Esher*, M.R., in *Edison-Bell, &c.* v. *Smith*, 11 R. P. C. 398, l. 37.

[3] It does not appear that an actual decision has yet been given on this point.

III. What addition to the stock of public knowledge is sufficient to constitute a patentable invention as distinguished from a new use or application of existing knowledge?

I.—*Prior User.*

As to the first question, although the statute refers to manufactures "which *others* at the time of making such letters patent and grants shall not use," yet a patent may be held invalid on account of prior user by the inventor himself on two grounds: (*a*) As being contrary to public policy, since secret commercial user before the patent would extend to monopoly beyond the limits of fourteen years; and (*b*) as constituting a "publication" of the invention. The former of these points will be considered *post*, p. 79; the latter comes under the head of "publication."

As regards persons other than the patentee, the term "prior user" means prior public [1] use; that is, user *in* public although not necessarily *by* [2] the public generally, user by one member of the public being sufficient. It must be actual commercial user as distinguished from what is purely experimental.[3] It need not be a user continued up to the date of the patent; [4] the discontinuance, however, would be some evidence on the question whether the user were experimental or not.[5] The manufacture openly of the anticipation without actual sale is sufficient [6] user to publish an invention.

Illustrations.

In the case of a patent for bleaching it was proved that a bleacher had for five or six years previously used the same process commercially, but kept it a trade secret, known only to his partners and two servants. The patent was held invalid. *Tennant's Case*, *post*, p. 182.

The patent in question was for a lock. It was proved that a similar one had been used for several years on a certain gate. This was sufficient prior user to invalidate the patent. *Carpenter* v. *Smith*, 1 Webs. 543.

[1] *Lewis* v. *Marling*, 10 B. & C. 27; 1 Webs. 496.

[2] *Carpenter* v. *Smith*, 1 Webs. 534, 542.

[3] *Walton* v. *Bateman*, 1 Webs. 619; *Cornish* v. *Keene*, 1 Webs. 508; *Galloway* v. *Bleaden*, 1 Webs. 525.

[4] *Household Co.* v. *Neilson*, 1 Webs. 692 (Lord *Lyndhurst*, p. 710); *Dick* v. *Tullis*, 13 R. P. C. 157.

[5] *Household Co.* v. *Neilson* (per Lord *Campbell*), 1 Webs. 716; *Morgan* v. *Windover*, 5 R. P. C. 303 (per *Cotton*, L.J.).

[6] *Betts* v. *Neilson* (per Lord *Chelmsford*), L. R. 3 Ch. Ap. 431, 435, *post*, p. 220

The Provisional Specification of an invention was dated the 14th of November, 1853. A rival manufacturer invented the same device at an earlier date. His machine was capable of being used, but was not used in his trade at the above date. This was not publication, and the patent was upheld. *Smith* v. *Davidson* (1857), 19 Crt. Sess. 691.

See also the case of *Hoe* v. *Foster*, *post*, p. 25.

As the reason for invalidating a patent for prior user is because a monopoly cannot be granted having the effect of restraining others from doing what they are in a position to do, cases may occur in which the prior user does not fully disclose the alleged subsequent discovery, but yet prevents it from being patentable. Thus, if a new method of carrying out a process does not amount to anything more than a new way of carrying out an old process, but with the machinery or vessels cleaned or emptied oftener, then the latter is not patentable although it gives much better results.

Prior User invalidating without disclosing.

Gas had been purified by being passed over lime and oxide of iron. Lime absorbed CO_2 and H_2S, forming $CaCO_3$ and CaS. The iron oxide absorbed H_2S. Impurities also existed consisting of other sulphur compounds, chiefly CS_2. Lime did not absorb CS_2 directly, but CaS would do so. $CaCO_3$ did not absorb either. These facts were known. The practice had been to pass the gas through a series of purifiers containing lime, and renewing them one by one in turn so each became "foul." The patentee arranged his purifiers and process so that the gas could be tested between the purifiers, and remained sufficiently long in the first one not only to form $CaCO_3$ and CaS, but for the latter to be decomposed by more gas forming $CaCO_3$ and expelling H_2S to the next purifier. The latter purifiers were filled with CaS to absorb the CS_2. The process was the same in method and effect as if the first purifier in the old method were emptied and refilled oftener. The patent was held invalid by the Court of Appeal. *Patterson* v. *Gas Light and Coke Co.*, 2 Ch. D. 835.

The patent in question was one for improvements in the treatment of "sulphite pulp" in paper manufacture, consisting in the use of petroleum or paraffin oil at a certain stage, whereby specks from pitchy or resinous matter were avoided, and the machinery kept clean. The paper by the improved process was more valuable than the old Others had previously used petroleum in the same quantities and stage, but for another purpose, viz. to clean the slits

in the grids, so enabling smaller slits to be used and saving labour. But on starting with their machinery clean (after the date of the patent), they found they got rid of specks also. *Held*, that the alleged invention merely amounted to the discovery that by cleaning the machinery new and better results could be obtained. *Partington and others* v. *The Hartlepool Pulp, &c., Co., Ltd.*, 12 R. P. C. 295.

II.—*Prior Publication.*

As to the second question of what constitutes a publication within the realm [1] sufficient to invalidate a patent, the general rule is that it is such a disclosure as puts a "member of the public" in possession of the invention without such a one having to make discovery or research in order to complete the invention,[2] for when once the public are possessed of an invention they cannot be deprived of it, so a subsequent patent for the same will be invalid;[3] even when the prior knowledge is imported from abroad and the patentee did not gain it from that source, but devised the invention himself.[4] The question of publication is a question of fact, and it will be sufficient to prove circumstances such that the public may reasonably be presumed to know of it.[5] The question of fact must in all cases be reasonably considered.[6]

For convenience of illustration, cases of publication may be classified under the following heads:—

(1) By user by persons other than the patentee.
(2) By user by the patentee; and
(3) By documents, such as books, drawings, specifications.

Cases on publication are mere illustrations of the application of the foregoing rules; a question of fact in one case cannot be a precedent for a question of fact in another.

[1] *Household Co.* v. *Neilson*, 1 Webs. 718 (*n*).

[2] Abandoned unsuccessful experiments are not publications; *Jones* v. *Pearce*, 1 Webs. 124; *Cornish* v. *Keene*, 1 Webs. 519, as explained by Lord *Lyndhurst*, L.C., in *Household Co.* v. *Neilson*, 1 Webs. 709.

[3] Per Lord *Blackburn* in *Patterson* v. *Gas Light and Coke Co.*, 3 App. Ca. 244.

[4] *Stead* v. *Williams* (per *Tindal*, C.J.), 13 L. J. C. P. 220; 8 Scott's N. R. 472.

[5] Per *Jessel*, M.R., in *Plimpton* v. *Malcomson*, 3 Ch. D. 556, approved in *Harris* v. *Rothwell*, 3 R. P. C. 388 and 4 R. P. C. 230 (by *Lindley*, L.J.), in *Gadd* v. *Mayor of Manchester* (by *Lindley*, L.J.), 9 R. P. C. 528, and in *Guilbert Martin* v. *Kerr*, 4 R. P. C. 22.

[6] *Newall* v. *Elliott*, and notes, *post*, p. 204.

(1) *Publication by Persons other than the Patentee.*

Where the invention has been previously used or worked by others it is, in most cases, known to them, hence is not "new."

Articles the same as those subsequently patented were manufactured by persons other than the patentee and deposited in a warehouse for sale, but not actually sold. The knowledge of these was confined to the maker and his *employés*. These constitute an anticipation. *Mullins* v. *Hart*, 3 C. & K. 297.

Manufacture of an article by workmen in a shop, who are not put under an obligation of secrecy, is publication. *Humpherson* v. *Syer* (per *Fry*, L.J.), 4 R. P. C. 415; *Westly Richards & Co.* v. *Perkes*, 10 R. P. C. 193.

But where the member of the public who knew of the invention is a rival inventor who gained his knowledge by discovery, or from abroad, and did not protect or publish his invention, then his knowledge is not "public" so as to invalidate a subsequent patent,[1] even although he disclosed it *in confidence* to his own workmen or advisers.[2] (See *post*, p. 25.)

(2) *Cases affecting Publication by the Patentee himself.*

Lending a newly invented machine to a friend to be tested in a mill is not necessarily publication. *Bentley* v. *Fleming*, 1 C. & K. 587.

Experimental user, by testing an invention for laying cables, although in the execution of a contract, is not publication. *Newall* v. *Elliott*, 4 C. B. N. S. 295, *post*, p. 201.

The inventor of a new machinery for a crane for building harbour works used it on a contract in which he was engaged for several months prior to his application for a patent; his workmen and others could see it at work. This was publication. *Adamson's Patent*, 25 L. J. Ch. 456.

Sending a traveller round with samples of a new invention for the purpose of soliciting custom is publication. *Hancock* v. *Somervell*, New Lond. Journ. Vol. 39, p. 158.

The patentee was appointed along with two other gentlemen under the provisions of an Act of Parliament, as a referee, to make inquiries into the question of gas-purification. It was their duty to inquire as to how far gas could be practically purified by certain companies. If they found that by any means the amount of impurity could be limited to a certain amount, they were to prescribe the maximum

[1] *Dollond's Patent*, *post*, p. 50.

[2] *Gadd* v. *Mayor of Manchester*, *post*, p. 354.

amount accordingly. The discharge of this duty necessitated the publication of the means of limiting the impurity, otherwise the companies could not comply with the proposed regulations. The patentee thought that a method devised by him was novel. He disclosed it in confidence to his colleagues, who consented to keep it secret for a short time. Consequently the report containing a description of the alleged new method, although drawn up on the 31st of January, 1872, was not sent to the Board of Trade until the 27th of March, meanwhile the patentee applied for a patent on the 9th of March. His complete specification was filed in due course. *Held* by the House of Lords that the alleged invention was published on being communicated to the patentee's colleagues and embodied in the report of the 31st of January, 1872. *Patterson* v. *Gas Light and Coke Co.*, 3 App. Ca. 239.

A patent for an improvement in the folding mechanism of a printing-machine was granted from the 5th of December, 1885. The invention had been successfully worked in America. On the 26th of June, 1885, the patentees agreed to supply and set up the invention in the offices of the *Liverpool Mercury*. The work was to be completed by and under the supervision of the patentees. It was worked on days between the 19th and 21st of November, and defects were then remedied; and again from the 26th to 28th for printing the paper. Defects were again remedied, and it worked all right. It was run again successfully from the 3rd to the 5th of December. *Held* (by the Court of Appeal) that the patent was invalid. *Hoe* v. *Foster*, 16 R. P. C. 33.

It is not publication for the inventor to disclose his invention in confidence to professional or expert advisers or workmen employed by him to make experiments with the invention,[1] but if any of these persons, in breach of his duty, disclose the invention to others, then it becomes published.[2]

(3) *Publication by Documents.*

The foregoing general rule as to publication applies also to the third mode of publication, namely, by means of documents, whether they be descriptions in a book, drawings, or specifications for patents.[3] In the case of specifications, however, there is this difference, that when a specification is available to the public it is published in law as well as in fact.[4] A specification of a prior

[1] *Morgan* v. *Seaward*, 1 Webs. 194.
[2] Per *Fry*, L.J., in *Humpherson* v. *Syer*, 4 R. P. C. 4-5.
[3] See *Lang* v. *Gisborne*, and notes thereto, *post*, p. 221.
[4] *King & Co.* v. *Anglo-American Brush Corp.* (per Lord *Watson*), *post*, p. 344.

patent describing the same invention has always been regarded as an anticipation, not only because it shows the want of novelty in the later invention, but that the later patentee is not the *first* (although he may be a *true*) inventor.[1]

But no invention for which an application for a patent is made after sect. 1 of the Act of 1902 comes into force, will be held invalid *merely* because it has been described in a specification deposited in pursuance of an application more than fifty years old.[2]

The circumstances of each case must be separately considered,[3] and also the probability of persons wanting to read the publications as soon as brought out.[4] The fact that the documentary anticipations are the result of the patentee's own labour does not affect the issue.[5]

Illustrations of Documentary Publications.

Sale of a few copies of a foreign book in England. See *Lang* v. *Gisborne*, and notes thereto, *post*, p. 221.

The patent in question was for a roller skate. The claims of the American specification with editor's comments and explanations were published in the *Scientific American* and sent over to the British Patent Office, but the description was not sufficient to make the skate from. One copy of a book by a Mr. *Jewitt* was sent to the Patent Office Library on the 20th of July, 1865. The book was never entered in the donor's list nor in the catalogue, it was placed in a private room, and never asked for till 1875. It was discovered in the library before Christmas, 1875. *Held*, that this was no evidence of publication in March, 1875. *Plimpton* v. *Malcomson*, 3 Ch. D. 531.

In addition to the evidence in the preceding case it was proved that in or about the year 1867 the sub-librarian of the Patent Office saw *Jewitt's* book on a shelf in the corridor leading to the public room, the corridor being open to the public. Subsequently in the new library it was placed in a room upstairs where other American books were kept. The officials were never asked for it, nor was it entered in any catalogue. *Held*, that there was no evidence of publication. *Plimpton* v. *Spiller*, 6 Ch. D. 412. (The copy was

[1] *Huddart* v. *Grimshaw* (per Lord *Ellenborough*, C.J.), 1 Webs. 86, and note thereto. Per Lord *Campbell* in *Househill Co.* v. *Neilson*, 1 Webs. 718 *n*.

[2] 2 Ed. VII. c. 34, s. 2, *post*, p. 524.

[3] See notes to *Lang* v. *Gisborne*, *post*, p. 222.

[4] *Pickard* v. *Prescott*, *post*, p. 339.

[5] For two instances of this, see *Pickard* v. *Prescott*, *post*, p. 339, and *The Electric Construction Co.* v. *Imperial Tramways Co.*, *post*, p. 435.

proved *not* to have been known to the public. *Harris* v. *Rothwell*, 4 R. P. C. 231, 282.)

Publication by means of diagrams annexed to a German description. See *United Tel. Co.* v. *Harrison*, *post*, p. 282.

One copy of a book written in French containing an alleged description of an invention reached England, and was placed in the library of the British Museum. It was indexed under the author's name. Enquirers in any branch of study might as a favour be allowed to see the books relating to a particular subject on the shelves, otherwise they must write a docket giving the index reference. The work in question was mentioned in two catalogues in England. *Held*, that there was no evidence of the publication of the contents of the book. *Otto* v. *Steel*, 3 R. P. C. 109.

The patent in question was dated the 16th of April, 1880. On the 9th of December, 1878, and the 5th of February, 1880, two German specifications were received at the Patent Office. These were according to the usual course kept in boxes in numercial order and accessible for use by the public. In due course they were bound with others and placed on the shelves of the Patent Office library for public use. *Held* by the Court of Appeal that there was evidence proving publication of the invention described in the German specification. *Harris* v. *Rothwell*, 4 R. P. C. 225.

A patentee sent instructions to have his invention made in Paris. A description of it was inserted in a French Ophthalmic Journal usually sent to certain subscribers in the United Kingdom. As to what is evidence of their having read the description, see *Pickard* v. *Prescott*, *post*, p. 339.

Amount of Disclosure in Prior Publications.

Publication to constitute anticipation must be such that it fully discloses to those who are presumed to see or read it the invention in question.[1] If the alleged anticipating invention be not complete so as to be workable it is no disclosure at all, for it tends to lead the public to think that the device or process in part disclosed is based on wrong principles to effect the object desired, and so tends to discourage further attempts in the same direction.[2] But a distinction must be observed between the invention and the means for

[1] See *Betts* v. *Menzies*, and *Betts* v. *Neilson*, and notes, *post*, pp. 218, 219, 220; *Otto* v. *Linford* (per *Brett*, L.J.), and notes, *post*, p. 289; *Pneumatic Tyre Co.* v. *Casswell* (per Lord *Macnaghten*), 16 R. P. C. 542, l. 46.

[2] *Galloway* v. *Bleaden*, 1 Webs. 525. *Jones* v. *Pearce*, 1 Webs. 124, followed in *Household Co.* v. *Neilson*, 1 Webs. 709, 716. *Heath* v. *Unwin*, 2 Webs. 277. See *Murray* v. *Clayton*, *post*, p. 249; *Hills* v. *London Gas Light Co.*, and notes, *post*, pp. 208, 210, 212.

performing it; the former may be fully disclosed without sufficient information having been given under the latter head to enable workmen to put the invention to actual use.[1]

Illustrations.

For illustration of the failure of a model to anticipate, see *Hills* v. *London Gas Light Co.*, *post*, p. 211.

A new rolled metal was described in a specification in 1804. It was not put into commercial use. Skilled workmen by reading the specification could not produce a metal of similar manufacture patented in 1849. The patent for the latter was valid. *Betts* v. *Menzies*, *post*, p. 218.

An alleged anticipation described a lamp with a circular wick, but it was unworkable. The substitution of a flat wick, so that, as used in the lamp, it was folded into a circular shape, is a patentable invention. See *Hinks* v. *Safety Lighting Co.*, *post*, p. 257.

See also facts in *Murray* v. *Clayton*, *post*, p. 249, and *Otto* v. *Linford*, *post*, pp. 283, 289.

In 1877 a patent was taken out for a door-fastener. On pulling a handle the bolt was withdrawn, but on pushing the door to close it the bolt projected too soon. The device was abandoned as useless. This did not anticipate a similar contrivance in 1888, in which by a slight alteration the difficulty was successfully overcome. See *Kaye* v. *Chubb*, *post*, p. 315.

The patent in question was that for Dr. *Hopkinson's* "three-wire" system of distributing electricity in incandescent lighting, constancy of pressure in the consumer's part of the mains being important. It consisted of joining up two dynamos in series one for each set of installations and employing a "middle wire" to convey the difference of the currents between the junction of the dynamos and the main common to the installatior. An alleged anticipation consisted of an installation at the *Alexandra Palace*, in which two arc lamps were set up, the current to each from a separate dynamo returning by a common conductor. The dynamos were at first "in parallel," but one of them immediately (owing to instability of electrical equilibrium) became "reversed" (field magnets becoming de- and re-polarized), so that the dynamos ran "in series." The discovery of this did not convey to the mind of the engineer the means of reducing conductors or maintaining the pressure in parallel incandescent lighting. It was no anticipation. *Hopkinson* v. *Kensington and Knightsbridge, &c.*, 10 R. P. C. 61.

The patent in question was for a new basic dye stuff. The invention

[1] Discussed in notes to *Hills* v. *Evans*, *post*, p. 224, and in *King & Co.* v. *Anglo-American Brush Corp.*, *post*, pp. 341, 345.

was based on the discovery that rhodamine acted as an acid. The alleged anticipation contained the statement of an erroneous theory to explain the process therein claimed. This erroneous specification pointed away from the use of the unconverted rhodamine base, although the inventor in fact used it thinking it was another substance. This is not an anticipation. See *Badische Anilin, &c.* v. *La Societé Chimique des Usines du Rhone*, *post*, p. 407.

The patent in question (*Haddan's*, 1878) was one for "compound winding" of dynamos. The alleged anticipation consisted of a passage in *Varley's* specification, 1876, but there was no claim therein for compound winding, nor illustrations of it, nor directions for doing it in practice. *Clark's* specification, 1875, disclosed shunt winding, but was unknown to (nent electricians at that date. It was proved that *Varley* knew of it, hence that other electricians might have known of it also. *Held*, that *Varley's* specification, when read with the knowledge disclosed in *Clark's* specification of 1875, disclosed *Haddon's* invention. See *King & Co.* v. *Anglo-American Brush Corporation*, *post*, pp. 340, 344, 345.

Exhibitions.

Special provisions are made for the benefit of inventors who wish to exhibit their most recent discoveries at industrial or international exhibitions. To obtain this benefit the exhibitor must give the Comptroller notice of his intention to exhibit. The application for the patent must be made within six months of the opening of the exhibition.[1]

His Majesty may by Order in Council declare at any time that the foregoing provisions shall be extended to any industrial or international exhibition held out of the United Kingdom and mentioned in the Order. The condition of giving notice to the Comptroller may by such Order be suspended or made subject to conditions.[2]

The effect of the provisions are that the right of the inventor or his representative to obtain provisional protection is not prejudiced by the exhibition of his invention at the industrial or international exhibition, or to publication of any description of the invention during the period of the exhibition, or the use of the invention for the purpose of and in the place of the exhibition, or the use by others without the priority or consent of the inventor elsewhere during the holding of the exhibition.[3]

[1] Sect. 39 of the Act of 1883, *post*, p. 499. [2] Sect. 3 of the Act of 1886, *post*, p. 518.
[3] Sect. 39 of the Act of 1883, *post*, p. 499.

Identity of Inventions.

Under the new procedure (*post*, p. 116) the applicant for a patent, or his agent, will have to consider in many cases whether the inventions disclosed in prior specifications are included in the claims he puts forward in his specification. He should be satisfied, and should be prepared to satisfy the Comptroller if necessary, that his claims, either as originally drafted or as amended on consideration of alleged anticipations, do not include inventions disclosed in previous specifications. In addition to the principles affecting publication generally, those relating to "documentary anticipations" (*ante*, pp. 25–27) must be considered. The following considerations should also be borne in mind in comparing an invention with an alleged anticipation :—

A patent being invalid if the claim include any invention already published[1] or protected, it becomes important to consider the conditions under which two inventions are to be considered "identical." An invention for this purpose "includes" one already known if the claim be such that the monopoly granted by it would cover the earlier manufacture, so that the patentee could prevent others from doing what had been known before.

The comparison in any given case is between the alleged anticipation and a single claim in the specification under consideration ; the point to be considered is whether the claim in question claims the earlier invention, that is, includes it in the monopoly claimed.

A patentable invention has been defined (*ante*, p. 9) as the *application of principles* to produce certain results,[2] or the new results if vendible themselves. Hence the first step in comparing two inventions is to ascertain in the case of each (1) what are the principles applied, (2) the mode of application, and (3) the immediate result or thing produced. Two inventions will be identical when the same principles are applied in the same manner. For instance, in combinations the same principles are applied in the same manner when the elements of the combination (*ante*, p. 16) discharge or

[1] *R.* v. *Else*, *post*, p. 180; per Lord *Eldon*, L.C., in *Hill* v. *Thompson & Forman*, and notes, *post*, p. 184.

[2] See *ante*, p. 9, and also Lord *Hatherley*, L.C., in *Cannington* v. *Nuttall*, *post*, p. 248.

perform the same functions in the same way. If the manufactures compared together (the subjects of the claim and alleged anticipation respectively) be vendible articles as distinguished from the mode of producing them, then they are identical when they consist of the same article or substance. If the inventions be processes or methods, then the similarity of the principles and the mode of their application must be compared together, as the resulting products may be the same although the modes of making—that is, the inventions—may be different.

Inventions may be similar in outward form and yet different in the principles applied, or apparently different in form and yet similar in principles and their application.

Claims including what was old.

One claim out of twelve in a specification was for a certain mode of construction of ships with iron frames; it was wide enough to include what was previously known, hence the patent was invalid. See *Jordan* v. *Moore*, *post*, p. 243.

A patentee claimed "a mode of producing or preparing stripes" of certain materials in a certain manner, "and of reweaving" them to produce certain results. This constituted two separate claims for producing and weaving; the former being old, the patent was invalid. *Templeton* v. *MacFarlane*, 1 H. L. Ca. 595.

Webb's process (1891) of concentrating sulphuric acid gave results commercially very superior to those of *Chance's* process (1871), but both consisted of the application of the same principles and the claim in *Webb's* specification was wide enough to include *Chance's* method. *Webb's* patent was invalid. See *Kynochs, Ltd.* v. *Webb*, *post*, pp. 425, 428.

If the differences between the old and new inventions be such as to introduce a new principle into operation in the later invention they cannot be identical. This difference of principle may be apparent in the result attained, or in cases of a new process or method for producing an old result or attaining an old object it may be apparent in some distinctive feature in the method, such as greater speed. It is this difference of function, and not the mere form of the inventions, that must be looked to as affording evidence of the new or different principle.

Inventions almost similar in Form, but different in Principle.

Pavement lights, like those used in decks of ships, had been made of such form that the light passing through was refracted and so spread in the space below. An improvement consisted in so shaping the glass prisms that one side acted as a reflector. Thus the principle of internal reflection of light was brought into play. See *Hayward* v. *Hamilton*, *post*, p. 277.

A new disinfector consisted of an inner disinfecting chamber and an outer chamber, to both of which steam could be introduced. The alleged anticipation consisted of the same elements. But the new one was constructed of such strength that superheated steam under considerable pressure could be employed, thereby greatly accelerating the process. The invention was novel. See *Goddard* v. *Lyon*, *post*, p. 358.

See *Chamberlain* v. *Bradford (Mayor of)*, *post*, p. 467.

On the other hand, if the same principles be applied, and in the same manner, then the inventions will be identical, although their outward form may at first sight appear quite different.

Inventions different in Form, but identical in Principle.

The invention in question was Messrs. *Gaulard & Gibbs'* system of distributing electricity. It consisted in having an alternating current of high tension in the main, from which branch currents of low tension for use were taken off by means of transformers. The anticipation consisted of the use of transformers in *Jablochhoff's* system, in which the transformers were used for giving high tension currents to each lamp, so that each might be independent of the others. The later patent was invalid. See *Gaulard & Gibbs' Patent*, *post*, p. 329.

A mechanical stoker was constructed so that the coal was projected over the fire by means of doors on a shaft and moved intermittently so that when in operation they moved radially. The operating mechanism was applied to the shaft. Another stoker was constructed in which the door was replaced by a curved arm having a flap at its lower end. It was moved intermittently by mechanism inside the curved part instead of outside on the shaft. The radial action against the coal was the same. The second invention was held to be a mere colourable imitation of the first. See *Proctor* v. *Bennis*, *post*, p. 305.

In the more complex or "combination" inventions the ultimate principles may be the same, but the *manner of their application* in

the old methods or processes and in the new combination may not be the same. In such cases the comparison is made between the proximate principles or "elements" of the combination. If the elements be so combined in each case that the corresponding parts perform the same functions, then the inventions are identical, otherwise not. As the respective inventions consist of the *combining* together of certain elements, the nature of the combination is tested by the result of that *combining*, that is, by the functions discharged by the elements in the two combinations respectively.

Inventions in which the Combinations were apparently identical, but in which the Parts performed Different Functions.

The patent in question was for improvements in fire-proof floors. Flanged tubular lintels were so shaped and laid across the girders that the latter were covered with the concrete subsequently poured in. Alleged anticipations were similar. But owing to the lintels being placed askew they enabled the concrete to form in part a self-supporting arch from girder to girder. The older ones did not perform this function. The patent was upheld. See *Fawcett* v. *Homan*, *post*, p. 383.

In *Welch's* patent for securing rubber tyres wires were employed embedded in the cover and lying in the rim of the wheel. An alleged anticipation showed a similar contrivance. But *Welch's* wire operated by resisting extension due to air-pressure or by exercising contractile force on being screwed up. The other did not exercise this function. The patent was held valid. See the *Pneumatic Tyre Co.* v. *East London Rubber Co.*, *post*, p. 425.

Another form in which there may be a difference in the manner of the application of the same principle is in the extent to which the principle may be applied. If carried further in one case than another so as to produce different results, then the manufactures may be different.

Application of Same Principles, but to a Greater or Less Extent to produce a Different Result.

The patent was for an improved grooved tyre for wheels. The object was to produce by a cheap method an iron tyre with a dovetailed section for holding a rubber tyre. The method consisted in passing iron through a series of rolls, finally rolling the base flat to produce the required result. An alleged anticipation consisted of rolling by a similar method iron trough-shaped beams in which

no dovetailed section was required. This alleged anticipation did not carry the principle of successive rollings far enough, nor did the claim for the new tyre include the earlier stages of the process. See *Shrewsbury & Talbot Cab Co.* v. *Sterckx*, *post*, p. 377. [The article produced was a different one, *i.e.* a new manufacture.]

A dye substance was made by a certain process. It was discovered that if the process were stopped at a certain stage, a dye substance was produced possessing different properties but giving substantially the same colour. The shorter process was a patentable invention. *Leonhardt* v. *Kallé*, *post*, p. 362. [The resulting new dye substance possessed properties different to the old, and the newer method constituted a different process or manufacture.]

Minimum of Addition to Public Knowledge essential.

The consideration of that addition to the stock of public knowledge which is necessary and sufficient to constitute a patentable invention is a question of considerable difficulty. As has already been pointed out (*ante*, p. 20), a patent would be to "the hurt of trade,"[1] and "generally inconvenient," if it were granted for inventions (although actually "new manufactures") of so simple a nature that the monopoly so created would prevent skilled workmen from making the best use of the knowledge they already possessed. All new inventions must be the outcome of the inventive faculty of the mind (unless discovered accidentally or imported from abroad), hence it becomes a question of degree[2] as to the amount of ingenuity required to support a patent. This amount of ingenuity is frequently termed "invention."[3]

The term "invention" is therefore used in more senses than one, and very generally to denote the *manufacture* patented (*ante*, p. 6) and also in recent years to denote the *amount of ingenuity required* to support a patent. In each case the context will show in which way the term is to be understood. There is a distinction between "discovery" and "invention" used in the latter sense. One may discover either (1) a new principle, or (2) a new quality of a body, or (3) a new use to which old appliances may be put. Whether the

[1] *Harwood* v. *G. N. Ry. Co.* (per Lord *Westbury*, L.C.), 11 H. L. Ca., at p. 682; *Murray* v. *Clayton*, L. R. 7 Ch. Ap. 577 *n*; *Saxby* v. *Gloucester Wagon Co.*, 7 Q. B. D. 312.

[2] Per *Blackburn* and *Shee* JJ., in *Harwood* v. *G. N. Ry. Co.*, *post*, p. 207. See note to *Morgan* v. *Windover*, *post*, p. 324.

[3] See remarks of *Bramwell* and *Brett*, L.JJ., in *Hayward* v. *Hamilton*, *post*, p. 280; also of *Smith*, L.J., in *Brooks* v. *Lamplugh*, *post*, p. 410; and cases reviewed by *Lindley*, L.J., in *Gadd* v. *Manchester*, 9 R. P. C. 524, *post*, p. 354.

subject of a "discovery" be a patentable invention or not depends on whether it be a new *manufacture*[1] (*ante*, p. 9), and one not obvious to skilled workmen when their attention is called to the necessity of producing a desired result;[2] or whether it be merely a principle or new use of an old manufacture.

The existence of inventive ingenuity is a matter of evidence. If there be evidence that skilled workmen could effect the invention in question without difficulty as soon as their attention is called to the need of it, then there is obviously no "invention." On the other hand, the fact that skilled persons sought in vain to solve the problem solved by the patentee is proof of sufficiency of ingenuity.[3] But the large majority of cases are those in which such evidence is not directly available, hence the necessity for ascertaining the sufficiency of ingenuity by other considerations, and by comparing the invention itself with what was known before.

Since, for the protection of skilled workmen, a certain *minimum* amount of knowledge is required to be added to the public stock by an inventor to maintain his patent, it is from the point of view of the workman that the question is to be considered. Therefore it does not matter if the patentee imported his invention from abroad (*post*, p. 48), or discovered it accidentally, or only arrived at it after prolonged experiment.[4] On the other hand, an inventor may, after much trouble and experiment, only arrive at a result that is not patentable, because it is no advance on what others, unknown to him, had already achieved.[5]

Illustrations.

The invention in question consisted in the mode of supporting the front of a carriage by C springs, formerly used at the back. It was proved that carriage-builders could effect this without any difficulty. The patent was invalid. See *Morgan* v. *Windover*, *post*, p. 323.

An invention, very simple when known, consisted of a mechanical combination for turning heavy forgings. Many unsuccessful attempts

[1] As to discovery of qualities of a new alloy: *Tindal*, C.J., in *Muntz* v. *Foster*, 2 Webs. 103; *Pirrie* v. *York St. Flax Spinning Co.*, 11 R. P. C. 449.

[2] See generally the remarks of *Lindley*, L.J., in *Lane Fox* v. *Kensington, &c.*, *post*, p. 350, and in *Gadd* v. *Mayor of Manchester*, and notes, *post*, pp. 354, 355.

[3] See Lord *Herschell's* observations in *Vickers* v. *Siddell*, *post*, p. 328, and those of Lord *Halsbury*, L.C., in *Taylor* v. *Annand*, *post*, p. 449; also *Gosnell* v. *Bishop* (per *Bowen*, L.J.), 5 R. P. C. 158.

[4] *Crane* v. *Price*, *post*, p. 197.

[5] For an example, see *Riekmann* v. *Thierry* (per Lord *Davey*), *post*, p. 394.

had been made to "meet the want" supplied by the device in question. The patent was upheld. See *Vickers* v. *Siddell*, and notes, *post*, pp. 324, 329.

A patent for an invention consisting of very simple mechanical improvements was upheld by the Inner House of the Court of Session on the ground that other inventive minds had been at work and failed to get over the difficulties surmounted by the patentee. *White* v. *Bertrams*, 14 R. P. C. 746.

See also *Taylor* v. *Annand* (per *Romer*, L.J. and Lord *Halsbury*, L.C.), *post*, p. 449, in which the existence of sufficiency of inventive ingenuity was proved in a similar way.

This necessary addition to the amount of public knowledge may be apparently very little—the alteration in shape (or the introduction of an equivalent [1]) in a mechanical contrivance producing new and better results by causing a difference in the operation of mechanical forces; or alteration in shape or strength of mechanical devices bringing new physical principles into operation; or alteration in physical conditions giving rise to new chemical reactions and improvements in processes or the production of new substances. But a large number of inventions consist in new combinations (*ante*, p. 16), arrangements, or applications of old and well-known things or processes. These it will be found more convenient to consider separately (*post*, pp. 38–46).

In those cases in which previous failures have been turned into successful processes or results, the amount of ingenuity may be apparently very little, but the invention itself be great;[2] for the previous attempts may not be "knowledge" at all (*ante*, p. 27).

Alterations of Shape or Strength constituting New Invention.

A new form of "flyer" for roving cotton applied known forces in a different way, producing steadier working of the machine. See *Seed* v. *Higgins*, *post*, p. 212.

New effects in pavement lights produced by alteration in shape bringing into play a different natural phenomenon. See *Hayward* v. *Hamilton*, *post*, p. 277.

Strengthening the structure of a disinfector to utilize dry steam under high pressure. See *Goddard* v. *Lyon*, *post*, p. 358.

[1] Per Lord *Halsbury*, L.C., in *Vickers* v. *Siddell*, 7 R. P. C. 303, l. 17.

[2] *Hinks* v. *Safety Lighting Co.*, *post*, p. 257. For instances of the application of this principle, see cases noted, *ante*, p. 28; also *Duckett* v. *Whitehead*, *post*, p. 370.

Compare also *Edison & Swan* v. *Woodhouse*, *post*, pp. 293, 297, in which the essence of the invention consisted partly in alteration of shape to avoid breakage by expansion of carbon.

See *Duckett* v. *Whitehead*, *post*, pp. 41 and 370.

Alterations in Physical Conditions producing New Chemical Inventions or Improved Results.

Heating a blast of air on its passage to a furnace. See *Neilson* v. *Harford*, *post*, p. 187.

Using a *dilute* instead of a stronger solution of cyanide of potassium to dissolve gold from ore, whereby gold is separated from baser metals, which the stronger solution could not do. See (as to claim 2) in *The Cassel Gold Extracting Co.* v. *Cyanide Gold Recovery Syndicate*, *post*, p. 369.

Toluene when treated with chloro-sulphonic acid was converted as to one half into toluene sulpho-chlorides and as to the other half into toluene sulphonic acids. Of the toluene sulphochloride only about one half was "ortho-" and useful, the other "para-" and useless. A chemist discovered that, by employing a large excess of chloro-sulphonic acid and keeping the temperature down to between 0° C. and 5° C., a much larger proportion of orthotoluene-sulphochloride —93 per cent. (instead of 25)—would be produced. Thus—

$$C_7H_8 + SO_2(OH)Cl = C_7H_7SO_2Cl + H_2O$$

The reduction of the temperature was not before suggested. *Held*, that the discovery of the new process was a patentable invention. *The Saccharine Corp., Ltd.* v. *The Chemicals and Drug Co., Ltd.*, 17 R. P. C. 28.

Proof of Ingenuity.

No general rule can be laid down as to the amount of ingenuity or of additional knowledge required to support a patent. From the reason for this minimum amount of ingenuity it follows that the existence of it can be proved by direct evidence if skilled persons can be proved to have attempted and failed to produce the result in question.[1] On the other hand, its absence is proved by showing that skilled persons could produce the desired result without difficulty as soon as they direct their minds to the subject.[2] Or skilled persons may give expert evidence as to whether or not a certain result could be attained without research or experiment on their part.[3]

[1] See cases of *Vickers* v. *Siddell*, *post*, pp. 324, 329; *White* v. *Bertrams*, 14 R. P. C. 746.

[2] *E.g.* cases of *Morgan* v. *Windover*, *post*, p. 323. See *Penn* v. *Bibby* (per Lord *Chelmsford*, L.C.), L. R. 2 Ch. Ap. 135, 136.

[3] See case of *The Lancashire Explosives Co.* v. *The Roburite, &c., Co.*, *post*, p. 396.

In the absence of such direct evidence the fact that the new invention met with a large sale and proved useful, *coupled with* the existence for some time of a previous demand for the alleged invention, will be evidence tending to show a sufficiency of inventive ingenuity, for it is to be presumed that skilled persons would, if they could, have supplied the want.

But novelty, great utility,[1] and a large sale alone do not prove inventive ingenuity, for the large sale may be due to changes of fashion, or to a large development in some other manufacture creating a demand for the article in question.

Illustrations.

Prior to *Gaulard & Gibbs'* Patent for distributing electricity, transformers were so wound as to take off a local current of higher tension than that in the mains. In the patentees' system transformers were constructed to take off low-tension currents from high-tension currents in the mains. The need of the new transformers arose merely from the development of electric lighting by glow-lamps. *Gaulard & Gibbs' Patent, post*, p. 329.

An invention consisted in the application to ladies' hats of a comb to secure the hat on the head. A large sale was proved, which was due to the coming into fashion of a mode of wearing hats in which the use of a skewer-like pin, or its equivalent, became necessary. The patent was invalid for want of sufficient ingenuity. *Savage* v. *Harris* (per *Kay*, L.J.), 13 R. P. C. 374.

For another illustration of great utility and large sale not being sufficient to establish sufficiency of inventive ingenuity, see *Cooper* v. *Baedeker*, *post*, p. 433.

For an example of a new application of an old thing meeting a long-felt want, see *Brooks* v. *Lamplugh*, *post*, p. 410.

Cases of Combination Patents.

By far the most numerous class of inventions are those which consist in the applications of principles, not directly, but indirectly, by the *combining together* of old things or processes, either by the bringing together of the old elements in a new way, or by altering the arrangement of the old elements, or by the application of old things to new uses (see *ante*, p. 16). In these cases it is the new

[1] Per Lord *Halsbury*, L.C., in *Riekmann* v. *Thierry*, *post*, p. 393; per *Rigby*, L.J., in *Castner-Kellner Alkali Corp.* v. *Commercial Development Corp.*, 16 R. P. C. 268, l. 40.

combination, as distinguished from the sum of its elements, that constitutes the addition to public knowledge,[1] that is to say, the invention in question.

Like all other inventions, to be patentable they must, besides others, fulfil these two conditions: (1) They must be "new manufactures," *i.e.* besides being a "manufacture," the claims must not include an old manufacture in the monopoly;[2] and (2) the invention must not be of such an elementary character as to interfere with skilled workmen making the best use of their knowledge.

With regard to the first of these conditions, the difficulty is to distinguish a "new" manufacture, *i.e.* the combination, from a mere rearrangement of the elements of an old manufacture or combination, which may only amount to a particular mode of using an old machine, or process. Hence it is of the greatest importance to ascertain in what the old "manufacture" consisted, whether it was a vendible machine, or a product, or a process as distinguished from *principles* (*ante*, p. 9), and *results* (*ante*, pp. 11–13). Similarly, the nature of the alleged new manufacture must be considered. One principal criterion is the comparison of the functions discharged by the several elements respectively in the old and new combinations. If they be the same, and no new function is attributable to the combination,[3] then the combination is not a new manufacture, but a mere rearrangement of old manufactures. Another criterion is the increased utility of the new combination.[4] This test is not conclusive, but is of great value.[5] Utility here mentioned is essentially comparative utility, and must be distinguished from that amount of utility necessary to support a patent, which is discussed *post*, p. 80.

As regards the second condition, the principles on which the presence or absence of sufficient ingenuity is ascertained have been dealt with *ante*, pp. 37, 38. In the case of combination patents, the requisite amount of ingenuity frequently consists in the *idea* of putting the old elements together; when done it may appear very

[1] *Cannington* v. *Nuttall*, *post*, p. 248; *Pneumatic Tyre Co.* v. *Casswell*, *post*, p. 381.

[2] *Hill* v. *Thompson* (per Lord *Eldon*), *post*, p. 184; *Huddart* v. *Grimshaw* (per Lord *Ellenborough*, C.J.), Dav. P. C. 279, 1 Webs. 87; *Bateman* v. *Gray*, Mac. 101.

[3] *Allen* v. *Oates & Green*, 15 R. P. C. 303.

[4] See *dictum* of *Tindal*, C.J., in *Crane* v. *Price*, *post*, p. 195, and notes; *Cannington* v. *Nuttall* (per Lord *Hatherley*, L.C.), *post*, p. 248.

[5] For illustration of its application see *Penn* v. *Bibby*, L. R. 2 Ch. Ap., 137, and as to its not being conclusive, see *Cooper* v. *Baedeker*, *post*, pp. 44, 431.

simple. This simplicity itself is apt to mislead,[1] unless one considers the state of the art or manufacture in question before and after the new combination was produced,[2] *i.e.* from the point of view of the skilled workman. Comparative utility is here again a great aid.[3] In the cases of the application of old things to new uses it is necessary to consider whether the old thing or combination is in the track of development of the art under consideration, for a skilled workman may have all the "common knowledge" of the art he practises, and yet not be presumed to know of the discoveries in other cognate manufactures.[4]

The applications of old things to new uses fall within the definition of combination patents (*ante*, p. 16). They may amount to new processes or methods, but must fulfil the same conditions as other combination patents.[5]

The application of the foregoing rules to a number of illustrative cases will now be considered. For convenience of reference they are arranged under the following heads, or divisions:—

Patentable.

1. Mechanical combinations of old elements amounting to new methods or inventions.
2. Combinations and rearrangements of processes constituting new manufactures.
3. Applications of old things to new purposes involving sufficient ingenuity to constitute invention.
4. Selections from known things or processes amounting to patentable inventions.

Not Patentable.

5. Combinations of old elements not amounting to patentable inventions.
6. New modes of manufacture falling short of patentable inventions.

[1] *Vickers* v. *Siddell* (per Lord *Herschell*), *post*, p. 328 and notes; *Fawcett* v. *Homan* (per *Rigby*, L.J.), *post*, p. 388.

[2] *Taylor* v. *Annand* (per *Romer*, L.J., and Lord *Halsbury*, L.C.), *post*, p. 449.

[3] *E.g. Vickers* v. *Siddell*, *post*, p. 324.

[4] *Penn* v. *Bibby* (per Lord *Chelmsford*), L. R. 2 Ch. Ap. 136. For illustrations, see *Gadd* v. *Manchester*, *post*, p. 351 and the *Shrewsbury and Talbot Cab Co.* v. *Sterckx*, *post*, p. 377.

[5] *Losh* v. *Hague*, 1 Webs. 208; *Harwood* v. *G. N. Ry. Co.*, *post*, p. 207; *Brooks* v. *Lamplugh* *post*, p. 410.

7. New uses of old means and processes not constituting patentable inventions.
8. New uses that are not manufactures.
9. Result only in question, insufficiency of invention in the results.

1. *Mechanical Combinations of Old Elements amounting to New Methods or Inventions.*

A machine was invented for singeing lace by passing it over rollers and across a gas-flame, between it and the chimney. Each of the parts was old. The gas-flame, however, replaced an oil one. The result was a machine of great utility. *Hall* v. *Jarvis*, *post*, p. 186. This is an instance of a new manufacture by making a new machine.

An appliance for turning forgings consisted of a very simple combination of old mechanical parts. *Vickers* v. *Siddell*, *post*, p. 324. Here the satisfying of a want proved inventive ingenuity, that is, that the invention was not obvious.

A hoist for heavy bodies consisted in a combination of an arrangement of expanding segments and a certain form of brake. The segments allowed of rotation of an axle in one direction and stopped it in the other. They performed this function in older machines. But as applied to hoists the segments did not perform the same function as regards raising and lowering as other and similar ones did in former hoists. The whole constituted a new hoist. See *Morris & Bastert* v. *Young*, *post*, p. 371. Here the function discharged by the respective parts in the old and new machines differed.

An invention consisted in removing a partition and altering the shape and relative positions of old parts in a water-closet to produce successful results. See *Duckett* v. *Whitehead*, *post*, p. 370. Here the alterations enabled natural laws to work more effectively; failure being turned into success proved ingenuity.

A new combination consisted of alterations in a gig-mill so that a new mechanical result was obtained, viz. the power to obtain a known *and* variable motion for the raising rollers as required. Previously known *or* variable motion could be obtained, but not both combined. See *Moser* v. *Marsden*, *post*, p. 374. Here the altered machine performed new functions, hence was a "new" manufacture; new mechanism being introduced, it became a new machine. Compare *Kay* v. *Marshall*, *post*, p. 190.

A valve for inflating tyres consisted of an arrangement of old elements which had been used to perform the same functions in other valves, but not all in the same valve, nor for the same purpose. The

new valve was very useful and a great success. The combination itself formed the addition to public knowledge. See *The Pneumatic Tyre Co.* v. *Casswell*, *post*, p. 381.

Old means, lintels, girders, and concrete or cement were so arranged that the concrete formed a self-supporting arch, which was a new result. See *Fawcett* v. *Homan*, *post*, p. 383. The parts here fulfilled functions different from those in old floors, hence the new floor was a new manufacture, natural forces of weight and reaction acting differently.

A machine for inserting "stop-press" news consisted in a combination of old mechanical parts. When done it appeared simple. Nothing like it had been attempted to supply a long-felt want. See *Taylor* v. *Annand*, *post*, p. 445. The test was the state of the art before as compared with it after the invention.

2. *Combinations and Rearrangements of Processes constituting New Manufactures.*

The invention consisted in waterproofing fabrics. By the old method fabrics were immersed in a solution of alum and soap. The novelty consisted in first immersing the fabrics in a solution of alum with some carbonate of lime, which neutralized the alum, and then a second immersion in a soap solution which gave the requisite oily quality to each fibre. The result left the fabric pervious to air: the old process waterproofed the surface only instead of the separate fibres. *Helliwell* v. *Dearman*, 1 Webs. 401 (*n*). The new properties of the result proved novelty of manufacture.

A rearrangement of old things and parts in a glass furnace so as to effect an improved process, by making former defects cure themselves, is a patentable combination. See *Cannington* v. *Nuttall*, *post*, p. 245. Here the currents of air performed new functions.

A gas-lamp was so constructed that the air was heated before reaching the flame. In a new arrangement the heated air was directed to a particular part of the flame. The lamp was so arranged that the glass was kept cool and from cracking by a cooling current of air. The new lamp was a great improvement. *Wenham Gas Co.* v. *Champion Gas Co.*, *post*, p. 336.

Ingredients were treated in a way described in previous specifications. Chemists conversant with the subject would have known that the result would be an explosive. But experts testified that research and experiment were necessary to produce the powder made. There was no evidence that chemists would have foreseen that the result would possess the qualities necessary for a useful powder. This was a new manufacture of great ingenuity. See *The Lancashire Explosives Co.* v. *The Roburite, &c., Co.*, *post*, p. 394.

3. *Applications of Old Things to New Purposes involving Sufficient Ingenuity to constitute Invention.*

Tubular braided wire was old, and had been used for pillows, handles, etc. A method of clamping it to make a new article, viz. a lady's bustle, which was both novel and useful, was *held* to amount to a patentable invention. See *Thomson* v. *American Braided Wire Co.*, *post*, p. 319.

A certain arrangement for automatically keeping pontoons level was applied to a gas-holder to keep it level without the aid of pillars above ground. The forces to be considered in each case were different. See *Gadd* v. *Mayor of Manchester*, *post*, p. 351. Here the older application was in a different branch of engineering.

Paper tubes had been used in dry spinning of cotton, wools, etc. They were slipped on rigid pirns which were attached to the spindles. The paper tubes and yarns wound thereon (*i.e.* "cops") were removed from the pirns and used in shuttles for weaving. In wet spinning of flax rigid pirns were used on which the spun flax was wound, both were removed from the spindles and dried. The flax became slack on the pirns, which had to be extended by screws. The invention consisted in applying paper tubes to wet spinning. All were removed from the spindles as before, the pirn preventing the tube from collapsing during the drying process. That process shrank the pirns and made them removable from the tubes then able to maintain the flax *in situ*. *Pirrie* v. *York Street Flax Spinning Co.*, 11 R. P. C. 429. The use of the tubes was different in the new mode; the parts discharged different functions; a new difficulty had to be met.

An old device for allowing a shaft to rotate in one direction and not in the other was applied in a hoist for raising and lowering heavy bodies. This application constituted a patentable invention of the particular form of hoist produced, that particular mode of application being new. *Morris & Bastert* v. *Young*, *post*, p. 371.

4. *Selections from Known Things or Processes amounting to Patentable Inventions.*

Earlier processes (which were disclaimed) depended on the use of "oxides of iron" in gas purification. Only one kind, the hydrated ferric oxide, would do. The discovery of this fact and the method of its application constitute a patentable invention. See *Hills* v. *London Gas Light and Coke Co.*, *post*, p. 208.

Ascertaining, by laborious experiment, a particular class of material amongst many, and of particular processes amongst many, for the production of paraffin oil, thereby creating a useful public trade, is

a "manufacture" and "invention." Something had, at the date of the patent, to be ascertained to render the discovery of paraffin oils useful to the public. *Young* v. *Fernie*, 10 L. T. N. S. 861; 33 L. J. Ch. 192.

5. *Combinations of Old Elements not amounting to Patentable Inventions.*

A combination of a grooved or roughened handle (an old contrivance) with a knob at the end (formerly used in hammers) in a tennis-racquet, is a mere alteration of old things in a known way. *Slazenger* v. *Feltham*, 6 R. P. C. 234.

In a known class of mincing-machines a screw arrangement of blades performed the double function of pressing the meat against knives and forcing it forwards slowly into the skins. In another class a screw forced the meat against a perforated plate, where it was cut by revolving knives mounted on the same shaft as the screw, but the screw did not go further than the plate. A combination, in which the screw on same shaft was continued to the other side of the plate, so as to press the meat into the skins as in the first class of machines, proved to be a very useful machine, but there was no difficulty to be overcome in so placing the old parts together, hence no patentable invention. *Williams* v. *Nye*, 7 R. P. C. 62. The parts so arranged performed the same respective functions as in the older machines.

Improvements in reels for holding fabrics consisted of a combination of the reel or frame with hooks made in a particular way. The new articles were largely used in preference to the old. *Held*, that there was no sufficient ingenuity shown, although there was an improved result. *Longbottom* v. *Shaw*, *post*, p. 332.

Pince-nez, or double eyeglasses, constituted a combination of old parts. The new glasses had the additional feature of the added part. The parts performed together the same functions they did before. No new quality was given to the glasses by the addition, and there was no difficulty in making the combination. See *Wood* v. *Raphael*, *post*, p. 398. There were here no new results due to the *combining* of the old elements.

6. *New Modes of Manufacture falling short of Patentable Inventions.*

Improvements in felt handles for bicycles, etc., consisted in grooving sheet felt, making it flexible so as to bend round the handles. The old method consisted in boring out solid blocks of felt. Some of these had been grooved on the outside. There was great utility and a large sale. See *Cooper* v. *Baedeker*, *post*, p. 431.

Alleged improvements in attaching ferrules which were of little or no utility were held not to constitute invention in *Wilson Bros. Bobbin Co.* v. *Wilson & Co.*, *post*, p. 463.

7. *New Uses of Old Means and Processes not constituting Patentable Inventions.*

A method of forming cases of rush or straw for the protection of bottles consisted in the use of a mandril shaped like a bottle. The use of mandrils for other and similar purposes was well known. This is not an "invention." *Patent Bottle Envelope Co.* v. *Seymer*, 28 L. J. C. P. 22. This is simply a case of "analogous use."

A specification described strengthening and polishing linen and cotton yarns by friction-brushes. The patentee of a subsequent alleged invention described in his specification the same process applied to yarns of wool, hair, etc. This is not a "new manufacture," but only the application of a known process to new material. *Brooke* v. *Aston*, 28 L. J. Q. B. 175 (followed in *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 135; *Rushton* v. *Crawley*, L. R. 10 Eq. Ca. 529; *Tickle-penny* v. *A. and N. Co-op. Soc.*, 5 R. P. C. 408; *Gadd* v. *Mayor of Manchester*, 9 R. P. C. 524, and other cases).

Fish-plates for railways formerly had the heads of bolts secured from turning by being squared and sunk in square holes. Grooving the plate to effect this by the sides of the grooves holding the opposite sides of bolt-heads constituted the novelty. Channelled iron had been used similarly on bridges. This is the mere application of a known device to an analogous purpose, not amounting to a patentable invention. See *Harwood* v. *G. N. Ry. Co.*, *post*, p. 204.

Facts compared and last case followed in *Horton* v. *Mabon*, *post*, p. 221.

An alleged invention consisted in using old electrical elements, viz. alternating dynamo, high-tension currents in the mains, and transformers to produce a new result of drawing off *low-tension* currents for lighting purposes. See *Gaulard & Gibbs' Patent*, *post*, p. 329. Here there had been no previous demand for such a combination.

8. *New Uses that are not "Manufactures."*

A new mode of using a machine already known, by altering the relative distances of its parts is not patentable. Before maceration and wet-spinning of flax were introduced machines were adjusted according to the length of fibre, in cotton not over 1¼ inches, in flax 14 to 36 inches. *Kay* invented new machinery for preparing flax by maceration, and made "wet-spinning" successful. Part of his claim was for "new machinery" for spinning flax. This new machinery was simply the old rearranged so that the retaining and drawing rollers were placed 2½ inches apart instead of the old distance of 14 inches or more. This is only a new mode of using the old machine, and not a new machine. *Kay* v. *Marshall*, 5 Bing. N. C. 492. (Compare *Moser* v. *Marsden*, noted *ante*, p. 41,

and *post*, p. 374). In this case the "manufacture" claimed in the specification was the *machine*, not a process. See *post*, p. 190.

The discovery that by using machinery in a particular way a new pattern and lustre could be produced on embossed fabrics is not the discovery of a *new manufacture*. See *Ralston* v. *Smith*, *post*, p. 230.

See *Partington and others* v. *The Hartlepool Pulp Co.*, noted *ante*, p. 22.

A more skilled and experienced application of old known tools to a particular purpose, viz. cutting necktie linings out of swansdown, is not a patentable invention. See *Dredge* v. *Parnell*, *post*, p. 420.

A transmitting printing sheet made of special paper and prepared by waxing was claimed for use in a typewriter. Waxing paper was known before. The claims were wider than for the mere mode of preparing the paper. The patent was invalid. See *Dick* v. *Ellams' Duplicator Co.*, *post*, p. 430.

It must be remembered that it is the invention *as claimed* that is to be considered in all cases. For the extent of the monopoly depends on the claims,[1] and the consideration of validity, as regards prior knowledge, depends ultimately (*ante*, p. 19) on the extent to which the monopoly affects the public. The importance of the actual claim is seen in the two following illustrations:—

9. *Results only in Question, insufficiency of Invention in the Results.*

The invention was one for casting a tubular boiler (such as is used in hothouses) in one piece. It was "causing the upright tubes and the lower hollow ring to be all cast at one time, and thus to form one casting." The hollow ring joined the upright tubes together at their lower ends. The claim was for "casting a boiler such as described in one piece." Boilers had previously been cast in parts: tubes, hollow rings, &c., and subsequently cemented together. *Held*, that there was no subject-matter, the whole thing being only a difficult piece of casting (32 L. J. C. P. 9). It might have been otherwise had the claim been confined to an "improved mode of casting" the boiler, instead of one for the boiler itself cast in one piece (32 L. J. C. P. 291). *Ormson* v. *Clarke*, 32 L. J. C. P. 8, 291. (Followed in *Newsum* v. *Mann*, 7 R. P. C. 307.)

A new eyelet coated with celluloid for boots was claimed, but not the mode of manufacture. It was an improved eyelet and useful, but the finished article as regards the attachment of the celluloid was analogous to hooks used previously. See *Riekmann* v. *Thierry*, *post*, p. 391.

See also *R.* v. *Else*, *post*, p. 180.

[1] *Parkes* v. *Stevens*, L. R. Ch. Ap. 38, 39; *Hinks* v. *Safety*, &c., 4 Ch. D. 612; *Gibson* v. *Brand*, 11 L. J. C. P. 162.

Rights of Subsequent Inventors.

As a patentee must not obtain such a monopoly as would interfere with the persons making use of the knowledge they already possess, so, too, he cannot interfere with subsequent inventors by obtaining a monopoly for more than he has actually invented. The risk of claiming something that may not prove workable is too great to be frequently attempted. This question cannot be well discussed at this stage, for it cannot be severed from the consideration of the disclosures which the patentee is bound to make in his specification for the information of the public, and as a condition of obtaining his grant. But a difficulty arises from the fact that the interests of rival inventors, and interference with them, date from the commencement of the monopoly, that is, the date of the application, whereas the time for filing the complete specification is some months later. On the one hand, the interests of certain members of the public (*i.e.* rival inventors) require that the patentee's monopoly be confined to what he had invented at the date of his application; and, on the other hand, the interests of others (*i.e.* the manufacturers) require that his knowledge at the date of his final specification be fully disclosed. The full discussion of this subject is reserved until the question of the specifications is considered.

CHAPTER IV.

THE PERSONS TO WHOM PATENTS MAY BE GRANTED.

Importers of inventions—True and first Inventor, p. 49—Assistance of Workmen, p. 50—Prior grant, p. 51.

Importers of Inventions.

As patents are granted as rewards for improving industries within the realm by introducing new manufactures, it was settled, even before the Statute of Monopolies, that the first importer of a new manufacture could obtain a patent in the same way and on the same conditions as a first inventor. Hence persons can obtain patents for inventions "communicated from abroad."[2] They may hold these patents as trustees for the inventors abroad or in their own right according to the nature of the transactions, if any, between them and the foreign inventors.[3] An "importer" therefore comes within the definition of an "inventor."

If the inventor abroad be a patentee in certain foreign countries, or in any British dominions oversea, he has a priority of the right of application over residents within the realm.[4] This right of priority must be exercised within twelve months.[5] The method of exercising it is discussed *post*, p. 176.

A patent may be granted to foreigners as well as British subjects, to two or more persons, one of whom at least must be the "true and first inventor."[6] This last provision meets the difficulties of those

[1] *Edgebury* v. *Stephens*, 2 Salk. 447; 1 Webs. 35; 1 Hawk. P. Cr. i. c. 79, s. 20 (quoting *Noy*, 182, 183).

[2] "Abroad" includes British Colonies. *Rolls* v. *Isaacs*, 19 Ch. D. 268; 45 L. T. 704.

[3] *Beard* v. *Egerton*, 3 C. B. 97. As to breach of trust by agent, see *Milligan* v. *Marsh*, Jur. N. S. 1083; *Nickels* v. *Ross*, 8 C. B., at p. 723.

[4] Sect. 103 of the Act of 1883, *post*, p. 508.

[5] Art. 4 of the International Convention, *post*, p. 582, 1 Ed. VII. c. 18.

[6] Sect. 4 of the Act of 1883 (as explained by sect. 5 of the Act of 1885). *post*, p. 486. For example of failure of this condition, see *Marshall's Appl.*, 5 R. P. C. 661.

inventors who are unable to perfect their inventions without the aid, financial or other, of persons not inventors.

The point has been raised but not decided that a foreigner who is an alien enemy cannot be a patentee ;[1] but as licences to trade may be granted by the Crown to alien enemies,[2] there appears to be no reason why a patent should not be granted.[3] An "alien enemy" is a person who is the subject of a monarch, or citizen of a state that is at war with His Britannic Majesty, although such an one be a resident within the United Kingdom. At all events such an alien enemy has no right to sue for infringements, or seek any redress in British Courts ; but if he be licensed to trade he may sue by a trustee.[4]

It was thought that a clergyman engaged in spiritual work could not be a patentee, inasmuch as he is prohibited from trading by 1 & 2 Vict. c. 106, s. 29 ; but it must be observed that the prohibition extends only to trading "in person," and does not prohibit one from being a shareholder in a trading company : see 4 & 5 Vict. c. 14. There can be no doubt that he may be a patentee in the capacity of representative of a deceased inventor.

True and First Inventor.

The "true and first inventor" (or importer) is the person who first actually makes and publishes the invention which is protected by the patent. If a prior inventor have made the same invention and kept it to himself, neither using it commercially, publishing it, nor applying for a patent, the second inventor who makes the same invention is entitled to a patent as being the true and first inventor ;[5] the same rule applies to inventions imported from abroad.[6] Hence in the case of contemporaneous inventors it is the one who first makes application who succeeds in obtaining the monopoly,[7] even against a second inventor who completes his specification and has his patent sealed before the earlier applicant.[8]

[1] *Bloxam* v. *Elsee*, 1 Carp. P. C. 436.
[2] Halleck, ii. 364, 374.
[3] *Beard* v. *Egerton*, 3 C. B. 97, at p. 130.
[4] Lord *Ellenborough* in *Kensington* v. *Inglis*, 8 East, 289, 290.
[5] *Dollond's* Patent, *infra* ; *Lewis* v. *Marling*, 1 Webs. 496 ; *Carpenter* v. *Smith*, 1 Webs. 543.
[6] *Lewis* v. *Marling* (per *Bayley*, J.), 4 C. & P. 58 ; 1 Webs. 496.
[7] Chitty's Prerog. Crown, 182 ; *Forsyth* v. *Riviere*, 1 Webs. 97 ; *Cornish* v. *Keene* (per *Tindal*, C.J.), 1 Webs. 508 ; *Ex parte Henry*, L. R. 8 Ch. Ap. 170.
[8] *Saxby* v. *Hennett*, L. R. 8 Ex. 210.

Illustration.

Dollond's invention consisted in so combining lenses of different kinds of glass, one convex and the other concave, that the *dispersion* in one corrected that in the other, while the difference in *diffraction* was sufficiently large to make the combined lens of sufficient power to be employed in telescopes. The patent was objected to on the ground that Dr. *Hall* had made the same discovery before him. "But it was holden that as Dr. *Hall* had confined it to his closet, and the public were not acquainted with it, *Dollond* was to be considered as the inventor." *Dollond's Patent* in 1 Webs. 43; 2 H. Bl. 470.

Assistance of Workmen.

An inventor may avail himself of suggestions of persons employed by him, ... agents or servants, to carry out and perfect the invention, so long as such suggestions are confined to minor or subordinate parts.[1] An employer is not entitled to the inventions of his servants,[2] but only to embody improvements made or suggested by them when employed to perfect and carry out the invention.[3] But if he adopt suggestions which are essential[4] to his invention and come within the principle and object[5] of it, then he is no longer the "true and first inventor;" nor is he if he take his invention from some source other than his own mind, such as an old book;[6] this rule is to be understood as applying to information derived from sources within the realm and not to information imported from abroad and unpublished within the realm, for one so acquiring knowledge of an invention from abroad is an importer of it, and therefore entitled to a patent. To distinguish between suggestions that are essential and those that are not one must analyze the invention to distinguish what are its principles and objects as distinguished from the *application* of the former to attain the latter: *ante*, pp. 9, 11. A patent granted to one who is not really the "true and first inventor," but represents himself as such, is invalid, because the Crown has been deceived in its grant.[7]

[1] *Minter* v. *Wells* (per *Alderson*, B.), 1 Webs. 132; *Bloxam* v. *Elsee*, 1 Carp. P. C. 436, 438.
[2] *Heald's Application*, 8 R. P. C, 430.
[3] *David and Woodley's Application*, Gr. L. O. C. 26.
[4] *Tennant's Case*, 1 Webs. 125, *post*, p. 182; *R.* v. *Arkwright*, 1 Webs. 72.
[5] *Allen* v. *Rawson* (per *Tindal*, C.J.), 1 C. B. 574.
[6] *Gibson* v. *Brand*, 1 Webs. 628; *Munts* v. *Foster*, 2 Webs. 102.
[7] Comyn's Digest, cc. 8 & 9; *Lewis* v. *Marling*, 1 Webs. 491, 492; *R.* v. *Wheeler*, 2 B. & Ald. 349, *post*, p. 186; *Minter* v. *Wells*, 1 Webs. 129.

A patentee may be not the true and first inventor because the invention itself is not new. That aspect of the question is included in the considerations of prior user, prior publication, *ante*, pp. 18–46.

Illustration.

In the specification of a patent for the use of calcareous earths in bleaching, the agitation by mechanical means was described as the spirit of that part of the invention. This had been suggested to the inventor by a chemist in conversation. The patent was invalid. *Tennant's Case*, 1 Webs. 125, *post*, p. 182.

Prior Grant.[1]

The date of a patent for an invention in English Law is the date of the application. Hence, if a rival inventor apply for a patent after another applicant for one for the same invention, the later applicant, although a "true," is not "the first inventor."

Again, as a monopoly is an *exclusive* right to make, vend, and use an invention, it is a contradiction in terms to say that two monopolies can exist for the same invention; hence it would seem that the latter of two applicants, although perhaps in fact the earlier inventor, cannot obtain a valid patent. Moreover, his patent, if granted, will be invalid, not by reason of prior use or prior publication, but by reason of the invention being the subject of a "prior grant." Such a case may occur either by no opposition being raised, or by reason of a patentee of a foreign patent having his application antedated under the provisions of the International Convention and sect. 103 of the Act of 1883 (*post*, p. 176).

The Crown cannot, by the grant of the monopoly, deprive the public of the right to use the patented invention for a longer period than fourteen years, unless it be extended on the recommendation of the Privy Council. On the expiration of the fourteen years the public would be deprived, for a few months perhaps, of their right to use the invention, the subject of the prior grant, if the second one were held valid. In the nature of things such cases must be very rare. They might occur in relation to inventions relating to war that are not published, *post*, p. 117.

Contemporaneous applications, *i.e.* on the same day, are considered *post*, p. 158.

[1] As no actual decisions are to be found, the three following paragraphs must only be taken as presenting one view of the question. See Coke's Institutes, vol. 4, p. 88.

CHAPTER V.

THE CONDITIONS ON WHICH PATENTS ARE GRANTED.

Statutory Requirements—The Period before 1852—From 1852 to 1883, p. 54—The Act of 1883, p. 54—The Provisional Specification, p. 55—The Complete Specification, p. 56—Extent of Invention, p. 59—Limits of Claims, p. 63—Disconformity, p. 64—Sufficiency of Specification, p. 72—Utility, p. 80.

Statutory Requirements.

IN considering the questions arising from the conditions upon which patents are granted to the true and first inventors (the conditions as to novelty and inventive ingenuity being complied with) a short review of the history of the subject is necessary, for as statutory requirements and powers have varied from time to time, the precise weight to be given to authorities and examples is changed accordingly. For this purpose one may consider three periods. I. From the Statute of Monopolies to the Act of 1852. II. From 1852 to the Act of 1883. III. Since 1883.

I. *The Period before* 1852.

When patents for inventions were first granted under the Statute of Monopolies, no specifications were required. The only information given to the public was a very meagre description contained in a sentence or two recited in the patent itself. During the reign of Queen Anne a change was made. The grant was made conditional, and a proviso was inserted requiring the patentee to particularly describe and ascertain the nature of his invention and the manner in which it was to be performed in an instrument under his hand and seal. This was enrolled in Chancery, and became known as a "specification." The time allowed for this to be done was

four or six months, according as the application was for England only, or the applicant intended to proceed for a patent in Scotland also. But the patent was granted for the invention *as limited and described by its title;* that is, the sentence describing it in the petition for the patent and in the patent itself, and which became the heading or title of the specification. Hence the specification and patent were read together.[1]

During this period an objection might be taken to the title on the part of the Crown before the patent was granted, but the vagueness in the title, so that it included more than the specification described as the real invention, could not be relied on by the public to invalidate a patent.[2] But it was otherwise when the specification exceeded or described an invention different from that denoted by the title; then the patent became invalid, the invention not being duly "specified" according to the proviso,[3] or the invention specified being other than that for which the patent was granted.

The validity, therefore, of a patent very often depended on the description in the title, which occupied a position in some respects analogous to that of the Claims at the present day, as it declared the extent or "ambit" of the monopoly. If part of the invention described and specified was subsequently discovered to be one for which a valid patent could not be granted, the whole was invalid (see *post*, p. 63). The Patents Act of 1835 (5 & 6 Will. 4, c. 83, sect. 1) enabled the patentee in such a case to keep his patent by entering a disclaimer or memorandum of alteration of any part of either the title or specification, "not being such disclaimer or such alteration as shall extend the exclusive right granted by the said Letters Patent." The custom arose of adding to such disclaimer a positive statement of what was claimed.

In order to satisfy the requirements of the law as to not claiming what was old, or more than the patentee had actually invented, it became the custom to make titles long and precise.

During this period the monopoly of fourteen years ran from the *sealing of the patent.* The earliest date as to which the patent could be sealed was that on which the warrant from the Crown for

[1] *Hornblower* v. *Boulton*, 8 T. R. 105; Dav. P. C. 230.
[2] *Cooke* v. *Pearce*, 8 Q. B. 1064.
[3] *R.* v. *Wheeler*, 2 B. & Ald. 345; *Campion* v. *Benyon*, 6 Moo. 82.

the Letters Patent was delivered into Chancery,[1] usually several weeks after the application was made, and hence arose a risk of others making and publishing the same invention. The specification was not filed for some time afterwards.

II. *From* 1852 *to* 1883.

The Patent Law Amendment Act, 1852 (15 & 16 Vict. c. 83), introduced further changes. The deposit of the specification was required by that Act, as well as by the proviso in the patent itself. The necessity for long titles was removed by the provision (sect. 6) enabling the applicant to lodge with his petition a provisional specification "describing the nature of" the invention for which protection was sought.[2] By sect. 9 the applicant could lodge a complete specification at once with his petition, or if he preferred to lodge a provisional he could lodge the complete six months later. This allowed time for an inventor during that period to make experiments and perfect his invention. Hence the title as a means for defining the "ambit" or extent of the monopoly was superseded. It is still part of the specification, and has to be taken into consideration in ascertaining the meaning of the document as a whole.

Another important change was introduced by this Act (sects. 23 & 24). It was left optional with the law officer to seal the patent, either as of the date of application, or of actual sealing, or of any intermediate date. The usual custom was to seal the patent as of the date of application, unless it was opposed by a rival inventor who, being a later applicant, duly lodged his complete specification during the six months, and before the first applicant lodged his.[3] The rights of rival inventors who were subsequent applicants were thus preserved.

III. *The Act of* 1883.

Under the present law the respective functions (sect. 5 of the Act of 1883, *post*, p. 486) of the provisional and complete specifications are the same as they were under the Act of 1852,[4] with the

[1] 18 Hen. 6, c. 1.

[2] As the functions of the provisional are the same under the Act of 1883 as under that of 1852, they are given below.

[3] *Ex parte Bates & Redgate*, L. R. 4 Ch. Ap. 579; *Saxby* v. *Hennett*, L. R. 8 Ex. 210.

[4] *Moseley* v. *Victoria Rubber Co.*, 4 R. P. C. 248.

additional provision that the complete specification must end "with a distinct statement of the invention claimed." The extent or "ambit" of the monopoly granted is now precisely determined by the claims. It will be seen, therefore, that the provisional specification and claim now fulfil the functions discharged by the original title. The cases deciding the invalidity of patents through defects of titles have now a bearing on the question of conformity of the complete with the provisional specification. Objections to the validity of patents with regard to the title alone have not been seriously entertained since 1883.

The time for lodging the complete specification has been extended to nine months (or ten in exceptional cases),[1] and the patent is sealed as of the date of application [2] (original or amended),[3] instead of formerly as under the Act of 1852. This is important in connection with the rights of subsequent rival inventors (*post*, pp. 64, 607).

The periods allowed after the Act of 1902 comes into operation will be six and seven months respectively, instead of nine and ten. See 2 Ed. VII. c. 34, sect. 1, *post*, p. 523.

The Provisional Specification.

The function, therefore, of the provisional specification as amplifying the title is to give information to the Crown (now representing the public interests) as to what was the invention found or devised by the applicant at the date of his application; so that he could not include at a later date a new invention in his complete specification.[4] This is now an important consideration, for the monopoly will date from the application, and there is no longer any power on the part of the Comptroller to seal the patent as of the date of the complete specification.

Such being the object of the provisional specification, its office is to describe generally and fairly the nature of the invention and not to give the mode of carrying it into practice;[5] for it is in respect of the invention described therein that the patent is granted,

[1] Sect 8 (1) of the Act of 1883, *post*, p. 487; and 48 & 49 Vict. c. 63, sect. 3, *post*, p. 515.
[2] Sect. 13 of the Act of 1883, *post*, p. 490.
[3] Sect. 7 (1) of the Act of 1883, as amended by 51 & 52 Vict. c. 50, sect. 2 (1), *post*, p. 487.
[4] *Cooke* v. *Pearce*, 8 Q. B. 1064; *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 133.
[5] *Newall* v. *Elliott* (27 L. J. C. P. 341), and notes, *post*, p. 204.

and not in respect of a different invention which the applicant may subsequently discover when perfecting his original invention.[1]

It must commence with a title,[2] that is, a phrase indicating the subject-matter of the invention. The title should not be too narrow, for any part of the invention described in the provisional may be omitted from the complete specification.

If the applicant choose he may state in his provisional the objects of his invention or the mode of carrying it out; but it is not advisable to do so, as such statements may affect the interpretation of the document, and so lead to a narrower construction being put upon it than might otherwise be done. Drawings must be supplied when required by the Comptroller.[3] The specification must deal with one invention only,[4] as a patent will be granted for one only.

The Complete Specification.

The complete specification "must particularly describe and ascertain the nature of the invention, and in what manner it is to be performed." It must commence with the title and end "with a distinct statement of the invention claimed."[5] If drawings be required to elucidate it they must be furnished, or reference may be made to the drawings, if any, of the provisional specification.[6] These two functions or offices of the specification (1) describing and ascertaining the nature of the invention, and (2) describing and ascertaining in what manner it is to be performed, are essentially distinct,[7] and are more conveniently considered separately. The claims are more conveniently considered in connection with the former function, for the better discharge of which they are required.

Description of the Nature of the Invention.

Formerly the patent was granted for the invention as limited by its title, but after the introduction of specifications the two were read together, claims were frequently inserted, and under the Act

[1] *Bailey* v. *Roberton* (per Lord *Cairns*, L.C.), 3 App. Ca. 1061, *post*, p. 272.
[2] Sect. 5 (5) of Act of 1883, *post*, p. 486.
[3] Sect. 5 (3) of Act of 1883, *post*, p. 486.
[4] Sect. 33 of Act of 1883, *post*, p. 498.
[5] Sect. 5 (4, 5) of Act of 1883, *post*, p. 486.
[6] Sect. 2 of Act of 1886, *post*, p. 517.
[7] *Philpott* v. *Hanbury*, 2 R. P. C. 38; *Edison* v. *Holland* (per *Lindley*, L.J.), 6 R. P. C. 279.

of 1883, sect. 5 (5) the "complete specification must end with a distinct statement of the invention claimed." It must be remembered, therefore, that the patent is granted for the invention *as claimed*, and not merely *as described* in the body of the specification. The duty of the patentee may be stated under two heads:—

I. To "particularly describe and ascertain the nature of the invention," so that persons reasonably skilled in the subject-matter can tell from the specification itself what the invention is for which the patent is granted.[1]

II. Not to include in the claims more than he is entitled to claim. He must not claim what is old or already known to the public; and his complete specification must not claim an invention different from that included in the provisional specification, or so far an advance upon it as to amount to a distinct invention, as distinguished from a fair development.

Claims.

The claims are to define the limits of the monopoly, and therefore complete the description of the "ambit," or extent, of the invention. They must be read and construed as part of the whole specification,[2] and must not add to the description of the nature of the invention given in the body of the specification.[3] (See Construction of Specifications, *post*, pp. 84, 89.)

Before dealing in detail with the foregoing rules it will be convenient to draw attention to the nature of the claims for combination inventions.

Claims for Combinations.

A combination invention (discussed *ante*, pp. 16, 38) consists essentially of the combining together of old things or processes, or of applying an old thing to a new use, or combining an old thing with a new one.

Hence there are at least two elements in a combination, both of which may be old. If one be new, say A, and another old, say B, then the combination consists of A and B acting together,

[1] *Harmar* v. *Playne*, *post*, p. 182.
[2] *Edison & Swan* v. *Woodhouse*, *post*, p. 299.
[3] *Kay* v. *Marshall*, 2 Webs. 39 (*post*, p. 193); *Plimpton* v. *Malcomson*, 3 Ch. D. 563.

and A and B separately are termed "subordinate integers" of the combination. Or again, a new combination may consist of three or more old elements, X, Y, and Z. Besides the combination XYZ, there are "subordinate combinations," XY, XZ, and YZ. Now, if each of these combinations be new, the whole four combinations are parts of the original invention, and should be separately claimed; for the combination XY is not the same thing as the combination XYZ.[1] Whether this is actually so in any case is a matter of evidence, for an invention of a nominal combination XYZ may in reality be a combination of XY together with Z as a mere adjunct. The real substance, and not the mere form of the claim must always be considered (*post*, p. 87).

It will be seen, therefore, that if A be claimed as a new invention, and also the combination AB, B being old, then the monopoly granted for AB is included in A; no one could use the combination AB without infringing, at the same time, the patent so far as it related to A alone. In such a case the claim to A is a "principal claim," and that tc AB a "subsidiary claim." Similarly, if the whole invention be a combination XYZ, and the "subordinate integer" or "subordinate combination" XY be also claimed, then no one could infringe by using XYZ without at the same time infringing as regards XY. Here the claim for XY would be a "principal claim," and that for XYZ a "subsidiary claim." A "subsidiary claim," may be defined as "a claim for a monopoly for something that is already included in the monopoly claimed by another—a principal claim."

Illustrations.

The claim to the strip of plush in *Lewis* v. *Marling*, *post*, p. 76, is a subsidiary claim.

An invention consisted of the manufacture of a new substance termed "Albion metal;" a claim to the use of it in making capsules is a "subsidiary claim." See *Betts* v. *Neilson*, *post*, p. 220.

In a specification for a patent for a roller skate there was a second claim for the mode of securing the runners to the skate. The claim for this being confined to the principal invention is a subsidiary claim. See *Plimpton* v. *Spiller*, *post*, p. 258.

Dynamite requires some mode of ignition to make it of use; a claim for a mode of ignition is a "subsidiary claim" to that for the main

[1] For an illustration see *Parkinson's Patent*, *post*, p. 165.

invention of the explosive itself. See *British Dynamite Co.* v. *Krebs*, *post*, p. 274.

As a general rule subsidiary claims are useless, as they do not give the patentee any further protection than he has already under his principal claims. In some cases where the patentee is in doubt whether his principal or larger claim be valid, he frequently introduces a subsidiary claim confined to the special form of the invention shown, so that should it be necessary to save the patent by disclaiming the original principal claim, the subsidiary will become a principal claim.

I. *The Nature and Ambit, or Extent, of the Invention.*

If the definition of the invention do not fulfil this condition of giving the public precise information of the limits of the invention, the patent will be void for ambiguity. Compliance with this condition is of much importance where the inventions consist of improvements in old machines,[1] or combination of old elements.[2] The rule is generally expressed by saying that the specification must "sufficiently distinguish between what is new and what is old" in the invention claimed. This rule is equivalent to two others, (1) that the description and claim must be clear as to what is claimed, and (2) that what is claimed must not be old. The first of these rules is sufficiently complied with if the precise nature of the invention and claim are apparent from reading the whole document; it is not necessary to specify each part of a combination, say a machine, as "old" or "new," as the case may be.[3] The absence of an express statement of the novelty of the invention in the claim will not invalidate a patent.[4] The second rule falls under the second head (*post*, p. 63). In distinguishing "new" from "old" one may either confine the claim in express terms to the new parts, or, in cases of improvements on the patentee's previous inventions, refer by year and number to the original invention,[5] or other otherwise disclaim what is old. (Illustrative cases of disclaimer are mentioned under "Construction of Specifications," *post*, p. 87.)

[1] *Foxwell* v. *Bostock*, *post*, pp. 225, 229.
[2] *Harrison* v. *Anderston Foundry Co.*, *post*, pp. 249, 254.
[3] See cases noted to *Foxwell* v. *Bostock* and *Harrison* v. *Anderston Foundry Co.*, *post*, pp. 229 and 253.
[4] *Siddell* v. *Vickers*, *post*, p. 328 (approved in *Tubes, Ltd.* v. *Perfecta, &c.*, *post*, p. 461).
[5] See *Harmar* v. *Playne*, *post*, p. 182; *Tubes, Ltd.* v. *Perfecta, &c.*, *post*, pp. 460, 461.

Illustrations.

See *Hastings* v. *Brown*, *post*, p. 75.

The real invention lay in the combination of certain parts in a sewing-machine. The claim was wider for the whole combination of various parts of the machinery. The patent was invalid. See *Foxwell* v. *Bostock*, *post*, p. 225.

A claim for the construction and arrangements of parts of mechanism in a manner described and shown in the specification and drawings in the absence of any evidence that it included what was old is *primâ facie* a good claim. The combination itself may be the novelty. See *Harrison* v. *Anderston Foundry Co.*, *post*, p. 249.

An invention consisted in improvements in belts for machinery. The claim was one for constructing belts as described. The real invention consisted in finding out which of several classes of material would suit. The patent was invalid. See *Gandy* v. *Reddaway*, *post*, p. 292.

The novelty in an invention of a steam disinfector lay in the use of steam of very high pressure. This was the feature that distinguished it from an older disinfector. That this was the essence of the invention was apparent only from the drawings, taken with the letter-press of the specification; it was not explicitly mentioned. Had it been specifically mentioned, much litigation would have been averted. *Held*, that the patent was valid. See *Goddard* v. *Lyon*, *post*, p. 358.

An invention consisted in certain improvements in adjusting the driving-chains of safety bicycles. One of the claims was for the adjusting mechanism in combination with a new step. The new step not being in the provisional could not be claimed alone. Although the monopoly claimed by the other claims was not enlarged by this one, it was *held* that the claim was improper, embarrassing to the trade, and should never have been made. The patent was declared invalid. *Osmonds* v. *Balmoral Cycle Co.* (per *Lindley*, L. J.), *post*, pp. 418, 420.

Theories in Specifications.

As the invention (*i.e.* the manufacture) protected consists in the application of principles and not the principles themselves (*ante*, pp. 6–11), it is not necessary to explain the principles or theory of the action of an invention. Although there is no objection to the theory being given, as being the simplest way of describing the invention, yet it may subsequently be discovered to be an erroneous one. The false theory given in the specification does not of itself

render the patent invalid; but it will do so if the claim be held by the Court to include the false theory, or if the false theory would lead persons astray in putting the invention to actual use. Theories are therefore better omitted.

Illustrations of False Theories.

In *Medlock's* specification for aniline dyes the treatment of aniline with arsenic acid constituted the invention. The dye was really produced by a combination of aniline and toluidine, the latter substance being present as an impurity in the ordinary aniline of commerce. No objection to the patent was raised on that ground. See *Simpson* v. *Holliday*, *post*, p. 244.

A specification for distributing electricity by means of transformers originally contained the erroneous idea that there was no drop in potential where the main circuit was "tapped" by the transformers. The Court of Appeal held that the amendment striking this statement out altered the nature of the invention claimed, but this view was not accepted by the House of Lords. *Gaulard & Gibbs' Patent*, 7 R. P. C. 367, *post*, p. 329.

In *Monnet's* specification for certain dyes a theory of the chemical reactions was given. It was erroneous, and alleged substances to be formed and used which never in fact existed. The claims included this non-existent substance. The patent was invalid. *Monnet* v. *Beck*, *post*, p. 401. [This specification should be contrasted with *Lake's*, *post*, p. 362, in which neither theory nor formula was given.]

In a specification for "a process of treating incandescents for use with" gas-burners, the theory stated that certain substances could be used because they were good conductors of heat. An amendment was allowed striking out all reference to the erroneous theory on the ground that it was "by no means essential to the validity of a patent that the patentee should put forward any theory as to how the process which he describes works." *Dellwick's Patent*, 15 R. P. C. 687.

It has also been shown (*ante*, p. 11) that the advantages of an invention, and the uses to which it may be put, are no part of the "manufacture" patented, consequently they need not be described in the specification at all. But if they are mentioned, the claims should be worded so as to exclude them. Cases may occur in which the production of certain results, the possession of certain advantages, or the possibility of certain modes of using are mentioned as criteria to show the extent of the monopoly claimed; these are usually combination inventions of old elements.

Pioneer Inventions.

The claim may be a wide one if the invention itself be such a new application of newly discovered principles as to justify it. Provided the claim does not go beyond the actual invention, it cannot be objected to on account of being too wide.[1] Inventions of this class are known as "Pioneer Inventions" (*ante*, p. 15). The ambit, or extent, of the claim is wide, not because the specifications are construed in a more favourable manner on account of the great utility of the invention, but simply because the invention has produced an entirely new thing, and the monopoly for it is consequently of a wide extent.[2] But although such a claim be very wide, yet it is limited by the actual discovery and knowledge of the inventor at the time.[3]

Illustrations of Pioneer Inventions.

The first successful electric glow-lamp produced a new industry. The claim for the lamp, the combination of the filament, the glass receiver through which pass the leading wires, and the vacuum, includes all lamps although made by means other than those mentioned in the specification. See *Edison* v. *Woodhouse*, *post*, p. 293.

A claim for the whole process of producing an incandescent gas lamp by means of a mantle impregnated with oxides of zirconium, lanthanum, and yttrium, was a wide claim not confined to the precise proportions mentioned (*Incandescent Co.* v. *De Mare*, *post*, p. 390), but did not extend to include a subsequent discovery that zirconia with ½ per cent. of cerium would effect a similar result. *Welsbach, &c.* v. *The Daylight Incandescent Mantle Co.*, *post*, p. 391.

On the other hand, as a general rule, where the invention relates to some subject which is not new, but deals with a new method of producing an old result, or an improvement in an existing method or machine, the claim is confined to that method, and cannot be generalized by extending the language.[4] The inventor of one method of producing a certain result cannot, in such cases, claim a monopoly so as to exclude others from working on similar lines, but he can

[1] *Househill Co.* v. *Neilson*, 1 Webs, 673. 683; *Edison & Swan* v. *Holland* (per *Lindley*, L.J.), *post*, p. 319.

[2] *Neilson* v. *Harford*, 1 Webs., notes on p. 342.

[3] *Welsbach, &c.* v. *The Daylight, &c., Co.* (per *Romer*, L.J.), *post*, p. 391.

[4] *Bovill* v. *Pimm*, 11 Ex. R. 739; *Proctor* v. *Bennis*, L. R. 36 Ch. D. 757. 764; *The Welsbach Incandescent Gas Light* v. *The Daylight, &c.*, 17 R. P. C. 146.

exclude others from taking his method or improvement and substituting various modifications for parts of it.[1] The extent to which the patentee may claim is bounded by the state of the art at the time he takes out his patent (see Construction of Specifications, *post*, p. 84); the more numerous the previous successful attempts have been to achieve the same object, the smaller the "ambit" of his invention.

II. *The Claims must not include anything to which the Patentee is not entitled.*

In the preceding pages (*ante*, pp. 34–38) the question of the amount of addition to the stock of public knowledge necessary to support a patent has been discussed. If any principal claim be for anything that is not a manufacture, or by including what is known[2] or not of sufficient merit to support a patent interfere with others in the exercise of their trade, the patent will be void altogether. Each claim must in itself be sufficient to support the patent.[3] The rules on this point which formerly obtained with regard to different inventions in the same patent now apply to the different claims of the same specification, for the monopoly limited by each principal claim is a different one. The failure of part of the consideration for the grant renders it invalid. When a patent has been declared invalid on account of one claim, it may be amended by Disclaimer (see Amendment of Specifications, *post*, p. 160).

But it rarely occurs that a claim which is "subsidiary" (as defined[4] *ante*, pp. 57, 58) to a good principal claim is itself a bad one. For a subsidiary claim does not include anything that is not already included in a principal claim. If a subsidiary claim be held invalid, and then struck out by disclaimer, the monopoly of the patentee and the rights of the public remain the same; but if a principal claim be invalid and disclaimed, the monopoly of the patentee is diminished and the rights of the public consequently enlarged. Hence it is of no benefit to the public to hold a subsidiary claim invalid. Where

[1] *Boyd* v. *Horrocks*, 9 R. P. C. 77, 84, l. 53.
[2] *R.* v. *Else*, *post*, p. 180.
[3] *Hill* v. *Thompson & Forman*, *post*, pp. 184, 185; *Gibson* v. *Brand*, 1 Webs. 640; *Morgan* v. *Seaward*, 1 Webs. 196.
[4] See *Betts* v. *Neilson*, *post*, p. 220; *British Dynamite Co.* v. *Krebs*, *post*, p. 274.

patents have been held invalid by reason of a subsidiary claim, invalidity is also attributable to some ground other than want of novelty, want of inventive ingenuity, or want of utility, such as false suggestion, or false representation, or ambiguity.

Illustrations of Subsidiary Claims.

In *Lewis* v. *Marling* (*post*, p. 76), the patent was upheld because the inclusion of the subsidiary claim to the plush "brush" was made in good faith as a substitute for the brush that was formerly required.

In *Betts* v. *Neilson* (*post*, p. 220), the subsidiary claim was for the manufacture of capsules out of the metal claimed in the principal claim, hence did not extend it, and afforded no ground for questioning the validity of the patent.

In *Plimpton* v. *Spiller* (*post*, p. 258), the claim for affixing the roller to the skate was confined to its application to the new skate, and hence, although itself an old method, did not invalidate.

The claim for the mode of igniting a new substance, dynamite, although formerly applied to other explosives, did not invalidate the patent. *British Dynamite Co.* v. *Krebs*, *post*, p. 274.

See also *Osmonds* v. *Balmoral Cycle Co.*, *post*, p. 418.

In *Parker & Smith* v. *Satchwell & Co., Ltd.* (18 R. P. C. 299), the invention was an improved device for holding ladies' hair. Two combs were hinged so that the prongs coincided when closed; there were curved parts attached, the whole being a foundation for a coiffure. Two claims were for modes of fastening the comb together when closed by springing the projection so as to interlock. These were held to be confined and subsidiary to the first claim.

Disconformity.

As one cannot include what is old, so one cannot include and claim[1] a new invention that is not in the provisional specification, either mentioned or a fair development of what is mentioned. The invention specified and described must be that which the applicant represented to the Crown that he had invented. If an invention be included in the complete distinct from that mentioned in the provisional, there is said to be "disconformity" or "variance" between the complete and provisional specifications; or the complete is said to "disconform to" the provisional specification. The provisional

[1] If not *claimed*, the inclusion of a new invention is no objection. See *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 127, 135.

took the place of the original title, but now no objection can be taken to the provisional when it has not been objected to, or has been approved of, by the Comptroller and Law Officer.[1]

An invention claimed in the complete may be distinct from that foreshadowed in the provisional in two ways: (1) it may either be outside the scope and "ambit" of the provisional, or (2) it may be such an advance upon the invention mentioned therein as to amount to a distinct invention as distinguished from a "fair development."

Illustrations of Fair Developments.

A provisional described improvements in laying down telegraph cables. These consisted in a method of coiling the cable in a tank, and a brake-wheel to be used in paying it out. The complete described in addition a device consisting of rings suspended over the coil to prevent kinks. This was not a distinct invention, but an addition to enable the invention to be better carried into practice. See *Newall* v. *Elliott*, *post*, p. 201.

A provisional was taken out for an invention consisting of the employment of wood in the bearings of screw-propellers to diminish friction. A statement was made in the complete specification (in addition to a proper description of the invention) that a like effect could be obtained if pieces of wood were fixed to the shaft instead of the bearings. The claim was for the employment of "wood in the construction of the bearings and bushes," &c., "as herein described." *Held*, that if the wood used on the shaft was a "bearing," it was included in the provisional, and if not, it was not claimed. *Penn* v. *Bibby*, L. R. Ch. Ap. 127, 135.

A bicycle lamp was described in the provisional as being so constructed that it, on being unhinged in the middle, could pass between the spokes, and be suspended over the axle, the parts next the hinge being a cylindrical barrel, split and shaped for this purpose. In the complete an improved rim, by means of which washers could be slid into the barrel was described. This was *held* to be within the specification, being a matter of detail in one element of the combination. *Lucas* v. *Miller*, 2 R. P. C. 155.

The provisional specification for "improvements in spring tip-vans" began as follows: "This invention relates to the construction of tip-vans or waggons, by which means vans or waggons may be made to tip their loads with the same facility as at present obtains in the case of two-wheel tip-carts." The tip-waggon was then described as consisting "for this purpose" of two main parts, the

[1] *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 133.

frame borne by the wheels and the upper body. The mechanism whereby the upper body could be tilted independently of the lower part was described. The complete specification described the mechanism in detail by means of drawings. The claims were: "First, the application of a four- or two-wheeled van or waggon to act as a tip-van or waggon, with the slotted links or levers, with parts hereinbefore described, &c.;" and, "Second, the application of a tip-van or waggon on two or four wheels by means of the side-slot or groove-guards with parts hereinbefore described, &c." *Held* (by the Court of Appeal), that the essence of the invention had no relation to the number of wheels of the vehicle, and consequently no distinct additional invention was introduced in the complete specification. *Wallings* v. *Stevens*, 3 R. P. C. 147.

A provisional specification described a pencil-case which acted by gravity by means of a pusher-tube which released a pin from a slot; the tube holding the lead with the pin attached then dropped down, the pin extending into two then coincident slots, and being again locked at the bottom. The complete showed in addition another device in which the relative actions of the parts was interchanged, the pin remaining fixed and a slot slipping over it. The principles employed in the locking device and mode of releasing the mechanism were the same. See *Woodward* v. *Sansum*,[1] *post*, p. 300.

A provisional specification describing mechanism for turning forgings read as if the whole action were automatic. The complete showed the device with an addition to a lever so that it could be worked by hand. It was alleged that automatic action was useless. The provisional, although clumsily framed, sufficiently indicated the nature of the invention. See *Vickers* v. *Siddell*, *post*, p. 324.

The provisional specification for an invention "relating to electric bells and alarm-clocks and apparatus to be used therewith," described a system whereby the bells could be actuated by less battery-power than had before been used. In the complete were three claims for things not mentioned in the provisional; two of these were for details of the mechanism included in other claims, and the third was a claim for the combination of the improved bell with an indicator (a subsidiary claim). The patent was upheld. *Crampton* v. *Patents Investment Co.*, 6 R. P. C. 287.

The title of a provisional and a complete specification was for "improvements in the method of weaving tinned steel or other wire for use in the construction of mattresses," shutters, mats, &c. A claim for "a mattress woven as described, and made in sections instead of a single piece," was *held* to be within the provisional. *Dowling* v. *Billington*, 7 R. P. C. 191.

[1] See note to *Castner-Kellner Alkali Co.* v. *Commercial, &c.*, *post*, p. 71.

A false theory being given in effect that an electric current could be "tapped" by transformers without loss of energy in the main current, the complete specification was amended by striking out the false theory. The Court of Appeal held that the amended specification described in consequence an invention different from the provisional, and that the patent was invalid on that ground, but the majority of the members in the House of Lords dissented from this view of disconformity. See *Gaulard & Gibbs' Patent*, *post*, p. 329.

A new form of gasholder was invented in which the gasholder was kept level without posts over ground. The provisional described it as arranged with *torsional* gearing only. The complete included *tensional*. See *Gadd* v. *Mayor of Manchester*, *post*, p. 351.

A provisional specification for "an improved clip for mounting the lamps of velocipedes" described an arrangement in which *one side* of the clip was *fixed* to the lamp, the *other* was attached loosely to the lamp, and was *capable of being moved* laterally to fit brackets of different sizes. The movable half was kept in position by a spring or screw. Any system of lateral adjustment was included. In the complete specification one modification showed the movable part capable of adjustment laterally by means of rotation being mounted on a screw which, when turned, caused the movable part to fit into the bracket. Another arrangement consisted in hingeing *both* halves of the clip, and moving them simultaneously by means of a screw threaded right- and left-handed; this was not disconformity. *Miller* v. *Scarle Barker*, 10 R. P. C. 106.

A provisional specification for self-centering ships' telegraphs thus described the sounding mechanism: "In telegraphic apparatus of the kind or type herein referred to, gongs or bells are employed, and according to this invention the gong is sounded and the pointer moves up to the central or proper position as described practically simultaneously. By so operating the apparatus the instant attention is called to the instrument by the sounding of the gong the pointer will be in its central and proper position, and therefore the notification transmitted cannot be mistaken on the ground of want of correctness of the movement of the pointer. In the ordinary form of telegraphic apparatus, such as the example above described, these combined operations may take place as the pointer commences to move into the field of the adjacent order or notification on the dial." The complete specification described a duplex sounding mechanism, and claimed for "two or more soundings of the sounding device," and also for the employment of duplex sounding mechanism adapted to sound a gong "at or near the commencement of the movement of the pointer . . . and also to sound a gong or the like towards the completion of

such movement." This was merely carrying out the invention in the best way discovered by the time the complete was drafted. *Chadburn* v. *Mechan*, 12 R. P. C. 120.

A provisional specification described a method of obtaining gold from its ores by dissolving it out with a solution of cyanide of potassium. The complete contained two claims, one for the use of cyanide of potassium, and the other for a process in which a *dilute* solution was used (*post*, p. 369). The dilute solution possessed the property of "selective action," *i.e.* of dissolving out the gold, leaving baser metals in solution. This was a useful discovery, and the second claim was held valid and to be within the provisional. But the patent was invalid owing to the first claim having been anticipated. *Cassel Gold, &c., Co.* v. *Cyanide, &c.*, 12 R. P. C. 232, and *post*, p. 367.[1]

The provisional specification described a method of securing outer rubbers on tyres to wheels by means of two wire hoops of slightly smaller diameter across than the tyres to be covered, and screwed up outside the rims. The complete, in addition to that, showed endless wire hoops not screwed up, nor outside the rims. These latter operated by resisting extension of pneumatic tyres, and lay inside the edges of the rims. See *Pneumatic Tyre Co.* v. *Leicester Pneumatic Tyre Co.*, *post*, p. 422.

An invention consisted in making a socket for candlesticks by stamping it out of one sheet and then forming it circular. On it there were three prongs which served as springs to grip the candle when inserted in the socket. There were inserted three small prongs, or tits, all stamped out, between the three larger prongs. These were turned outwards, and prevented the device from going down too far in the tube of the candlestick. The addition of the additional little prongs did not constitute disconformity. *Carter* v. *Leyson*, 18 R. P. C. 508.

The provisional specification described a pneumatic tyre consisting of an annular hollow ring or pneumatic tube placed in the groove of the wheel, over which an annular split cover, or envelope, went over the tube, and was secured under the rim by means of hooks or similar fasteners, so that when pumped up the whole was taut. "In some cases instead of bringing the cover round the back of the wheel-rim as described, I might bring the cover round within the rim, and secure it to the rim by inner fastenings or by expansion against the overhanging sides of the rim." The complete specification showed different methods of catching the cover by the

[1] In this case, like *Nuttall* v. *Hargreaves*, *post*, p. 334, and *Cera Light Co.* v. *Dobbie*, *post*, p. 71, the provisional merely described what was old, the whole merit lay in the new development, but here the latter had a separate claim, and the patent was held invalid on another claim for want of novelty, *post*, p. 369.

edges of the rim. But there were also shown and claimed modes of attaching the edges of the cover to each other. The inventor discovered that he could dispense with the fastenings and overhanging edges of the rim by overlapping the edges of the cover to an extent equal to the width of the rim, and that the air-pressure was sufficient to keep on the tyre owing to the friction of the edges of the cover against each other, and the one against the hollow of the rim. There was no disconformity. *Birmingham Pneumatic Tyre Synd.* v. *Reliance Tyre Co.*, 19 R. P. C. 298.

Illustrations of Distinct Inventions invalidating the Patent, (1) *being outside the Provisional.*

A provisional specification described means of preserving animal substances by means of a solution of gelatine and bisulphite of lime. The complete contained a claim for the use of bisulphite of lime alone, and several for it in combination with gelatine and other substances. The claim for bisulphite of lime alone, if a principal claim (and not a mere foundation for other claims), would enlarge the monopoly and invalidate the patent. See *Bailey* v. *Roberton*, *post*, p. 270.

The provisional specification described a means of reproducing electrically sounds at a distance—a telephone. A claim in the complete for reproducing sounds mechanically—a phonograph—is one for a distinct invention. See *United Telephone Co.* v. *Harrison & Co.*, *post*, p. 281.

In a provisional specification for "improvements in machinery or arrangements for doubling and winding, and doubling, twisting, and winding yarns or threads," the prime object of the whole invention was to arrest the machinery by means of detector mechanism on the breaking of a thread. In the complete was included a claim for a prop which had to do with a distinct portion of the mechanism, *viz.* to sustain oscillating mechanism enabling the broken thread to be joined and the winding started. *Horrocks* v. *Stubbs*, 3 R. P. C. 235.

A provisional specification for "improvements in apparatus for the generation and application of electricity for lighting," &c., described four divisions of the invention. One was "constructing commutators cylindrical with an insulating hub or body to which are attached metallic sub-segments placed in electrical connection with the general mechanism in which the commutator is employed, and metallic wearing segments detachably attached to said sub-segments." The metallic sub-segments were made of gun-metal, the wearing segments attached to them were of steel. When worn by use they could easily be replaced. There were two claims for these, one for their use and the other for the mode of attachment

to the gun-metal sub-segments. The inventor found that there was considerable advantage electrically to be derived by enlarging the gap between the segments so as to cut off the contact-brush or plate entirely when passing the gap. He filled the gap with insulated metal segments. These "insulating segments" were claimed separately—"the commutator having metallic insulating segments, substantially as shown in Division 3." At the trial the claim to the commutator was objected to on the ground of want of novelty, but the learned judge *held* that there was sufficient improvement to support a patent for it as covered by the provisional, but that this new claim constituted disconformity; because (1) the two other commutator claims covered all that was in the provisional, which described (2) *constructing* a commutator cylindrical as distinguished from *maintaining* it so; (3) the insulating segments performed an electrical function different from that of the original wearing segments; and (4) the insulating segments were not essential, and were in one form of commutator shown dispensed with at one gap only. The learned judge also found the patent invalid as to the other claims for want of novelty. On appeal the First Division of the Court of Session held the patent invalid, mainly on the ground of want of novelty, treating disconformity as a minor issue. The House of Lords (*post*, p. 340) dealt with want of novelty only. *King & Co.* v. *Anglo-American Brush Corp.*,[1] 6 R. P. C. 414.

See *Lane Fox* v. *Kensington*, &c., *post*, p. 345, and note thereto, *post*, p. 349.

The provisional specification described improved mechanical means of connecting cycle-saddles to their vertical pillars. Another mechanical method of achieving the same object was introduced into the complete as a mechanical equivalent to that form which was included in the provisional; it was described as a "modification." See *Brooks* v. *Lamplugh*, *post*, p. 413.

The provisional specification described certain improvements in adjusting the driving-chains of safety bicycles. These improvements necessitated the removal of the step. In the complete a new step was introduced, which was never alluded to in the provisional. This step was claimed, but only *in combination with* the other novel mechanism. It was *held* to be an embarrassing and improper claim. *Osmonds* v. *The Balmoral Cycle Co.*,[2] *post*, p. 418.

A provisional described a pneumatic tyre without an inner tube. One

[1] This decision, not being the ground on which the patent was finally held invalid, cannot be considered as final. For the other issue, see *post*, p. 340.

[2] This appears to be the only instance of the invalidity of a *subsidiary* claim (*ante*, pp. 58, 63) rendering the patent invalid. The decision appears to be based (*post*, p. 420) not so much on disconformity as on the ground that the claim was embarrassing. It would be equally embarrassing if otherwise valid.

form had ridges on the outside to engage in the rim, the inner edges folding or lying, one on the other, rubber on rubber, to produce an airtight joint; another form consisted of a single rubber band lying inside the tube and overlapping the edges of the outer band. The complete in addition described a tyre consisting of an endless band, the edges of which did not overlap, but were intended to be air-tight by being pressed by the air against the metal, not rubber. *The Tubeless Pneumatic, &c., Co.* v. *The Trench Tubeless, &c.*, 16 R. P. C. 291.

Various means of carrying out by electrolysis the extraction of sodium from its salts, by forming an amalgam with the mercury cathode were known. A provisional specification described a new method in which a bell containing a solution of the salt was moved, the mercury remaining stationary. The complete included a claim for an arrangement in which the mercury was made movable and the bell stationary. See *The Castner-Kellner Alkali Co.* v. *Commercial Development Corp.*,[1] *post*, p. 436.

Illustration of Distinct Invention invalidating the Patent (2) *being Improvements on Provisional.*

The provisional specification describing a method of tapping beer-barrels. Owing to the state of knowledge there was no patentable invention disclosed. In the complete a strainer was also described in which lay the whole merit of the device. See *Nuttall* v. *Hargreaves*, *post*, p. 334.

An invention consisted of "improvements in ships' lamps." The object was to provide for the burning of oils that freeze at low temperatures. The provisional described the improvement as bringing a copper plate from *near* the wick-tube upwards to be heated by the flame, so as to keep the oil liquid next the plate. The complete described this plate as being *soldered to* the wick-tube. The invention of bringing the plate merely near the wick-tube was anticipated, the whole merit lay in the soldering on to the tube. *Held*, that there was disconformity if the claim meant soldering to the wick-tube, if it only meant proximity the patent was anticipated. *Cera Light Co.* v. *Dobbie*, 11 R. P. C. 10.

Test of Disconformity.

The method of ascertaining whether disconformity exists or not is first to construe the complete specification to ascertain what

[1] This case should be compared with *Woodward* v. *Sansum*, *post*, p. 300. In both the alleged disconformity consisted in introducing an arrangement in which the relative motion was the same; the stationary and moving parts being reversed. In the present case, owing to the state of knowledge, the provisional was confined to a special form of the appliance, in *Woodward* v. *Sansum* the ambit of provisional was wider, the mechanical action being new.

are the inventions[1] not merely there described but claimed[2] (see Construction of Specifications). After the extent of the invention has been thus ascertained, then the provisional is to be examined in order to see whether the inventions claimed are there foreshadowed, or are fair developments of the invention the nature of which is therein described. The examination is not in the reverse order.[3] The provisional is to be looked at for this purpose only; it is not to be considered along with the complete in order to construe the latter.[4] As it is important to know the "ambit" of the provisional, the state of knowledge of the art must be looked to; for if there be only room for the inventor to devise a particular form of mechanical arrangements (see *post*, pp. 97, 98), then mechanical equivalents for the arrangement so described cannot be included as "fair developments." It is otherwise when the provisional describes a method of achieving a new result. The following cases may be cited as examples of the application of this rule :—

Wider Inventions.

Woodward v. *Sansum*, *ante*, p. 66, and (per *Cotton*, L.J.) *post*, p. 304.
Gadd v. *Mayor of Manchester*, *ante*, p. 67, and *post*, p. 351.
Pneumatic Tyre Co. v. *Leicester Pneumatic Tyre Co.*, *ante*, p. 68, and *post*, p. 422.

Narrower Inventions excluding Modifications.

King & Co. v. *Anglo-American Brush Corp.*, *ante*, pp. 69, 70.
Brooks v. *Lamplugh*, *ante*, p. 70, and (per *Smith*, L.J.), *post*, p. 413.
The Castner Kellner Alkali Co. v. *Commercial Development Corp.*, *ante*, p. 71, and (per Lord *Halsbury*, L.C.) *post*, p. 442.
See Appendix, *post*, p. 607.

Sufficiency of the Specification.

The second function the complete specification is required to perform is that of describing and ascertaining in what manner the invention is to be performed. One object—in fact, the original object—of the specification is to give the public such information

[1] Per *Smith*, L.J., in *Gadd* v. *Mayor of Manchester*, *post*, p. 356.
[2] *Penn* v. *Bibby*, L. R. 2 Ch. Ap. 127; *Presto Gear Case, &c.* v. *Simplex, &c.*, 15 R. P. C. 640, l. 46.
[3] See notes to *Newall* v. *Elliott*, *post*, p. 204; *Bailey* v. *Roberton*, *post*, p. 274; and *United Telephone Co.* v. *Harrison & Co.*, *post*, p. 282.
[4] *Bailey* v. *Roberton*, as explained in *Hocking* v. *Hocking*, 4 R. P. C. 260.

that on the expiry of the monopoly they may know how to carry out the new manufacture without the necessity for any further instruction, invention, or discovery.[1]

The first question is to determine the amount of knowledge the public, or the class of persons to whom the specification is for this purpose addressed, is supposed to have. This question has been discussed in a long series of decisions, the result of which is that the specification is to be drawn so as to be understood by the "ordinary skilled workman," not a scientist nor inventor such as skilled engineers, chemists, or even foremen who possess superior intelligence and power of developing unfinished directions,[2] but a skilled workman conversant with the practice of the art, not a mere *employé* or ordinary workman;[3] *e.g.* a specification for a new dye would be addressed to one having a large amount of chemical knowledge.

The amount of detail to be given will depend on the nature of the invention. One that is absolutely new—a "pioneer invention"—will necessarily require more explicit directions than one that is a mere improvement in an existing process or machine.[4] It is sufficient if it can be shown that the skilled workman can perform the invention without difficulty by the aid of the specifications alone, although he may have to correct errors from his own knowledge of the subject.[5] The evidence of workmen may be conclusive on the question of sufficiency.[6]

Frequently in describing how an invention is to be carried into practice the class of persons to whom the working directions are to be addressed is not the same as those to whom the nature of the invention is described, although the same passages in the specification may serve both purposes.[7] This is the natural result of the

[1] *R. v. Arkwright*, 1 Webs. 66, approved in *Morgan* v. *Seaward*, 1 Webs. 173, and *Thomas* v. *Welch*, L. R. 1 C. P. 203.

[2] *Plimpton* v. *Malcomson*, 3 Ch. D. 568, 9, followed in *Bray* v. *Gardner*, 4 [illegible] P. C. 406.

[3] *Arkwright* v. *Nightingale*, 1 Webs. 61; *Edison & Swan* v. *Holland*, 6 R. P. C. 277, 278, *post*, p. 318. See also *Neilson* v. *Harford*, 1 Webs. 314; *Stonor* v. *Todd*, 4 Ch. D. 61.

[4] *Edison & Swan* v. *Holland* (per *Lindley*, L.J.), 6 R. P. C. 280, l. 20, *post*, p. 318, l. 43.

[5] *Ibid.* Also *Otto* v. *Linford*, 46 L. T. 39, *post*, p. 388; *Moser* v. *Marsden* (per *Smith*, L.J.), 10 R. P. C. 363, 364.

[6] *Beard* v. *Egerton*, 8 C. B. 216; *Edison* v. *Woodhouse* (per *Lindley*, L.J.), 4 R. P. C. 108, *post*, p. 299, l. 38; *Shaw* v. *Jones*, 6 R. P. C. 335, l. 30.

[7] *Edison & Swan* v. *Holland* (per *Lindley*, L.J.), 6 R. P. C. 280, *post*, p. 319. For the same distinction in anticipating specifications, see *King* v. *Anglo-American Brush Corp.* *post*, p. 340.

development of, and specializing in, scientific discovery, especially in chemical cases.

The duties of the patentee to make full disclosure of the method of carrying out his invention may be summed up in two rules :—

(1) He must make an honest and *bonâ fide* disclosure of all his knowledge [1] as to the best method or means of performing his invention, including improvements and fair developments made after the provisional specification has been filed,[2] even if such involve the exercise of inventive ingenuity.[3]

(2) The information given must be sufficient to enable skilled workmen [4] (as above described) to perform the invention without having to make further discoveries, or inventions, or experiments [5] except such as are necessary to acquire facility in performing new operations.[6]

In illustrating the first of these rules it must be borne in mind that the ground on which a patent may be declared invalid is that of misrepresentation as to the patentee having made a *full* disclosure, for the public must not be misled in any way ;[7] as for instance by —a non-essential part being described as essential ;[8] an intentional ambiguity ;[9] a material concealment ;[10] the omission of essentials or of what the patentee knows to be useful.[11] In cases where the patentee is the importer of an invention from abroad it is *his* best knowledge, and not that of the original inventor that is required.[12]

Patents held Invalid for want of Full Disclosure.

A patent for making verdigris was held invalid because the patentee did not disclose the fact that the use of *aqua fortis* would accelerate

[1] *R.* v. *Arkwright*, 1 Webs. 66 ; *Morgan* v. *Seaward*, 1 Webs. 173, 174 ; *Thomas* v. *Welch*, L. R. 1 C. P. 203.

[2] *Crossley* v. *Beverley*, 1 Webs. 117.

[3] *Bailey* v. *Roberton*, as explained in *Brooks* v. *Lamplugh*, *post*, p. 274.

[4] *Ante*, p. 73.

[5] *Plimpton* v. *Malcomson*, 3 Ch. D. 569, 570, 576 ; *Edison & Swan* v. *Holland*, 6 R. P. C. 282, *post*, p. 318 ; *Lane Fox* v. *Kensington*, 9 R. P. C. 247, 248 ; *Lewis* v. *Sterckler*, 14 R. P. C. 36.

[6] *Edison & Swan* v. *Holland*, 6 R. P. C. 282, *post*, p. 319.

[7] *Turner* v. *Winter* and note, *post*, p. 181 ; *R.* v. *Wheeler* and notes, *post*, p. 186.

[8] *Huddart* v. *Grimshaw* (per Lord *Ellenborough*, C.J.), 1 Webs. 93.

[9] *Galloway* v. *Bleadon*, 1 Webs. 524 (per Sir *N. Tindal*, C.J.).

[10] *Walton* v. *Bateman*, 1 Webs. 622.

[11] *Neilson* v. *Harford*, 1 Webs, 317, 321.

[12] *Plimpton* v. *Malcomson*, 3 Ch. D. 582.

the process, although the resulting substance was no better. *Wood* v. *Zimmer*, 1 Webs. 82.

A patent was granted for trusses. The omission to state that tallow should be used (which was material) to facilitate the tempering was *held* to invalidate the patent (*Liardet* v. *Johnson*, 1 Webs. 53 as explained in *Turner* v. *Winter*, 1 Webs. 82, and *Morgan* v. *Seaward*, 1 Webs. 175), it being understood that the specification was addressed to "persons of reasonably competent skill in such matters" (*Harmar* v. *Playne*, Dav. P. C. 318).

For an illustration of ambiguity and false suggestion invalidating a patent, see *Turner* v. *Winter*, *post*, p. 181.

A patent was granted for machinery for drying paper. The specification stated that the invention consisted "in conducting the paper, by means of cloth or cloths, against the heated cylinder, which cloth may be made of *any suitable material*, but I *prefer* it to be made of linen warp and woollen weft." It was proved that the inventor had tried linen cloth and woollen cloth, and that both had failed. *Held*, that the patent was void, as the patentee should have given the public the benefit of this knowledge. *Crompton* v. *Ibbotson*, Dan. & Ll. 33.

A patent was for improvements in copper and other plate printing. In the specification the directions were to use the "finest and purest chemical white lead." There was no such substance known in the trade. Ordinary white lead would not do. The only material that would suit was a pure kind of white lead imported from abroad and sold in one particular shop in London. *Held* that the patent was void. *Sturtz* v. *De La Rue*, 3 Russ. 322 (approved in *Coles* v. *Baylis*, 3 R. P. C. 180).

A patent was granted for certain "improved arrangements for raising ships' anchors and other purposes." The supposed invention consisted in constructing a windlass with a V-shaped groove, scalloped with shell-like indentations to grip the chain-cable. It was proved that a windlass for a chain-cable of a given size was not new, but none was known capable of holding chain-cables of different sizes. The specification did not assert more than that the windlass would grip more than one size of cable. It was doubtful that the words of the specification could mean that the windlass would grip cables of different sizes. *Held*, that the patent was invalid, for the specification, being equivocal, was insufficient. *Hastings* v. *Brown*, 1 E. & B. 453.

The patent in question was for an improved manufacture of artificial stone. It consisted of treating certain materials with water (deprived of air) under high pressure. The specification alleged that previous processes failed because of cracks produced in the stone by the admission of air into the moulds, that it was impossible to get a higher temperature than 281° to 292° F., which was

insufficient to produce reliable stone. These difficulties the patentee alleged he overcame by working at a much higher temperature, 400° F. It was proved that the stone could be produced of quite as good a quality by working at 240° F., and that working at the higher temperature was commercially disadvantageous, being more expensive. *Held* that the patent was invalid for false suggestion to the Crown. *Owen's Patent*, 17 R. P. C. 78.

See also *Osmonds* v. *Balmoral Cycle Co.*, *ante*, p. 60.

Patent upheld, though misleading.

The patent was for improvements in shearing-machines for cloth. A complicated machine was described with diagrams. Before the date of the patent the wool had to be raised by means of a brush. In the specification the brush was described incidentally: "A narrow strip of plush is fixed on the surface of A" (the top cylinder) "parallel with the wire B" (a helix round A) "to answer the purpose of a brush for raising up the wool which is to be shorn off the cloth," &c.; but it was not mentioned as being essential. It was claimed in a separate claim in the following terms: "Third, the application of a proper substance, fixed on or in the cylinder A, to brush the surface of the cloth to be shorn."[1] The patentee subsequently found that it was unnecessary. No machine was ever made with it on. *Held* that the patent was valid, the patentee having acted in good faith. *Lewis* v. *Marling*, 1 Webs. 490 (followed in *Poupard* v. *Fardell*, 18 W. R. 129).

Illustrations of the latter part of the first rule relating to what additions may be included as "fair developments" are given, *ante*, pp. 65–69.

Sufficiency of Practical Directions.

The illustrations above given to illustrate the necessity of an *honest* disclosure include several which also illustrate the necessity of a *sufficient* disclosure. There are a large number of cases in which the *honesty* of the patentee is not in question, but which turned on the *sufficiency* of the directions. The following cases illustrate the question of sufficiency of disclosure within the meaning of the second of the above rules. There is no obligation on the patentee to go so far as to point out and warn against all the errors a workman might make.[2] Inaccurate use of terms, due to errors in translation or want

[1] As the brush could not be used without using the machine, the claim was a "subsidiary one, as to which see *ante*, pp. 58, 63.

[2] *Edison & Swan* v. *Holland* (per *Cotton*, L.J.), 6 R. P. C. 282, l. 16.

of knowledge of English, will not render a patent invalid so long as the meaning be clear. If a specification discloses the presence of foreign matter in a substance, it must show that it is not injurious or may be easily removed.[1] Equivalents need not be mentioned if well known to those skilled persons to whom the specification is addressed, but if the equivalents be not previously known as such they should be mentioned, otherwise they will not be included in the claim.[2]

Errors, unless they are purposely inserted, will not vitiate a patent if the ordinary skilled workman can correct them at once without having to make experiments and further inquiry, for such errors would not mislead.[3] But if intentionally inserted there is not an *honest* disclosure.

Illustrations of Insufficiency in Directions.

The specification for a method of sharpening "knives, razors, scissors, and other cutting instruments" described a contrivance about four inches long, consisting of two parallel cylinders with alternate bosses and recesses. These were placed so that the distance between the axes of the cylinders was less than double the radius of the bosses, hence these, on each cylinder, fitted into the recesses of the other. The sharpening process was carried out by drawing the edge of the cutting instrument along a V, formed by the intersection of the circumferences of the bosses. For scissors it was necessary to have one set of bosses smooth, or else both of Turkey stone. This information was not given in the specification. *Felton* v. *Greaves*, 3 C. & P. 611.

A patent for a lamp was held invalid because neither letterpress nor drawings showed holes to admit air on one side of the wick; these were necessary. *Hinks* v. *The Safety Lighting Co.*, *post*, p. 254.

As to absence of directions to apply a certain solution for preserving meat, see *Bailey* v. *Roberton*, *post*, p. 270.

A patent was taken out for improvements in the manufacture of bread and biscuits. Certain proportions and directions were given in the specifications. The patentee, when instructing his workmen, gave them further directions and other proportions of ingredients. A baker, an agent of the patentee, testified that he required such extra directions to enable him to make the bread. *Pooley* v. *Poinion*, 2 R. P. C. 171, 172.

[1] *Derosne* v. *Fairie*, 1 Webs. 161, 162.
[2] *Heath* v. *Unwin*, 2 Webs. 245.
[3] Per Lord *Westbury*, L.C., in *Simpson* v. *Holliday*, 12 L. T. N. S. 99, 100.

In a patent for, amongst other things, regulating, by means of storage batteries, the pressure in the mains for electric lighting purposes, the apparatus would not work by reason of no directions being given as to switching cells in or out of the circuit. The invention as described was therefore useless. See *Lane Fox* v. *Kensington, &c.*, *post*, p. 345.

A patentee of a process of manufacture of new dyes claimed a product substantially pure. He gave the fullest directions to the best of his knowledge. The purity of the result was due partly to the use of an iron vessel in the process, the iron of the vessel combining with the acid. If an enamelled vessel were used the process would not produce the pure result claimed. Enamelled vessels were frequently used in such-like operations. The directions were not sufficient. *Badische Anilin, &c.* v. *La Société Chimique des Usines du Rhone*, *post*, p. 405.

Alleged Insufficiency disproved.

In a specification describing an apparatus for making gas there was no direction to use a condenser which was necessary. But no workman who could make a gas apparatus would leave it out. Nor was there any direction so to do. *Crossley* v. *Beverley*, 3 C. & P. 515.

In the first patent for a process of photography five operations were described. The first was that of preparing the surface of the plate for the coating with iodine. The second the iodine process. The third, which was to follow *immediately* on the second, was the exposing of the plate in the camera. At the end of the directions for the first operation the reader was told that it was "indispensable just before the moment of using the plates in the camera . . . to put once more some acid on the plate." If this were done after the iodine process no image could be produced. At the trial a verdict was directed for the defendant (3 C. B. 97). On appeal, after further examination, it was held that the obscurity was "cleared away by consideration of the whole," and that it was "sufficiently plain to be understood by an operator of fair intelligence" that the direction was to be taken as referring to the process of preparing the plate some time in advance, and the third application of the acid was to be just before the iodine process. The patent was upheld. *Beard* v. *Egerton*, 8 C. B. 165.

Absence of mention of proportions is not material where they depended on the substance chosen, and enough information is given to produce the required result by simple trial. See *British Dynamite Co.* v. *Krebs*, *post*, p. 274.

Drawings of slides in a gas-engine were incorrect, and if followed exactly

the engine would not work. The letterpress contained no information to correct the error. Workmen would easily make the required correction. No evidence was produced that any had been misled. See *Otto* v. *Linford*, *post*, p. 283.

The use of the term "carbon gas" in a claim where the process shewed that neither CO nor CO_2 was meant, but only gases containing H, did not mislead any workman. *Edison & Swan* v. *Woodhouse* (and Action), *post*, p. 297.

Directions for making carbon "filaments" for glow-lamps out of a kneaded combination of tar and lampblack were sufficient because the workman could continue the process till the specified result was obtained. No special directions were given how to avoid diffusion during carbonisation. *Edison*, *&c.* v. *Holland*, *post*, p. 317.

A strained construction will not be put on a specification in order to interpret the directions so as to include substances that will not suit, *e.g.* by taking the technical instead of commercial meaning of the words; or including extremes of a class of acids. Directions as to how to produce dyes are not insufficient because the precise shades to be produced are not expressed in words. To ascertain the shade actual experiment was necessary. See *Badische Anilin*, *&c.* v. *Levinstein*, *post*, p. 311.

Lord *Kelvin's* mariners' compass comprised several novelties. As it swung on knife edges some brake was necessary. It was thus described: "Instead of the rubbing surfaces, I use the large bowl, A, attached to the bottom of the glazed case, the bottom forming the roof of the bowl, which is nearly filled with liquid; thus, when there is any motion of the bowl, energy is consumed by the frictional or viscous action of the liquid." It was proved that the effect and utility would be much less if the bowl were fully filled. The claim for this bowl described it as "being filled or partially filled" with oil or other viscous fluid. This claim was only for a minor part of the larger invention. *Thomson* v. *Batty*, 6 R. P. C. 87, 97.

In a specification for a new dye it is sufficient if practical directions be given by which persons can, by trial, find out how to produce any required shade in a given range. The patentee need not enumerate those substances that will not do of a class if he give sufficient directions as to others of the class that will suit. See *Leonhardt* v. *Kallé*, *post*, p. 362.

Besides the reason already given for full disclosure by the patentee, namely, to enable the public to use the invention after the monopoly has expired, there is another, viz., that it is contrary to public policy that an inventor should have all the benefit of a monopoly by law, and in addition have the benefit of a trade secret

in the manufacture ; for he might thereby secure a longer monopoly than the fourteen years allowed by statute. So, too, if he commercially use the invention as a trade secret before he applies for a patent the same result would follow.[1] Prior secret commercial (as distinguished from experimental) user of the invention by the inventor himself has been considered a ground for holding a patent to be invalid. But an inventor may keep the invention secret but unused for a long period before he applies for his patent without invalidating it.[2]

Illustrations.

A new process of manufacturing an old product was invented. The inventor sold considerable quantities of the product made by his new but undisclosed method. He subsequently took out a patent for the process. The patent was invalid. *Wood* v. *Zimmer*,[3] Holt, N. P. 58.

Manufacture by the patentee and his servants, without publication, of a patented article made by the patented method, for the purpose of having a large stock on hand ready for sale when the patent is obtained, is not prior user. *Betts* v. *Menzies*, 28 L. J. Q. B. 365.

Racquets were made in November, 1883, for sale, but not sold nor exhibited till May, 1884. The patent was dated the 1st of January, 1884. It was a valid patent. *Moss* v. *Malings*, 3 R. P. C. 378.

Utility.

Another question connected with sufficiency of directions in the specification is that of "Utility." This condition of utility is not imposed in so many words by the Statute of Monopolies, but rests on it and other grounds. A patent may be held void for want of utility on the grounds of—

I. Public policy. This is implied by the statute.

II. False suggestion to the Crown.

III. Insufficiency of invention, *i.e.* the invention as *made and described* being useless *for the purpose* described.

The first ground rests on the common law. As the object of the

[1] *Betts* v. *Menzies* (Lord *Campbell*), 28 L. J. Q. B. 365.

[2] *Bentley* v. *Fleming*, 1 C. & K. 588.

[3] This case was decided on two grounds, that here mentioned and insufficiency (*ante*, p. 74). Each ground may be regarded as the basis of the decision and the other a *dictum*, according as the necessity of the argument requires. Hence the point has recently been regarded as an open one. See *Miller's Patent*, 15 R. P. C. 213 ; see also *Webster* on Subject Matter (1841), p. 39.

monopoly is to benefit trade and the industries of the country,[1] it will not be granted for an invention that is useless. Were this not the rule an inventor of a useless method or process might exact royalties from the users of subsequent inventions which, although coming within his patent, owe their utility and success to some subsequent improvement invented by another;[2] or might, on the other hand, prevent such useful improvements from being made. In such a case the earlier monopoly would come within the terms of the 6th section of the Statute of Monopolies (*ante*, p. 1), as being "mischievous to the State . . . or generally inconvenient."[3]

As to the second ground, if the invention be represented as useful when it is of no use at all, the patent will be invalid because of the false representation made to the Crown;[4] but in the absence of such false suggestion the uselessness of only a part of the invention claimed is no objection.[5]

There are some *dicta* to the effect that utility must include some useful advance on what was known to the trade, *i.e.* that an invention fails for want of utility unless it is in some way more useful than that which is already known.[6] But the majority of *dicta* are to the contrary effect.[7]

Neither comparative[8] nor commercial[9] utility is to be taken as the test of validity.

Illustrations.

See *Lewis* v. *Marling*, *ante*, p. 76, as to an unnecessary part.

For an example of small utility see *Neilson's Patent*, *post*, pp. 187, 190.

An electric glow-lamp was patented. Some were made, and lasted for a considerable time. Very soon improvements were made in the mode of manufacture by which the lamps were "standardized"

[1] *Case of Monopolies*, Noy. 182; *Edgebury* v. *Stephens*, 1 Webs. 35; 1 Hawk Pl. Cr. Ch. 79, sect. 20; *R.* v. *Wheeler*, 2 B. & Ald. 349.

[2] *Morgan* v. *Seaward* (per *Parke*, B.), 2 M. & W. 562; 1 Webs. 197; *Crossley* v. *Potter*, Mac. 240 (per *Pollock*, C.B. 245); *Walton* v. *Bateman*, 1 Webs. 623.

[3] The rule is put on this ground by *Alderson*, B., in *Morgan* v. *Seaward*, 1 Webs. 197.

[4] Bac. Abr. Prer. F. 2 (7th ed. vol. vi. p. 514), and notes to *R.* v. *Mussary*; Gordon on Monopolies, p. 268.

[5] *Morgan* v. *Seaward*, 1 Webs. 197; *Lewis* v. *Marling*, 1 Webs. 495. 7.

[6] *Cornish* v. *Keene*, 1 Webs. 506; *Losh* v. *Hague*, 1 Webs. 203, 204; *Young* v. *Rosenthal*, 1 R. P. C. 29.

[7] *Lewis* v. *Marling*, 1 Webs. 497; *Morgan* v. *Seaward*, 1 Webs. 172; *Otto* v. *Linford*, 46 L. T. 41; *Plimpton* v. *Malcomson*, 3 Ch. D. 582; *Tetley* v. *Easton*, Mac. P. C. 63; *Philpott* v. *Hanbury*, 2 R. P. C. 37; *Pirrie* v. *York Street Flax Co.*, 10 R. P. C. 39.

[8] *Fawcett* v. *Homan*, 13 R. P. C. 411.

[9] *Badische Anilin u. Soda Fabrik* v. *Levinstein*, *post*, pp. 312, 314.

and otherwise improved. None were sold on a commercial scale except those made with the improvements. *Held*, there was utility at the date of the patent, which was therefore valid. *Edison & Swan* v. *Holland*, 6 R. P. C. 277, 283 (*post*, p. 319), 285.

A patent was obtained for producing dyes from certain substances. Out of a series of colours the dye for one colour only had a sale. The other dyes were not therefore useless. *Badische Anilin, &c.* v. *Levinstein*, *post*, p. 311.

The third ground for the rule is the most important in practice. If the invention be not fully developed so as to obtain the result intended by the patentee, then the invention is entirely useless for that purpose when made as described, and the patent will be invalid. Much more so if the invention be useless for every purpose; or if, in addition to its failure to accomplish the intended purpose, it be dangerous to the public.

There is no case reported of a patent being held invalid for the want of utility alone in an invention that produced the result, or accomplished the object, described by the patentee. Patents that have been held invalid for want of utility were either also invalid on other grounds, or failed to work as described, or were impracticable [1] or "useless for the avowed purpose." [2]

Utility as a test for, or as evidence of, ingenuity or novelty has been dealt with, *ante*, pp. 38, 39.

Illustrations.

An invention consisted in an alleged improvement in the construction of fowling-pieces and small arms. It consisted of a hole so perforated as to let the air and not the powder pass out from the barrel to the pan. The specification contained the following passage:—"Now the intention of this improvement in perforating the hammer, grooving or hollowing out the seat, is to let the air out of the barrel and pan; in putting down the wadding the powder in the barrel, by the air being allowed to pass, is forced into the perforated receiver A, so that the touch-hole is always full of powder, and by these means firearms of all kinds are prevented from flashing or hanging fire." So far from preventing "hanging fire," the gun, with this improvement, would not fire at all; but by enlarging the hole, so as to allow powder out as well as air, it would work well. *Held* that the patent was invalid because the utility of the

[1] *United Horsenail Co.* v. *Stewart*, 2 R. P. C. 132.
[2] *United Horsenail Co.* v. *Swedish Horsenail Co.*, 6 R. P. C. 8.

invention and purpose of the patent wholly failed. *Manton* v. *Parker*, Dav. P. C. 327. ['This is the first case (1814) of want of utility since the Statute of Monopolies.]

A process, in which heating was necessary and was not so stated, was held a useless invention. *Simpson* v. *Holliday*, *post*, p. 244.

An invention consisted of a system for signalling on railways. The ultimate object was to secure the safety of the travelling public. According to the specification this was secured, "it being impossible to set the points and signals antagonistic to each other." It was proved, however, that it was quite possible for signalmen using the system to turn several trains on one line without difficulty. The patent was invalid for want of utility.[1] *Easterbrook* v. *G. W. Ry. Co.*, 2 R. P. C. 207.

In a system of distribution of electricity *Planté* cells were used for the purpose of *automatically* keeping the pressure in the mains at a certain amount. Owing to the cells discharging at a potential difference less than that required to charge them, this effect, as intended by the patentee, could not be produced. But the cells were useful when a switch was used to add extra cells to compensate for the change in the potential difference of the cells. The patent was invalid. *Lane Fox* v. *Kensington*, &c., *post*, p. 345.

The last case and the first (*Manton* v. *Parker*) are very similar. Neither invention would work when made as described and claimed, but a slight alteration made each workable and useful. Cases of patents being held invalid for want of utility alone are very rare.

Utility, as essential to validity, is therefore utility for the purpose indicated by the patentee.[2] Want of utility to defeat a patent must be want of utility in the invention as claimed,[3] and not that of auxiliary or alternative things mentioned in the specification. The existence of utility does not depend on whether the invention is practically used in the form in which it is specified, or is superseded by improvements.[4] It may exist in cases where, owing to commercial reasons, the manufacture cannot be successfully worked.[5] As with other grounds for invalidating a patent, if the claim to one monopoly fail for want of utility, the whole patent fails.[6]

[1] This case is also an illustration of a patent being invalid as being, in the words of the Statute, "generally inconvenient," *i.e.* dangerous to the public.

[2] *Lane Fox* v. *Kensington* (per *Lindley*, L.J.), *post*, p. 350.

[3] *Cornish* v. *Keene*, 1 Webs. 506.

[4] *Edison* v. *Holland*, 6 R. P. C. 277, 283, 285.

[5] *Badische Anilin*, &c. v. *Levinstein*, 4 R. P. C. 462, 466.

[6] *United Horsenail Co.* v. *Swedish Horsenail Co.*, 6 R. P. C. 8, following *Templeton* v. *Macfarlane*, 1 H. L. Ca. 595. As to subsidiary claims, see *ante*, pp. 58, 63; *Lewis* v. *Marling*, *ante*, p. 76.

CHAPTER VI.

CONSTRUCTION OF SPECIFICATIONS.

General Principles—Proportions, p. 88—Claims, p. 89—Benevolent Construction, p. 93—Doctrine of Equivalents, p. 96—Amended Specifications, p. 99.

General Principles.

If a patent be granted, members of the public (who are interested, as provided in sect. 26 of the Act of 1883, *post*, p. 494) or the law officers may present a petition for revocation on grounds on which formerly a patent might be repealed by *scire facias*.

When a patentee sues in an action for infringement of his patent, the defendant may plead that the patent is invalid on the same grounds. The validity of a patent is therefore, in the majority of cases, tested when a petition for revocation is presented or an action brought for infringement.

Hence, logically, in an action for infringement, the extent of the monopoly claimed should be ascertained before the alleged infringement is considered.[1]

Again, with regard to novelty, a question frequently arises as to whether the claim includes what has been published before. As it is quite possible for a patentee, through ignorance, to claim what is old, the meaning and extent of his claim should be ascertained without regard to the allegation of anticipation.[2] The importance of a correct construction or interpretation of the specification is therefore manifest, for on the extent of the claim the validity of the patent very often depends, and also, on the other hand, the question whether a certain manufacture be an infringement or not. As earlier specifications and other publications have to be looked to as part of the

[1] See *Seed* v. *Higgins* (as explained in *Potter* v. *Parr*), *post*, p. 216.

[2] Per *Blackburn*, J., in *Betts* v. *Menzies*, 31 L. J. Q. B. 237, and *post*, p. 219.

knowledge of the time,[1] and as the questions of construction and validity frequently are only raised as part of the defendant's case, it is found in practice that the question of interpretation cannot be severed entirely from those of novelty and infringement, as the logic of the case would strictly require. The actual issue frequently depends only on the interpretation and extent of one or two claims out of many. Hence the attention of the Court is necessarily directed to these issues before the actual interpretation of the claims and specification is undertaken; this course avoids unnecessary discussion. But, beyond so narrowing the field of inquiry, one's mind ought not to be influenced by issues of validity or infringement. The modern practice is thus defined by Lord *Alverstone*, L.C.J., in *Presto Gear-case Co.* v. *Orme, Evans & Co.* (18 R. P. C. 23)—

> "In patent cases I have always felt that there is a line of thought which is most likely to lead you to the right result in the speediest way. The first thing, assuming you understand the alphabet of the science or art, is to understand clearly what was the previous state of knowledge. Having got, either by agreement or deduction from the evidence, a clear view as to what was the previous state of knowledge, you must then construe the specification with reference to that, disregarding issues of novelty or subject-matter which may arise in the particular case, and you then have to consider whether or not the infringement comes within the fair meaning of the claims, not anything else, but the claims read in the light of the previous state of knowledge,[2] and without altering their words unduly in favour of the patentee or the infringer. I will say one word more with regard to the law; that in my judgment, be it a combination claim or be it not, you are only allowed to follow the words of the claim, but you are not to permit mere mechanical equivalents,[3] or mere colourable alterations, to prevent a thing being an infringement, having regard to what the meaning of the claim is."

The interpretation of specifications like all other documents is a question of law for the Court.[4] But in cases of controversy[5] the

[1] See *post*, pp. 86, 87.

[2] The "state of knowledge" in cases of *ambiguity* of language or ambit of claim involves the question of novelty, and such has been taken into consideration by the House of Lords on the principle of Benevolent Construction, *post*, pp. 93, 94.

[3] Equivalents are discussed *post*, pp. 96–99.

[4] *Bush* v. *Fox*, 5 H. L. Ca. 707; *Hills* v. *Evans* (per Lord *Westbury*, L.C.), 4 De Gex, F. & J. 294, *post*, p. 223; *Simpson* v. *Holliday*, *post*, p. 245; *British Dynamite Co.* v. *Krebs* (per Lord *Cairns*), 13 R. P. C. 192, *post*, p. 275.

[5] *Betts* v. *Menzies*, 31 L. J. Q. B. 239.

Court must be informed by evidence of the state of knowledge of the art in question, the meaning of technical terms, &c., at the date of the specification,[1] and not including subsequent knowledge.[2]

Illustration.

An alleged anticipating specification was forty-five years earlier than the one the validity of which was in question. Evidence was admissible to show whether the same terms in the two documents at these different periods (1804 and 1849) referred to the same things. *Betts* v. *Menzies*, *post*, p. 217 (per Lord *Westbury*, L.C.), *post*, p. 219.

Where, however, the matter or language is not of a technical nature, or describes a very simple invention, there is no need of expert evidence, and the whole question is one of law.[3]

Illustrations.

As to whether directions to heat were included in the term "or I accelerate the operation by heating," see *Simpson* v. *Holliday*, *post*, p. 244.

In a case in which the invention consisted of a comb to be sewn in ladies' hats, the issue of validity depended on the description in an antecedent specification. *Savage* v. *Harris*, 13 R. P. C. 368.

The knowledge of the time at the date of the specification includes what persons in the trade actually do—descriptions published in books and other publications under circumstances that lead to the conclusion that persons have become acquainted with their contents.[4] Specifications, however, are considered as published in fact as well as in law.

Illustration.

The question at issue was the validity of *Haddan's* patent for series-shunt winding of dynamos. An alleged anticipation was contained in *Varley's* specification (1876). In construing the latter the knowledge of shunt winding disclosed by *Clark's* specification (1875) was considered. Although it was unknown to Lord *Kelvin* at the date of *Varley's* invention, yet as it was proved to have been

[1] *Crossley* v. *Beverley*, 1 Webs. 107, 108.

[2] *Heath* v. *Unwin*, *post*, p. 200 (followed in *Badische Anilin, &c. v. Levinstein*, 2 R. P. C. 90).

[3] *Simpson* v. *Holliday*, *post*, p. 245.

[4] *Harris* v. *Rothwell* (per *Lindley*, L.J.), 4 R. P. C. 231. Also Publication, *ante*, pp. 23–29.

known to *Varley*, it may have been known to other electricians. *King* v. *Anglo-American Brush Corp.*, *post*, p. 340, (per Lord *Watson*) p. 344.

In construing a specification in the light of previous knowledge and publications, due regard must be had to disclaimers. The power to amend specifications by amendment and disclaimer was granted by the Act of 1834 (5 & 6 Will. 4, c. 83, sect. 1); it is now exercised under the Act of 1883, by way of disclaimer, correction, or explanation.[1] A specification of which part has been struck out by disclaimer will very often bear a different meaning to what it would have done had it originally been drawn as amended. Illustrations of the effect of disclaimers will be more conveniently considered below in connection with claims and equivalents. A disclaimer was never intended to enable an inventor to make a bad patent good by altering it to something requiring research and experiment.[2]

The "nature of the invention," as described and claimed in a specification, is in all cases a question of construction for the Court, assisted by evidence as to the knowledge of the time and surrounding circumstances;[3] it must be ascertained from the whole specification (including drawings[4]), all the facts of the discovery being first ascertained.[5] An invention consists in the application of principles and not merely in their enunciation (*ante*, p. 9). In all cases it is the real merit, and not the mere description, that must be looked to.[6]

Illustrations.

The absence of any mention of a previous use in the specification caused the claim to be read to include more than the actual invention in *Hill* v. *Thompson*, *post*, p. 185.

The real merit in *Lyon's* disinfector lay in the strength of the door of the machine. This was not pointed out in the letterpress, but was apparent from the drawings. See *Lyon* v. *Goddard*, *post*, p. 362.

The manner of the application in the way described of hydrated ferric oxide to the manufacture of coal gas was held to be an invention in *Hills* v. *London Gas Light Co.*, *post*, p. 208, 211.

[1] *Post*, Ch. IX., p. 160.
[2] See *Ralston* v. *Smith*, post, p. 229.
[3] Per Lord *Cairns* in *British Dynamite Co.* v. *Krebs*, 13 R. P. C. 192.
[4] *Poupard* v. *Fardell*, 18 W. R. 129.
[5] *Siddell* v. *Vickers*, *post*, p. 329, l. 23; *Newton* v. *Grand Junction Ry. Co.*, 5 Ex. 334; *Lister* v. *Leather*, 8 E. & B. 1022.
[6] Per *Lindley*, L.J., in *Benno Jaffé*, &c. v. *J. Richardson & Co.*, *post*, p. 357.

Admitting mixed gas and air to the cylinder of *Otto's* gas engine, and compressing the charge as described and claimed in the specification, were applications of principles. See *Otto* v. *Linford*, *post*, p. 283.

For a good example of the importance and application of this principle of interpretation, see *Gormully, &c., Co.* v. *North British Rubber Co.*, *post*, p. 414.

See *Gaulard & Gibbs' Patent* for a general illustration, *post*, p. 332 *n.*

See *Benno Jaffé, &c.* v. *Richardson*, *post*, p. 356.

The specification will not be read in a narrow and technical manner, but in a practical and commercial sense ;[1] the sense in which those to whom it is addressed (*ante*, p. 73) would read it.

Illustrations.

In a specification for the manufacture of aniline dyes the term "dry arsenic" was interpreted as the arsenic of commerce physically dry, and not the anhydrous acid, which was not then an article of commerce. *Simpson* v. *Holliday*, *post*, p. 245.

In a specification dealing with the manufacture of glow lamps the term "carbon gas" in the claim was read in connection with the whole specification in which "hydro-carbon gas" was mentioned, and it was held that "carbon gas" did not include CO or CO_2, but substances containing carbon and hydrogen, even along with other elements; although technically the term "hydro-carbon" referred to compounds of C and H only. *Edison & Swan* v. *Woodhouse*, 4 R. P. C. at p. 107, and *post*, p. 299.

In a specification for smokeless powder the term "soluble nitrocellulose" meant that known commercially as soluble in an ether-alcohol mixture, and excluded the "insoluble nitrocellulose" or gun-cotton. *Nobel* v. *Anderson*, *post*, p. 366.

Proportions.

Questions frequently arise in connection with the mention of, or absence of allusion to, precise proportions of ingredients. In this respect there can be no general rule. On reading the specification as a whole, assisted by evidence as to the knowledge of the art, in some cases the essence of the invention may consist in the discovery of the properties arising from the combination of substances in certain proportions ; or the proportions may be important only as regards directions to workmen, or may depend altogether on the use to which the invention is to be put, *e.g.* shades of colour in dyeing.

[1] *Crossley* v. *Beverley*, 3 C. & P. 515.

Illustrations.

Proportions of metals used for making capsules were held to be not essential, but only relative, as showing how to obtain the best results in *Neilson* v. *Betts*, L. R. 5 H. L. 21, *post*, p. 220.

Nitro-glycerine and gun-cotton were mixed "in, or about in" certain proportions to make a smokeless powder. The essence of the invention lay in keeping within those limits. *Maxim Nordenfelt*, &c. v. *Anderson*, *post*, p. 418.

Suitable limits of proportions were given for ingredients used in mantles for incandescent gas lighting. It was subsequently discovered that proportions far outside those given would suit. The claim did not include the later discovery. See *Welsbach*, &c. v. *Daylight Inc. Mantle Co.*, *post*, p. 391.

See *Heath* v. *Unwin*, note 2, *post*, p. 201.

Claims.

Questions arising out of the construction of claims frequently present some special features. The claim must be construed as part of the whole document [1] (including the title).[2] The description of the invention given in the specification should first be read, and then the claims to see how much of the invention described is claimed.[3] This is the rule whether the words "substantially as described" are in the claim or not.

A claim for every form of applying a principle would amount to a claim to the principle itself, hence it can only extend to include the applications of the principle — that is, the manufacture or invention itself—in one or more of the forms described.[4] So, too, the claim must be read in the light of the function the thing described was to perform.[5]

Illustrations.

One claim for the *Wheatstone* telegraph was for improvements in communicating angular motions to magnetic needles "by means of currents transmitted through metallic circuits." Construing the claim in connection with the whole invention, it was held to include

[1] *Newton* v. *Grand Junction Ry. Co.*, 5 Ex. 334; *Lister* v. *Leather*, 8 E. & B. 1022.
[2] *Oxley* v. *Holden* (per *Erle*, C.J.), 8 C. B. N. S. 707.
[3] *Arnold* v. *Bradbury*, L. R. 6 Ch. Ap. 706, 712; *Edison, Bell, &c.* v. *Smith*, 11 R. P. C. 395; *Tubes, &c.* v. *Perfecta Seamless, &c.*, 17 R. P. C. 588.
[4] *Neilson* v. *Harford* (per *Alderson*, B.), 1 Webs. 355; *Nobel* v. *Anderson*, 11 R. P. C. 525, 527, 532; *Ticket Punch Reg. Co.* v. *Colley's Patents*, 12 R. P. C. 185.
[5] *Fawcett* v. *Homan*, 13 R. P. C. 410.

the essential conducting wire, but not necessarily the return wire. The use of earth returns as equivalents for wires was not known at the date of the specification. *Electric Telegraph Co.* v. *Brett*, 10 C. B. 838, *post*, p. 199.

Claims to the *Otto* gas-engine, apparently for a principle, were construed in connection with the whole document as for applications only. *Otto* v. *Linford*, *post*, p. 283.

In a claim for a method of treating liquors including the use of a centrifugal machine, the machine, in the light of the whole invention, was held not to be essential, ordinary "skimming" being an equivalent. *Benno Jaffé, &c.* v. *Richardson*, *post*, p. 356.

A claim for an improved lintel was not taken by itself, but in connection with an improved mode of making fireproof floors in *Fawcett* v. *Homan*, *post*, pp. 383, 388.

Whether the mention of proportions in the body of a specification limits the claim to the proportions mentioned depends on the real nature of the invention (*ante*, pp. 87, 88).[1] But if the proportions are given by way of illustration, or are merely mentioned as giving the best results, they do not necessarily limit the claim.[2]

In claims for inventions that are combinations (*ante*, p. 57), the presumption is that the parts constituting the elements of the combination are old.[3] Hence when no distinction is made the claim is *primâ facie* one for the whole combination ; but if claims be made to some subordinate integers of the combination, then the others are excluded and are presumed not to be novel.[4]

Illustrations.

The claim for an arrangement of parts constituting a horse-clipper possessing certain advantages, is a claim only to the whole combination, and not one for subordinate integers. See *Clark* v. *Adie*, *post*, p. 259.

In a machine for trimming brushes the claim was for the combination of parts. This was a claim only for the whole combination, and did not cover the use of cutter-plates without guiding-rods. See *Moore* v. *Bennett*, *post*, p. 289.

[1] For illustrations of the mention of proportions narrowing the claim, see *Heath* v. *Unwin*, *post*, p. 201 ; *Welsbach, &c.* v. *Daylight, &c.*, *post*, p. 391 ; *Maxim, Nordenfelt, &c.* v. *Anderson*, *post*, p. 417.

[2] *Patent Typefounding Co.* v. *Richard*, 6 Jur. N. S. 39 ; Joh. 384.

[3] *Clark* v. *Adie*, *post*, p. 263.

[4] *Tetley* v. *Ecston*, 2 E. & B. 966, 968 ; Mac. P. C. 86, 87 ; *Harrison* v. *Anderston Foundry Co.*, *post*, p. 252.

Many instances occur in which the claim fairly construed is a narrow one, and is sometimes not so wide as the patentee might have made it. The extent of the claim is limited by the extent of the invention.[1] In some cases the claim may extend beyond the actual mode of manufacture described in the specification; in others, if the claim be so extended, the patent will be invalid. The real issue is whether the patentee has claimed more than his invention warrants.

Illustrations: Narrow Claims.

A claim for an incandescent mantle for gas-burners was made narrower than what the patentee might have claimed in *Welsbach, &c.* v. *Daylight, &c., post*, p. 391.

A claim was purposely made narrow, and therefore a wider construction rejected in *Lancashire Explosives Co.* v. *Roburite, &c., post*, p. 397.

A specification describing the manufacture of a new dye confined the claim to a pure dye. The process *as described* would not produce a pure dye, but one of considerable impurity. The patentee was confined to the pure dye, and the patent was held invalid. *Badische Anilin, &c.* v. *La Soc. Chim. des Usines du Rhone, post*, p. 407.

Wide Claims.

The claim for Edison's electric lamp extended to lamps made otherwise than by the process described. As the resulting lamp was new, the claim was not too wide. See *Edison* v. *Woodhouse, post*, p. 297.

A claim for a process of condensing sulphuric acid was drawn wide enough to include an older method. The patent was invalid. See *Kynochs, Ltd.*, v. *Webb, post*, p. 425.

An invention consisted in the use of a certain kind of transmitting paper with a typewriter. The claims included one for the paper apart from its use in the machine; the coated paper alone was not subject-matter. The patent was invalid. See *Dick* v. *Ellams Duplicator Co., post*, p. 430.

A claim for a ferrule apart from the mode described of fastening it to a bobbin was held to invalidate a patent. See *Wilson Bros.* v. *Wilson & Co., post*, p. 463.

The effect generally of disclaimers on the construction of specifications has been alluded to. The extent of a claim is frequently affected by a disclaimer in the body of a specification. A disclaimer may properly be employed to cut out something that leaves a perfect

[1] See *R.* v. *Else, post*, p. 180.

claim behind, but it was never intended that the power of disclaimer should be used to cut down a vague description so as to leave something which was really the result of experiment and research.[1]

Illustrations.

By disclaimer the claim to certain auxiliary devices was dropped by striking out certain words in the claim, which was left more general in character. But some of the corresponding descriptions were retained in the body of the specification. The effect was to retain these in the combination claimed, and so invalidate the patent. See *Foxwell* v. *Bostock*, *post*, p. 228.

A disclaimer narrowed the claim to a machine grooved in a particular way. The beneficial results from the use of this was an accidental and new discovery. The effect of disclaimer was to leave a claim for something that was not a "manufacture." See *Ralston* v. *Smith*, *post*, p. 229.

A disclaimer in connection with one claim was held to apply to the other claims, in which the subject of the first claim was included in *Bailey* v. *Roberton*, *post*, p. 270.

A specification described a mode of making eyelets for boots. The mode of manufacture was disclaimed. The effect was to enlarge the claim to the eyelet to an eyelet of the same kind, however made. The wide claim included what was old. *Thierry* v. *Rickmann*, *post*, pp. 391, 393.

As each claim must be read in connection with the whole specification, and as each claim limits a separate, although sometimes subsidiary, monopoly, it follows that there are cases in which the extent of one claim depends on the presence of other claims. For instance, if one claim comprise something that is already included in another, then the wider cannot be construed to comprise only the same invention as limited by the narrower one. A claim cannot be limited by reading into it, in order to avoid invalidity, words that are not there, and so alter the plain meaning.[2]

Illustrations.

One claim was for constructing ships with iron frames. Another was for constructing them with iron frames as described. As the two claims could not be for the same thing the former received a wide construction. See *Jordon* v. *Moore*, *post*, p. 243, and notes thereto.

[1] *Seed* v. *Higgins*, *post*, p. 212, and *Ralston* v. *Smith*, *post*, p. 229, and notes to those cases.

[2] See last note to *Plimpton* v. *Spiller*, *post*, p. 259; *Electric Construction Co.* v. *Imperial Tramways Co.*, *post*, p. 436.

A specification described a mode of dissolving gold from ores. One claim mentioned the use of a solution of a cyanide, the other a dilute solution of a cyanide. As there was nothing to limit each claim to a separate part of the description, it was held that the former was for the use of cyanides generally. See *Cassel Gold Co.* v. *Cyanide Gold Recovery Synd.*, *post*, p. 369.

Two claims for an electric motor-car were in almost similar terms, but one mentioned springs, the other not. The claim in which springs were omitted was therefore one for the arrangement *without* springs. See *Electric Construction Co.* v. *Imperial Tramways Co.*, *post*, p. 436.

One claim was for securing type in a box-holder. Another was for the box-holder in combination with a printing-drum. A third was for the combination of the drum with printing machinery. The last was held not to be confined to the drum as described in the other two claims. *Taylor* v. *Annand*, *post*, p. 445.

The Doctrine of Benevolent Construction.

In the early history of Patent Law, and down to the beginning of the nineteenth century, the Courts frequently took objections of a technical nature to patents, regarding a monopolist patentee as one whose interests were hostile to the public at large.[1] But, as early as 1787, *Buller*, J., in *Turner* v. *Winter*,[2] expressed his strong bias in favour of a patentee who made a full disclosure as against a defendant who attempted to evade a patent. From that expression of opinion many *dicta* have followed in subsequent cases, in which it was freqently said that a meritorious inventor should not be criticised too closely with a view to upset his patent.[3] But finally the rule at the present day avoids both these extremes. The specification is to be construed fairly and reasonably as between the patentee and the public, not putting on forced constructions, or straining the language, either in favour of a supposed meritorious inventor or to defeat a patent.[4] The rule is simply an application of the principle "*verba debent intelligi cum effectu ut res magis valeat quam pereat.*"[5] In

[1] Per *Parke*, B., in *Neilson* v. *Harford*, 1 Webs. 310.

[2] 1 T. R. 606.

[3] Per *Jessel*, M.R., in *Hinks* v. *Safety Lighting Co.*, *post*, p. 257; *Plimpton* v. *Spiller*, and notes, *post*, p. 258; *Otto* v. *Linford*, *post*, p. 288.

[4] Per *Parke*, B., in *Neilson* v. *Harford*, 1 Webs. 310; per Lord *Westbury*, in *Simpson* v. *Holliday*, 13 W. R. 578; per Lord *Blackburn*, in *Dudgeon* v. *Thomson*, *post*, p. 268; per *Kay*, J., in *Edison* v. *Holland*, 5 R. P. C. 475; *Automatic Weighing Machine Co.* v. *Knight*, 6 R. P. C. 307.

[5] *Cropper* v. *Smith*, 1 R. P. C. (per *Cotton*, L.J.), 89, (per *Bowen*, L.J.), 90; *Boulton* v. *Bull*, 2 H. Bl., p 500.

actual practice it merely comes to this: That when there is a reasonable doubt as to whether a wider or narrower ambit is to be given to a claim, and the wider would render the patent invalid, the narrower is to be preferred. In such cases the wider construction should not be adopted unless the patentee showed he clearly intended to make it.[1] But there must be a real ambiguity, not one "manufactured" by argument.[2] There is no authority now in support of the proposition that a benevolent interpretation is to be given to a specification for a pioneer invention; in such the claim is wide because the invention is a wide one (*ante*, pp. 15, 62, 63).[3] It will be found, however, that the natural bias in favour of supporting a valuable patent is not without some effect on the decision as to what is the true construction of the whole document.

Illustrations.

See construction of *Neilson's* specification (1841), *post*, pp. 187, 190.

A specification described the application of a friction clutch to hoists.

A wide construction would include what was old, so the claim was confined to the precise combination described. See *Morris & Bastert* v. *Young*, *post*, pp. 371, 374.

In *Maxim Nordenfelt Co.* v. *Anderson* (*post*, p. 418) the principle of benevolent construction was applied to ambiguity in directions.

See also *Beard* v. *Egerton*, noted *ante*, p. 78.

An invention consisted in the manufacture of incandescent gas mantles.

The invention being a pioneer one, the claim was wide, and not confined to the precise proportions specified. (*Incandescent Gas Co.* v. *De Mare*, *post*, p. 388); but it cannot be extended to include a new discovery, *viz.* that other proportions far outside the given range would be successful. *Welsbach, &c.* v. *Daylight Incandescent, &c.*, *post*, p. 391.

In a specification for the manufacture of a dye, the directions and claim mentioned the use of an autoclave. Unless that vessel was made of iron the process would not produce the desired result. This fact was not known to the patentee. *Held*, that the adjective "iron" cannot be read into the claim. *Badische Anilin, &c.* v. *La Soc. Chim. du Rhone, &c.*, *post*, p. 407.

The question often arises whether a particular claim is to be taken in connection with the directions for putting the invention into

[1] Per *Romer*, L.J., in *Chamberlain* v. *Bradford* (*Mayor*), 19 R. P. C. 92, *post*, p. 482.
[2] Per Lord *Davey*, in *Parkinson* v. *Simon*, 12 R. P. C. 411.
[3] Per Lord *Halsbury*, L.C., in *Cassel Gold, &c., Co.* v. *Cyanide, &c.*, 12 R. P. C. 242. For an illustration, see *Edison & Swan* v. *Woodhouse*, *post*, p. 297.

practice, or in a wider signification. As in the latter case, the patent might be invalid for including something that was old; the natural bias in favour of supporting a patent comes into play. Hence it has in most cases been held that on the true construction the claim is to be limited in its application; but this is by no means the rule. The fact that it would be ridiculous to make the wider claim is not conclusive in favour of the narrower construction. There is, therefore, no presumption that the patentee excluded what was old; he may have claimed it inadvertently.

Illustrations.

In *Haworth* v. *Hardcastle* (1 Webs. 484) and *Oxley* v. *Holden* (8 C. B. 705), the claim was read in the narrower sense, such being the true construction of the whole document.

The claim for fastening the rollers to a roller-skate was held to be a subsidiary one, because it would be ridiculous to hold it to be wide. See *Plimpton* v. *Spiller*, *post*, p. 258.

A claim for an improved lintel was not taken by itself, but only when used as described in fireproof floors in *Fawcett* v. *Homan*, *post*, pp. 383, 388.

A patent was taken out for an improved apparatus for concentrating sulphuric acid. The description showed a process commercially a great improvement on one of twenty years earlier date. But the claim was worded so as to include the old form. The fact that it was suicidal to frame such a claim did not prevent it from receiving a wide interpretation as opposed to a narrow one. See *Kynochs, Ltd.*, v. *Webb*, (per Lord *Davey*), *post*, p. 428.

In a claim for an electric motor-car, the fact that if construed in its natural meaning it would be an absurd one to make is not sufficient to put a strained construction on it. *Electric Construction Co.* v. *Imperial Tramways Co.*, *post*, p. 436.

In *Chamberlain, &c.* v. *Bradford* (*Mayor of*), *Romer*, L.J., acted in accordance with the above practice. See *post*, p. 482.

The construction of the claim should be such as will consistently with the fair import of the language used make the claim of invention co-extensive with the new discovery of the patentee, and not extend it to a wider range than the facts would warrant.[1] This is especially the case with regard to patents for improvements in the specifications of which reference is made to those of the earlier

[1] Per *Tindal*, C.J., in *Haworth* v. *Hardcastle*, 1 Webs. 485.

invention; for the later specification is to be read in the light of the earlier one referred to.[1]

The Doctrine of Equivalents.

As it is obviously impossible for a patentee to foresee the devices that will be adopted, and attempts made by others to take the benefit of his invention without infringing his monopoly, he cannot anticipate them by separate claims. The patent not only covers the precise thing claimed, but the invention substantially. Hence the claim generally includes all known equivalents for the elements comprised in it. To include equivalents undiscovered at the date of the patent would be to give the patentee a monopoly for more than he invented. The questions that arise in practice are two—

1. In what does an equivalent consist in any given case?
2. In what cases is the general rule of equivalents not applicable?

As to the first of these questions, it must not be forgotten that a patentable invention consists of the application of principles or means to attain certain ends (*ante*, pp. 9, 11), not in the principles nor in the ends themselves. To take a common illustration: A pendulum is a device used to obtain a certain motion at equal intervals of time. To produce such a result the natural laws and forces, the attraction of gravitation, the property of inertia, are so applied that there is motion of the "bob" of the pendulum in a given path in which it is constrained to move. It is the application of a law of "constrained motion." Another device to produce the same result is that of the balance-wheel. The force of a spring takes the place of that of gravity, and inertia is made use of by the oscillation of the wheel, the size and distribution of the mass of which are of importance. The pendulum can only work in one position, the balance-wheel in any. Here there are two distinct inventions. The forces or principles are not the same, nor are the immediate results; but the ultimate purpose or object is the same. One is not an equivalent for the other. But when these devices once known are made elements in a larger combination, as, for instance, a meter to supply gas or electricity by time, then one is a known equivalent for the other. If such a meter be described with a balance-wheel as part

[1] *Harmar* v. *Playne*, *post*, p. 182. For an illustration see *Tubes, Ltd.*, v. *Perfecta, &c.*, *post*, p. 453.

of the clockwork mechanism, the claim to the whole combination would include one to a combination in which the balance-wheel was replaced by a pendulum. The question of equivalents, therefore, must depend on the ambit or extent of the invention itself. The cases of equivalents must be very carefully considered in mechanical inventions, all the parts of which are necessarily old; too great a latitude as to including equivalents might have the effect of including a different machine altogether.[1]

Chemical Equivalents.

A claim was for the use of carburet of manganese in the conversion of iron into cast steel. It was subsequently discovered that a paste of black oxide of manganese and coal tar would produce the same result, probably by the formation of the carburet in the furnace. The use of paste being a new discovery, was not an equivalent within the claim. *Heath* v. *Unwin*, *post*, p. 200.

A mantle for gas lighting consisted of oxides of zirconium and lanthanum. A wide range of proportions was claimed. Cerite earth, with little cerium, might be employed instead of lanthanum. The same result could be produced with oxide of zirconium and ½ per cent. of cerium. This being a new discovery, was not an equivalent within the claim. *Welsbach, &c.* v. *Daylight Incandescent Mantle Co.*, *post*, p. 391.

Mechanical Equivalents.

A specification described a combination, an improvement upon a previous invention of clutch-box mechanism to effect certain changes in spinning machinery. The claim for the improved device included "any mechanical equivalent therefor." These words were construed narrowly, and the claim did not include mechanism in which each part was different, although the mechanical results produced in the larger machinery of which it formed a part were the same. See *Curtis* v. *Platt*, *post*, pp. 231, 236, 242.

A claim was for a process of manufacture, one step in which consisted in separating a substance by means of a centrifugal machine. This included (regarding the essential features of the process) a process of separation by gravity, *i.e.* ordinary settling and skimming. *Benno Jaffé, &c.* v. *Richardson*, *post*, p. 356.

There are many cases in which the claims do not include equivalents, but are confined to the precise form of the combination claimed

[1] Per *Smith*, L.J., in *Brooks* v. *Lamplugh*, *post*, p. 414; per Lord *Herschell*, in *Morris & Bastert* v. *Young*, *post*, p. 374; *Curtis* v. *Platt*, *post*, p. 239.

and described. Such claims have a narrow construction (1) if they be worded in the first instance to exclude equivalents; or (2) if from the general tenor of the specification they must be so construed.

But there is another case which frequently occurs in which equivalents may be excluded. As a claim may be worded in different ways, but be substantially the same in effect, the question of the inclusion of any given alleged equivalent is a question of construction of the claim. It frequently happens that in order to include an alleged infringement on the ground of an equivalent being taken, the claim must be so paraphrased or interpreted as to include also some other equivalent that would be an anticipation. Then the patentee is in a dilemma; his claim either includes the alleged infringement and is invalid, or excludes it and is valid. In such cases, on the doctrine of Benevolent Construction, both equivalents are excluded.

Illustrations.

In a specification for improvements in roving cotton the invention described a presser actuated by centrifugal force. A disclaimer subsequently filed disclaimed the application of centrifugal force generally. The claim was thereby confined to the particular form of presser shown. See *Seed* v. *Higgins*, *post*, p. 216.

See *Dudgeon* v. *Thomson*, *post*, p. 263, for the principles on which disclaimers and amendments are to be construed.

A claim for a smokeless powder mentioned the use of nitro-glycerine and soluble nitro-cellulose (*i.e.* dinitro-cellulose). The method of manufacture described would also succeed with insoluble nitro-cellulose (*i.e.* gun-cotton). But it was not an equivalent, because (1) unknown as such at the date of the specification and (2) excluded by use of the word "soluble." *Nobel* v. *Anderson*, *post*, p. 366.

An improved method of effecting electrolytic decomposition of alkalies consisted in keeping the mercury cathode stationary, and moving "bells" over it containing the liquid. This invention was a new application of the same principles as were used in older devices. An alleged modification consisted in rotating the mercury, keeping the bells stationary. This was not an equivalent, but a distinct invention. *Castner-Kellner Alkali Co.* v. *Commercial Development Corp.*, *post*, p. 436.

A specification described a refrigerating and condensing apparatus. The refrigerating part was disclaimed. A number of diagrams showed forms of condensers consisting of a central tube, and a series of others concentric with it. By this arrangement a series of annular concentric spaces were formed. These were alternately

steam spaces and water spaces. The steam was admitted to the steam spaces and condensed by the cold water in the water spaces. One feature mentioned was the reversibility of the apparatus by using steam as water spaces and *vice versâ*. A disclaimer noted "that no claim is made herein generally to the use of annular condensers, consisting of a series of concentric tubes, being alternate steam and water spaces, but only to such condensers as are constructed and arranged substantially as hereinbefore described." The effect of this was to exclude equivalents. The claims did not therefore include a condenser in which a steam space lay between and concentric with a central water space and an outer one, the steam space being divided so as to form a kind of helical pipe, and the parts being of such proportions as not to be reversible in action. *Hocking* v. *Hocking*, 6 R. P. C. 69.

Compare cases under "Test of Disconformity," *ante*, pp. 71, 72.

Amended Specifications.

Where the specification has been amended, the right to make the amendments cannot be questioned in subsequent proceedings.[1] As amendments are not allowed which have the effect of enlarging the scope of the original invention, it follows that an amended specification has no wider claim than an unamended one. But the original wording may be looked to, on the question of construction, what is struck out operating as a disclaimer.[2] As specifications are usually published showing the amendments by means of erased and italic type, the attention of the reader must necessarily be called to the changes, and the impression conveyed by the whole document, that is, its interpretation or meaning be affected thereby. If it be construed in a practical and commercial manner (*Crossley* v. *Beverley*, 3 C. & P. 515) these alterations cannot be ignored.

Although there are cases to be found in which the provisional specification has been quoted as an aid in determining the real invention claimed in the complete,[3] yet the rule appears to be that the complete must be construed separately, and then the provisional looked to in cases of alleged disconformity only to determine if the invention be included therein.[4]

[1] *Moser* v. *Marsden*, *post*, p. 374.

[2] *Dudgeon* v. *Thomson*, *post*, p. 263, and *Moser* v. *Marsden*, *post*, p. 374, and notes to these cases.

[3] See *Clark* v. *Adie*, *post*, p. 259.

[4] *Bailey* v. *Roberton*, as explained in *Hocking* v. *Hocking*, *post*, p. 274.

CHAPTER VII.

PROCEDURE TO OBTAIN A PATENT.

First Steps—Jurisdiction of the Comptroller-General and Law Officers, p. 101—Mode of Application, p. 104—With Provisional Specification, p. 105—Steps after Provisional Protection, p. 109—The Complete Specification, p. 110—Reference to Examiners, p. 115—The Act of 1902, p. 116—Acceptance, p. 117—Inventions relating to War, p. 117.

First Steps.

WHEN an inventor has thought of a new invention, he should, as far as possible, try it experimentally, as well as work it out theoretically, before applying for a patent, so that there be less risk of a wrong description in the first instance. In most cases, however, experiments cannot be carried c ıt, nor models made, without disclosing the nature of the invention to persons employed. Although such disclosure under a promise of secrecy is not publication, yet there is always the risk of unauthorized or accidental disclosure to others by the persons confidentially employed (*ante*, p 25).

When the inventor cannot proceed further without risk of publication, he should at once apply for a patent, and file a provisional specification.

If the invention be of such a nature that there is great probability of rival inventors being also engaged on the problem and working on the same lines, as, for instance, where it consists of the application of newly discovered natural phenomena, *e.g.* X rays, or electric vibrations of the ether, it is of the greatest importance to secure provisional protection at the earliest date possible.

The inventor should take all steps possible to ascertain if his invention is a novel one before applying for a patent, or immediately provisional protection has been obtained. He may search at the Patent Office library, where all British specifications are available

classed and abridged to facilitate reference. Specifications of United States patents, and abridgments of those of other countries, can also be seen there.[1] He should also refer to scientific and technical journals relating to the art in question. These investigations may be conducted by an agent. Such research is greatly facilitated by consulting professional advisers, as consulting engineers (electrical or mechanical), consulting chemists, and patent agents, many of whom, in addition to the knowledge of their profession, are experts in various arts and manufactures. Consulting experts keep themselves abreast of the knowledge of the day.

The Jurisdiction of the Comptroller-General and Law Officers.

Letters patent for inventions were formerly issued under the Great Seal.[2] The Lord Chancellor, as custodian of the Great Seal, was the ultimate judge as to the issue of a patent, being the sole judge of the common law branch of the Court of Chancery.[3] By the Patent Law Amendment Act of 1852, the Commissioners of Patents were empowered to make and use a seal for sealing the warrant as directed by the law officer[4] and required by the applicant for letters patent. In pursuance of the warrant the patent was prepared and ultimately sealed with the Great Seal.[5] The powers of the Lord Chancellor were by the Act of 1852 expressly reserved as before the passing of that Act.[6]

But now, under the Act of 1883 (sect. 12, *post*, p. 489), patents are sealed with the seal of the Patent Office, which has the same effect as the Great Seal. If the law officers decide that a patent be sealed there is no room for any appeal, the direction to seal (sect. 12) being mandatory. If the ultimate decision be against the applicant, the Act is silent as regards any appeal. In the absence of any provisions for that purpose, it appears that the decision is final.[7]

The duties of the Comptroller and Law Officers in relation to the grant of patents are administrative, and in part judicial. The administration of the statutes as regards the granting of patents

[1] For details, see par. 24 of Circular of Information, *post*, p. 598.
[2] 2 Bl. Com. c. 21, sect. 2.
[3] 4 Inst. 79, 80, 84; 1 Shep. Abr. 464.
[4] 15 & 16 Vict. c. 83, sects. 2, 15.
[5] *Ibid.* sect. 18.
[6] *Ibid.* sect. 15.
[7] Compare *Horseley & Knighton's Patent*, L. R. 4 Ch. Ap. 784.

and the amendment of specifications is entrusted to the Comptroller, with an appeal under certain conditions to one of the Law Officers of the Crown, that is, the Attorney- or Solicitor-General for England.

From the law officers there appears to be no appeal, nor any means of reviewing their decisions.[1]

As a general rule (the statutory exceptions to which are discussed in the following pages) neither the Comptroller nor the Law Officers have any jurisdiction to decide questions involving the validity[2] of patents; they cannot enter into the question generally whether the applicant's invention is novel or subject matter for a patent.[3]

But under the Act of 1902, the Comptroller investigates the question of novelty so far as the invention claimed is published within fifty years in earlier British specifications. In the event of the applicant not amending his claims so as to exclude the alleged anticipation, a reference to the earlier specification may be required, subject to appeal to the law officer (2 Edw. 7, cap. 34, sect. 1, *post*, p. 523). This procedure takes place at a later stage, and is discussed *post*, p. 116.

An invention[4] will be subject-matter if it be a "manufacture" within the meaning of the Statute of Monopolies (*ante*, p. 6), and not one of so simple a nature that a patent for it would be hurtful to trade or generally inconvenient (*ante*, p. 20). It is within the jurisdiction of the Comptroller to take the question of the invention being a manufacture into consideration and reject the application;[5] but in the case of an invention that is an improvement this is not done (except in cases of opposition to sealing); for the determination whether the *addition* to the stock of public knowledge be a manufacture or not involves the question of novelty, and an examination into what has been done before.[6] Except in the case just mentioned (and in certain cases of opposition, *post*, p. 118), neither the Comptroller nor Law Officers can inquire into subject-matter.

Cases frequently occur in which an applicant claims more than he is entitled to, sometimes by claiming that which is merely an

[1] *Van Gelder's Patent*, 6 R. P. C. 22; *The Queen* v. *Comptroller-General* (*Ex parte Tomlinson*), 16 R. P. C. 233.

[2] *Haythornwaite's App.*, 7 R. P. C. 70; *Todd's Patent*, 9 R. P. C. 487; *Thornborough & Wilks' Patent*, 13 R. P. C. 116 (45).

[3] *Jones' Patent*, Gr. L. O. C. 34; *Todd's App.*, *post*, p. 132.

[4] For definition, see sect. 46 of Act of 1883, *post*, p. 502.

[5] *Cooper's App.*, 19 R. P. C. 53; *Johnson's App.*, 19 R. P. C. 56.

[6] *Todd's Patent*, 9 R. P. C. 487.

improvement in terms more general than the extent of the invention warranted. It is not the applicant's interest to obtain an invalid patent by claiming too much. Hence there is a tendency in the interests of the applicant to insist on such amendments as would narrow the claim to what could be supported.[1] It must not be forgotten that, under the Act of 1883, there is no jurisdiction to require amendments on any such ground (the applicant being supposed to look after his own interests), but where required the jurisdiction frequently exists in consequence of the case coming within the provisions of sect. 11 (*post*, p. 135). Another ground on which such amendments are sometimes required is that it is not in the interests of the public that they should be led to suppose the description is for a claim entirely general, whereas it is only limited to the improvement.[2] But considerations of "public interest" are for the Legislature when considering the provisions of a Bill, but cannot extend the jurisdiction given by the Act as regards opposition or amendments. It is not in the "public interest" that any invalid patent should be granted; hence, if "public interest" could give jurisdiction, the Comptroller's powers might be enlarged to a great extent.

But under the Act of 1902 the powers of the Comptroller and Law Officers have been considerably enlarged with respect to examination of previous British specifications, and power is given to require insertion of references to previous specifications in the interests of the public; but power is not given to refuse the grant on the ground of anticipations disclosed by the search. That power exists only in cases of opposition (*post*, p. 119). This examination takes place after the complete specification has been filed, and is discussed *post*, p, 116, 151.

The Comptroller may refuse to grant a patent for any invention the use of which would in his opinion be contrary to law or morality,[3] *e.g.* burglars' tools, instruments of gaming, such as loaded dice, weighing appliances adjustable falsely, spring-guns or man-traps for use in grounds, or elsewhere than in a dwelling-house.

[1] *Hoskins' Patent*, Gr. 292.
[2] *Newman's Patent* (No. 2), 5 R. P. C. 281.
[3] Sect. 86 of the Act of 1883, *post*, p. 504.

Modes of Application.

When an application is made the proper forms must be used, for the application is made either by the true and first inventor (or importer of invention from abroad), with or without others, or by a patentee of an invention patented abroad who applies under the International and Colonial arrangements.[1] The latter are considered *post*, p. 176.

If the applicant be incapable, on account of infancy, lunacy, or other inability, of making the necessary declarations, or of doing anything required to be done by the Act or Rules, then the guardian, committee, or person appointed for that purpose by the Court or judge may make the necessary declarations, or do what is necessary on behalf of such incapable person.[2]

In case of the death of an inventor, his legal representative may apply for a patent within six months of the death.[3] The proper evidence of the applicant being the representative of the deceased inventor must be supplied.[4]

The following directions as to the mode of applying for a patent are given in the Circular of Information issued by the Patent Office:—

1. *Mode of applying for Patents in the United Kingdom.*

(i.) All applications and communications must be made in English. No models are required.

(ii.) Any person, whether a British subject or not, may make an application for a Patent, either by direct communication with the office or through the intervention of an agent. See paragraph 16 (*d*), *post*, p. 595.

Two or more persons may make a joint application for a patent, and a patent may be granted to them jointly. In every case the true and first inventor (or inventors) must be a party (or parties) to the application.

Applicants must apply in their real names, and not under assumed or trade names.

A company (body corporate) may apply for a patent as joint applicant with the inventor, but not as sole applicant, unless the application is made in respect of an invention communicated

[1] The persons entitled to obtain patents are mentioned *ante*, pp. 48, 49.
[2] Sect. 99 of the Act of 1883, *post*, p. 506.
[3] Sect. 34 of the Act of 1883, *post*, p. 498.
[4] Rule 6, *post*, p. 527.

from abroad, or under the International and Colonial arrangement (*see* paragraph 22, *post*, p. 596). The application should be made under the seal of the company.

A firm as such cannot apply for a patent, but a joint application may be made by all the individual members of the firm.

The application[1] on Form A (or A1 or A2) must be signed by the applicant or applicants; but all other communications may be made by or through agents duly authorized to the satisfaction of the Comptroller.

(iii.) Applications must be left at the Patent Office by hand, or sent by post,[2] addressed to the Comptroller, Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

(iv.) Every application must be accompanied by a statement of an address to which all communications from the Patent Office may be sent.

(v.) Application for a patent may be made in one of two ways: The applicant may apply in the first instance for provisional protection, and at any later period within nine[3] months may leave his complete specification, or the applicant may leave his complete specification at the time of making his application, in which case a provisional specification is unnecessary.

The form of application contains a declaration to the effect that the applicant is the true and first inventor, or if there be joint applicants, that one or more of them are the inventors.[4] The declaration may be a statutory one,[5] and must be made as prescribed by rules 25, 26, *post*, p. 531. For further details, see rules —as to address of applicant, No. 7, *post*, p. 527; as to size of documents, No. 17, *post*, p. 529; and as to agency, No. 81, *post*, p. 541.

The Provisional Specification.

As a general rule the better and safer method is to take out a provisional specification. Applications accompanied by complete specifications only are usually made in cases where the invention has already been perfected, as where it is imported from abroad

[1] Form A is for British true and first inventors only. Form A1 is for all inventions communicated from abroad, whether from corporations or individuals. Form A2 is for foreign patentees under sect. 103, whether corporations or individuals. *La Société An. du Generateur du Temple*, 13 R. P. C. 54.

[2] As to applications by post, see sect. 97 of Act of 1883, *post*, p. 505, and Rule 8, *post*, p. 527.

[3] This period will be six months after sect. 1 of the Act of 1902 comes into operation, *post*, p. 523.

[4] Sect. 5 (2) of the Act of 1883, *post*, 486.

[5] Sect. 2 of the Act of 1885, *post*, p. 515.

and foreign specifications have already been drafted. The following are the directions given in the Circular of Information :—

1. *Mode of applying for Patents in the United Kingdom (continued).*
Application accompanied by Provisional Specification.

(vi.) An application for provisional protection consists of—
(*a*) The application, Form A or (for inventions communicated from abroad) A1, stamped £1, duly filled in, and signed by the applicant or applicants, and
(*b*) The provisional specification, Form B, in duplicate. Form B does not require to be stamped.

(vii.) The provisional specification must fairly describe the nature of the invention and be accompanied by drawings if required. See rules 18–24, *post*, p. 529. The applicant should in this document give a clear description of the invention, but he need not enter into minute details as to the manner in which the invention is to be carried out.

(viii.) Unless a complete specification, stamped £3, is left within nine months from the date of application (or with extension fee, ten months),[1] the application is deemed to be abandoned. The complete specification should be prepared as stated at (x.) *post*, p. 111. It should refer to the number and date of the provisional specification, and should contain a full and detailed description of the invention, independent of the description given in the provisional specification.

The provisional specification should be drawn as wide as the nature of the invention will fairly allow. The invention claimed in the complete may be narrower than that indicated in the provisional, but it may not be wider. The reason for this rule and the functions to be discharged by the provisional are discussed *ante*, pp. 54–56.

The title of the invention must be properly given. The nature and object of the title have been discussed *ante*, pp. 52, 53. Its chief use at the present day is for purposes of classification ; and it is to be examined by the examiners[2] or Comptroller.

Par. I. (xi.) of the Circular of Information is as follows :—

Titles of Inventions.

(xi.) The title of the invention should appear on the application form and at the commencement of the specification, and the wording of the title in the two documents should be identical.

[1] After sect. 1 of the Act of 1902 comes into operation, these periods will be six and seven months respectively.

[2] Sect. 2 (1) of Act of 1888, *post*, pp. 487, 519.

In the title of the invention the following forms are not allowable :—

(*a*) Fancy names or titles, *e.g.* The Simplex Wheel; The Hercules Braces.

(*b*) The use of the inventor's name, or of the word "Patent."

(*c*) The abbreviation "*etc.*" This should be replaced by words expressing the intended meaning of the term, or by the phrase "and the like."

Illustrations of sufficiency of titles are given in connection with amendment of specifications, *post*, pp. 114, 115, 167, 170.

Drawings must be supplied if required by the Comptroller.[1] Full information on this subject will be found in the Patent Rules numbered 18–24, *post*, pp. 529–531.

The application must be for one invention only ;[2] if the application be made for more than one invention it will be refused. But if by mistake, inadvertence, or otherwise, two or more inventions be included, the Comptroller will allow it (before the acceptance of the complete specification) to be amended so as to include one only, and the applicant may proceed with other applications for the other inventions, all bearing date of the original application, if the applicant so notify his desire to the Comptroller.[3] The question of what is meant or included in the term "invention" is discussed *ante*, pp. 6–17, 34–46. In addition to the information there given, the application of the rule is illustrated in the following cases.

Illustrations.

In *Jones's Patent* (Griff. 265), *Herschell*, S.-G., on appeal from the Comptroller, who refused an application on the ground that more than one invention was included, pointed out that "the *general object* of the invention is the test by which the question of one invention must be decided." Alternative and analogous devices to accomplish the same object would be one invention. "I should always allow alternative devices for producing a particular object as one invention. But if you say, 'I have invented six different kinds of railway sleepers, each of which has its own merits and purposes and object distinct,' then those are six inventions." . . . "You may get in one patent the combination, and you may get all subordinate parts of that combination, so far as you claim to use them for the one main purpose, but if you are going to claim a subordinate part, or one of the elements of the combination, for a purpose

[1] Sect. 5 (3) of Act of 1883, *post*, p. 486. [2] Sect. 33 of Act of 1883, *post*, p. 498.
[3] Sect. 2 (1) of Act of 1888, *post*, p. 487; rule 9, *post*, p. 527.

independent of the combination, then you have got an extra invention, and it is not all one."

A patent was applied for, the title of which was, "Improvements in apparatus for rapidly heating flowing water, *a part of which improvements is applicable to other purposes*." The provisional specification described an arrangement whereby the water and gas cocks in a geyser could only be turned on in the proper order. The arrangement was also described as being applicable for an oxyhydrogen light apparatus. *Held*, that the portion of the title in italics must be struck out and the corresponding parts of the provisional, the proper course being to make a separate application for the "new and improved arrangement of cocks," *viz.* that part applicable also to limelight apparatus. Per *Davey*, S.-G., in *Hearson's Patent*, Griff. 266.

An invention was described as one for "improvements in the art of producing and utilizing induced electrical currents for telegraphy and other purposes." The Comptroller held that the title should not state that the appliance could be used for purposes other than telegraphic, and that the general use of the invention should be claimed by a separate patent. On appeal to the Law Officer, it was *held* by *Herschell*, S.-G., that the applicant should choose to refer in the title either to an improved telegraphic apparatus, consisting in the employment of the appliance therein, or to "Improvements in the art of producing and utilizing induced electrical currents," not being confined to telegraphs. The applicant chose the latter. *Robinson's Patent*, Griff. 267.

The importance of confining the applicant to one invention will be seen from considering the rights of rival inventors. This aspect of the question is discussed in connection with disconformity in the Appendix, *post*. pp. 607, 608.

The application will be referred to an examiner to report whether the nature of the invention [1] has been fairly described, and the application, drawings, etc., have been prepared in the prescribed manner, and if the title be sufficient.[2] (See *Brown's Patent*, *post*, p. 114.)

If the report be unfavourable, the application may be refused, or allowed subject to amendments.[3] This provision gives power to the Comptroller to require an amendment of the title.[4] When allowed, the application may be dated as of the date when these

[1] As to "nature of invention," see *ante*, pp. 54-56, 59.
[2] Sect. 6 of Act of 1883, *post*, p. 486.
[3] Amendments are discussed, *post*, p. 160.
[4] *Dart's Patent*, Griff. 308.

requirements are complied with.[1] It is therefore important that a proper application be made in the first instance, for during the period of delay publication of the invention may take place by documents coming from abroad or otherwise, or a rival foreign inventor may in that interval obtain protection abroad and subsequently apply under International arrangements.

When the provisional specification has been accepted, notice will be sent to the applicant and the acceptance advertised in the Official Journal.[2]

Steps after Provisional Protection.

Provisional protection is conferred by the acceptance of the application. The inventor may then proceed to perfect his invention without fear of publication, but he cannot sue for infringement until his patent is finally sealed.[3] The right to proceed against others only applies to acts of infringement committed after the publication of the complete specification. After provisional protection has been secured the inventor should make the best use of the time intervening before the complete specification has to be filed in making tests of a critical nature and experiments. These experiments should be made not only with a view to perfecting the invention and ascertaining the best mode of performing it, but also to find out if his explanation or theory of his discovery be the correct one, and also what conditions or parts are, and what are not, essential to success. He should also ascertain as far as possible during this period how near prior inventors have gone to produce his results, so that he may narrow his claims accordingly. Valuable patents have frequently been lost for want of such an investigation.

Illustrations.

Medlock's patent for aniline dye was invalid because the provisional described a process, part of which consisted in making a certain solution. Heating was necessary for success, but the complete reproduced the provisional, and apparently no experiments were made to test the process critically. See *Simpson* v. *Holliday*, *post*, p. 244.

A specification described the maintaining automatically of the pressure of electricity, or electric potential, in the mains of a system of

[1] Sect. 7 (1) of Act of 1883, as amended by sect. 2 of Act of 1888, *post*, p. 487.

[2] Rule 11, *post*, p. 528.

[3] Sects. 13, 14, 15 of the Act of 1883, *post*, p. 490.

lighting by means of storage cells. In fact the cells discharged at a lower potential difference than that produced in charging, so would not work. The patent was invalid because useless. A critical experiment would have revealed the defect. *Lane Fox* v. *Kensington*, *post*, p. 345.

The successful manufacture of a new dye depended for success on the presence of iron at a certain stage of the process. This was furnished by the use of an iron vessel. The patentee never discovered this essential until the trial of an action for infringement. The patent was invalid for insufficiency of directions. *Badische Anilin, &c.* v. *La Soc. Chimique des Usines du Rhone*, *post*, p. 405.

The Complete Specification.

The time allowed for leaving the complete specification is nine months from the date of application.[1] But where the circumstances justify it, an extension of one month may be allowed by the Comptroller,[2] on a proper application being made to him, stating and proving the circumstances and grounds of the application.[3] If the complete specification be not lodged within the nine or ten months (as the case may be) the application will be deemed to be abandoned.[4] The provisional specification of an invention that has been abandoned is not now open to public inspection.[5]

In the case of applications made after the date on which sect. 1 of the Act of 1902 (*post*, p. 523) comes into operation, the complete specification must be lodged within six months (unless extended by the Comptroller to seven), or the application will be deemed abandoned.

The complete specification is required to discharge two functions. It must particularly describe and ascertain the nature of the invention, and in what manner it is to be performed. This branch of the subject, including the relation of the complete to the provisional has already been discussed (*ante*, Chap. V. p. 52). There remains, however, to notice the requirements as to the form of the specification. An application may be made in the first instance accompanied by a complete specification. This course is pursued where the invention is of such a nature that no experiments are necessary, or

[1] Sect. 8 (1) of the Act of 1883, *post*, p. 487.
[2] Sect. 3 of the Act of 1885, *post*, p. 515.
[3] Rule 10, *post*, p. 528.
[4] Sect. 8 (2) of the Act of 1883, *post*, p. 487.
[5] Sect. 4 of the Act of 1885, *post*, p. 516.

where such can be made without risk of publication of the invention. This usually happens when the experiments have been made abroad. The following are the directions given in the Patent Office Circular of Information. Where a provisional has been lodged par. ix. (*a*) does not apply :—

Application accompanied by Complete Specification.

(ix.) An application accompanied by complete specification consists of—
(*a*) The Application Form A or (for inventions communicated from abroad) A1, or (for applications under the International and Colonial arrangements) A2, stamped £1, duly filled in, and signed by the applicant or applicants; and
(*b.*) The complete specification, Form C, stamped £3, and unstamped duplicate.

(x.) The complete specification must be begun upon Form C (bearing a £3 stamp), and continued, if necessary, on foolscap paper. The duplicate must be an exact copy, but unstamped. The specification should contain a full and detailed description of the invention, of such a nature that the invention could be carried into practical effect by a competent workman from the directions of the document alone.[1] The specification must be accompanied by drawings if required. See Rules 18–24, *post*, p. 529.

It is necessary to make a distinct and proper statement of claims in the complete specification. The claims should form in brief a clear statement of that which constitutes the invention, and inventors should be careful that their claims include neither more nor less than they desire to protect by their patent.[2] In the claims the actual novelty or novelties in the structure, or composition, or processes, or apparatus, should be stated.[3]

Claims are not intended to be made for the efficiency or advantages of the invention.[4]

Unless the complete specification is accepted within twelve months (or with enlargement of time, thirteen, fourteen, or fifteen months) from the date of application, the application becomes void, and cannot be further proceeded with.

The complete specification must begin with the title. The nature and function of the title are explained *ante*, pp. 53–106. The title should be the same as in the application and provisional, and should not include fancy names, the inventor's name, or the terms

[1] This condition is fully discussed and illustrated *ante*, pp. 72–78.
[2] See, as to claims, *ante*, pp. 57, 63.
[3] *Ante*, pp. 89, 90.
[4] Claims are only for the *invention*; as to its extent, see *ante*, pp. 11, 61.

"patent" or "etc." (*ante*, p. 107). The sufficiency of titles is further illustrated under Amendment of Specifications, *post*, pp. 167, 170.

After the title there is frequently inserted a short statement of the objects of the invention, or of the difficulties that it is intended to overcome. The uses and advantages need not be mentioned at all (*ante*, pp. 11, 61), nor the objects to be achieved, but they are frequently inserted in the body of the specification to show the extent of the claim. A statement of the difficulties to be overcome involves a statement of prior knowledge. There is no objection to an honest statement of the state of knowledge of the day, which, of course, the applicant makes at his own peril; if incomplete it may lead to a wide construction being put on his claims, and so tend to invalidate the patent, or if misleading, will invalidate the patent.[1] He may if he choose state generally defects in earlier processes or inventions, but if such a statement be not made in a specification when originally drawn, an applicant will not be allowed by amendments to subsequently introduce a statement that an invention (for which a prior patent existed) had certain disadvantages.[2] In making such a statement previous specifications may be referred to, but not in such a manner as to give any particular construction to them; they should speak for themselves.[3]

Theories should be omitted, and enunciation of principles upon which the invention is based, unless such mention of principles be an easy way of pointing out the extent of the invention claimed (*ante*, p. 60). The form of the specification will depend on the subject-matter of the invention; for instance, in the case of dyes, the chemical principles are frequently shortly stated, and then a series of practical examples given;[4] in the case of improvements, references are frequently made to prior specifications;[5] mechanical inventions are necessarily described at length, first in general terms and then in detail, with references to drawings.[6]

Directions as to details in the preparation of the specification and drawings are given in the Patent Rules numbered 17–24, *post*, pp. 529, 530, 531.

[1] *Atherton's Patent*, 6 R. P. C. 547. See also *Owen's Patent*, *ante*, pp. 75, 76.
[2] *Hampton & Facer's Patent*, Gr. L. O. C. 14; *Guest & Barrow's Patent*, 5 R. P. C. 316.
[3] *Atherton's Patent*, 6 R. P. C. 548.
[4] See for illustration, *post*, pp. 363, 405.
[5] Instances will be found *post*, pp. 233, 370, 453, 463.
[6] For illustrations see *post*, pp. 277, 283, 300, 358, 407, 414, 437, 463.

The claims are drawn entirely at the risk of the applicant. So long as sect. 5 (5), *post*, (p. 486), is in form complied with, there is no jurisdiction on the part of the Comptroller-General or the Law Offices to require amendment, or to refuse the application because the claim is not for the invention as described.[1] But the usual practice is to call the attention of the parties, in cases of opposition, to the points to which objection might exist and leave it to them to suggest and consent to amendments.[2] The applicant should never presume on this practice, as it is his duty, in the first instance, to make the proper claims; for amendments are not allowed as of course, and should only be made somewhat sparingly.[3] Where claims have been disallowed it has been in cases of opposition on some statutory ground, the specification being accepted subject to a claim being struck out as a condition (see Opposition, *post*, p. 135). Although there can be only one invention described in the specification, there may be several claims,[4] either principal for different parts, or some subsidiary.[5]

Two difficulties always confront the applicant in framing his claims. No matter how thorough his search may be as regards prior specifications British and foreign, and other specifications within the realm, yet there may exist things made and used which may subsequently be brought to light and either invalidate the patent for want of novelty, or have the effect of narrowing the claim by the operation of the rule of benevolent construction (*ante*, pp. 93–96).

For illustrations, see *Lyon* v. *Goddard*, *post*, p. 358.

· *Morris* v. *Young*, *post*, p. 371.

To meet this difficulty he should frame his claims as distinct and narrow as possible, confining them to the essential elements of his invention.[6]

On the other hand, he cannot foresee the course that will be taken by members of the public in order to get the benefit of the

[1] *Smith's Patent*, Gr. 268; *Everitt's Patent*, Gr. L. O. C. 27; *Newman's Patent*, 5 R. P. C. 277.

[2] *Newman's Patent*, 5 R. P. C. 277; *Webster's Patent*, 6 R. P. C. 164.

[3] *Garnet's Application*, 16 R. P. C. 156; *Thomas and Prevost's Application*, 16 R. P. C. 70.

[4] Sect. 33 of Act of 1883, *post*, p. 498.

[5] See *ante*, pp. 58, 63.

[6] See remarks of Lord *Herschell* in *The Lancashire Explosives Co.* v. *Roburite*, &c., *post*, p. 397.

knowledge he gives in his specification without infringing his claim; nor can he foresee that his invention may be used for purposes other than those for which it was originally devised. To avoid the unfair use of his invention his claims should be as wide as possible.

Two methods are pursued in order to achieve these apparently inconsistent objects; each has its advantages and defects. One is to make a series of claims, some wider (as, for instance, for a process consisting of the application of certain principles in a certain manner, or by means of a certain machine or combination) and others narrower (as, for instance, for the mode of application; the machine, or combination itself); the latter being in most cases subsidiary claims (*ante*, p. 58). The advantage of this method is, that if it be subsequently discovered that, owing to the state of public knowledge, or to prior grants, the wider claims would invalidate the patent, they may be struck out by disclaimer, and the patent remain valid as regards the remaining claims. The defect of this method is that it tends to defeat the object for which it is pursued. For the juxtaposition of such claims, unless they be clearly expressed, affects the construction of them, and the tendency is, in cases of doubt, to construe the larger ones wider, and the minor ones narrower, than if each stood alone (*ante*, p. 92).

The second method of attempting to achieve these inconsistent objects is to draft the claims in a neutral manner, so that when subsequent events make it advisable to avoid alleged anticipation, reliance may be placed on the doctrine of Benevolent Construction (*ante*, pp. 93–96); or, if no anticipation be alleged, the doctrine of Equivalents (*ante*, pp. 96–99) may be invoked to cover the alleged infringement. The objections to this method are, that it tends to obscure the patentee's rights, so promoting litigation; and that if it appear that the claims have been drawn intentionally in an ambiguous manner, the patent will be invalid (*ante*, p. 59).

When an application is accompanied by a Complete Specification it is referred to an examiner and dealt with in the same way as a Provisional (*ante*, p. 108).

Illustration.

Application was made for a patent for "improvements in casks and tubs." The complete stated that the invention was applicable to barrels,

casks, "and analogous vessels," in which staves were formed with a croze or groove for receiving the head or bottom. The claims were narrow and clear and related only to the manner in which the heads were fastened in. *Held* by the Law Officer that the title was sufficient, without the addition of the words "and analogous vessels." See further *Brown's Patent*, Gr. L. O. C. 1.

Reference to Examiners.

Where a complete specification is lodged after a provisional both specifications are referred to an examiner, who is to examine and report whether the invention particularly described in the complete is substantially the same as that in the provisional, and whether the complete has been prepared in the prescribed manner. If the report be unfavourable, the comptroller may refuse to accept the complete unless and until it be amended to his satisfaction.[1] But the Comptroller can also at this stage require amendments as he may think necessary without any reference to an examiner.[2] From his decision there is an appeal to the Law Officer.[3] The Law Officer's rules relating to notices, evidence, and costs are set out *post*, p. 571.

Illustration.

The title of the provisional was for "improved means for regulating the action of dynamo electric machines *and motors*." In the complete the last two words were left out. The applicants said that they found that part of the invention was inapplicable for motors, and so drew the complete on narrower lines. *Held*, by *Webster*, A. G., that if the title do not correspond with the application the Comptroller may require amendments under Sec. 7 (1), but that no amendment of the title is required when the patentee drops part of his invention. But he may lodge a complete dropping part of the title, and then request the Comptroller, after examination under Sect. 9, to amend the title in provisional under Sect. 7. "It must, however, be distinctly understood that such an amendment in the title and provisional ought in my opinion to be confined to excision only, and not to amendment or other explanation, and the excision must be such as does not extend the scope of the title." *Dart's Patent*, Gr. 307.

[1] Sect. 2 of Act of 1888, *post*, p. 487. [2] *C.'s Application*, 7 R. P. C. 250.
[3] Sect. 9 of the Act of 1883, *post*, p. 487.

The Act of 1902.

In addition to these inquiries directed by the Act of 1883, the Act of 1902 requires a much more extended and important inquiry. It applies to all applications made after sect. 1 of that Act comes into force on a date to be directed by the Board of Trade (sect. 1 (11), *post*, p. 524).[1] "Forthwith," upon the depositing of the complete specification, the examiner is to "make a further investigation for the purpose of ascertaining whether the invention claimed has been wholly or in part claimed or described in any specification (other than a provisional specification not followed by a complete specification) published before the date of application, and deposited in the Patent Office pursuant to any application for a patent made in the United Kingdom within fifty years next before the date of the application" (sect. 1 (1), *post*, p. 523).

"If on investigation it appears that the invention has been wholly or in part claimed or described in any such specification, the applicant shall be informed thereof, and the applicant may, within such time as may be prescribed, amend his specification, and the amended specification shall be investigated in like manner as the original specification" (sect. 1 (2), *post*, p. 523).

If there be no such anticipation discovered, and if there be no other lawful ground of objection, the specification will be accepted.

But "if the Comptroller is not so satisfied, he shall, after hearing the applicant, and unless the objection be removed by amending the specification to the satisfaction of the Comptroller, determine whether a reference to any, and if so what, prior specifications ought to be made in the specification by way of notice to the public." An appeal will lie to the Law Officer (sect. 1 (6) (7), *post*, p. 524).

Until the practice has been settled and decisions reported, the principles, methods of application, and effects of this enactment cannot be fully understood. However, a guide is afforded in the decisions reported in connection with the second ground of opposition discussed in Chap. VIII. *post*, p. 126 (see also *post*, p. 151). In consulting such decisions two important differences must be kept

[1] There is no time yet fixed for the section to come into operation; some time must necessarily be required to enable the Comptroller-General to increase the staff and make other arrangements.

in mind. The first is that this enactment applies not only to alleged anticipations *claimed* in previous specifications, but also to those that are merely *described*. The second difference is that at this stage of the proceedings the Comptroller has no jurisdiction to refuse the application, the statute giving power only to require amendments by way of references to earlier specifications to be inserted, whereas in the case of opposition he has power to refuse the application on its being shown that it has been anticipated by an earlier invention that is *claimed* in the earlier specification (*post*, p. 127); the power to require a reference arises from such power of rejection and affords an alternative course (see *post*, pp. 133, 135).

Acceptance.

When a complete specification is finally accepted, it is advertised in the Official Journal, and is open to the public for inspection (except as mentioned below) at the Patent Office on payment of the prescribed fee.[1]

The effect of acceptance is to give the applicant the like privileges and rights as if his patent had been sealed on the date of the complete specification, but he cannot institute any proceeding for infringement until the patent be actually sealed.[2]

Inventions relating to War.

The inventor (his executors, administrators, or assigns) of any improvement in instruments or munitions of war, may assign all benefit in any patent obtained or to be obtained for the same to the Secretary of State for the War Department. Covenants in such assignment for keeping the invention secret may be enforced against the inventor or assignor by the Secretary of State. The Secretary of State may require that the specification, and all other like documents, shall be kept secret. The difference between such specifications and others lies in the fact that they are not "published" so as to become anticipations of later inventors. But the later inventors, not being the *first* inventors, cannot obtain valid patents for the inventions comprised in the earlier secret specifications (*ante*, p. 49). See sect. 44 of the Act of 1883, *post*, p. 500.

[1] Sect. 10 of the Act of 1883, *post*, p. 488. Rules 11, 12, *post*, p. 528.
[2] Sect. 15 of the Act of 1883, *post*, p. 490.

CHAPTER VIII.

OPPOSITION TO GRANTS AND APPEALS.

Grounds of Opposition—Evidence generally, p. 120.—First Ground of Opposition and *Locus Standi*, p. 122—Joint Grants, p. 125—Importers—Second Ground of Opposition, p. 126—Sufficiency of Opponent's Interest, p. 128—Nature of Cases, p. 131—Power to require Amendments, p. 135—Insertion of Disclaimers, p. 138—Considerations affecting Disclaimers, p. 142—Exceptional Cases, p. 146—Evidence, p. 148—The Act of 1902, p. 151—Third Ground of Opposition, p. 152—Appeal to the Law Officers, p. 155—Evidence, p. 156—Sealing of the Patent, p. 158—Contemporaneous Applications, p. 158.

Grounds of Opposition.

IN applications made after sect. 1 of the Act of 1902 (*post*, p. 523) comes into operation, the Comptroller inquires into the question whether the applicant's claims have been anticipated by previous published complete specifications. But if the applicant choose at his own risk to persevere with his claims notwithstanding the existence of such alleged anticipations, the Comptroller and Law Officers have power to require references to be inserted (sect. 1, subsect. 9, *post*, p. 524) to give the public notice of the earlier specifications. However, there is no power to reject the application on the ground of anticipation.

Although as a general rule, and subject to the above powers, the Comptroller and Law Officers are precluded from inquiring into the question whether the applicant's patent would be valid if granted as applied for, yet in a limited number of cases they can refuse to seal a patent when opposed on grounds which involve this question of validity. The several conditions or state of facts which constitute a ground for refusal to seal are such that, if proved in a petition for revocation, would involve the invalidity of the patent.

It has already been pointed out that one of the broad principles

underlying the question of validity is that a patent cannot be valid if it have the effect of preventing members of the public from doing anything that they, at the date of the patent, were in the habit of doing (*ante*, pp. 19, 20). If a patent be granted which has such an effect, any one whose business or trade is thereby interfered with has two courses open to him: either (1) to present a petition for revocation, or (2) to defend an action for infringement, and so contest the validity of the patent.

The Legislature, however, has given an opportunity to such persons to oppose the grant of a patent in certain specified cases.[1] These provisions are contained in sect. 11 of the Act of 1883 as amended by sects. 3 and 4 of the Act of 1888, and are in the following terms:—

> Sect. 11 (1). Any person may at any time within two months from the date of the advertisement of the acceptance of a complete specification give notice at the Patent Office of opposition to the grant of the patent
>
> on the ground of the applicant having obtained the invention from him, or from a person of whom he is the legal representative, or
>
> on the ground that the invention has been patented in this country on an application of prior date, or
>
> on the ground [2] that the complete specification describes or claims an invention other than that described in the provisional specification, and that such other invention forms the subject of an application made by the opponent in the interval between the leaving of the provisional specification and the leaving of the complete specification,
>
> but on no other ground.

These grounds of opposition will presently be considered separately in detail.

Where notice of opposition is given under the above section the Comptroller gives notice to the applicant. Then, after hearing the applicant and opponent, and after the expiration of two months, the Comptroller decides on the case, subject to an appeal to the Law Officer.[3]

[1] The object of and reasons for the section have not yet been so decisively stated, but the trend of the latest decisions is in the direction here indicated.

[2] This ground is inserted by sect. 4 of the Act of 1888.

[3] Sect. 11 (2) of the Act of 1883, *post*, p. 489.

The proper notice must be served on Form D (*post*, p. 553), giving the grounds of opposition and signed by the opponent.[1] Where a notice was wrongfully signed by the opponent's agent in his own name, and the agent died before the hearing, the Comptroller at an adjourned hearing allowed the notice to be amended by the insertion of the opponent's name, under rule 76.[2] And where the parties were not prejudiced thereby, signing the notice at the hearing was allowed.[3] Particulars of the numbers and dates of prior specifications must be given when relied on as a ground of opposition.[4] The opponent's address must be given in the notice, which must be accompanied by an unstamped copy, to be forwarded to the applicant.[5]

Evidence generally.

Evidence in hearings before the Comptroller is given by means of statutory declarations. As there is no cross-examination of declarants the utmost good faith and lucidity must be shown; otherwise when an appeal is taken before the Law Officer costs will not be allowed.[6] If the declarations be unnecessarily numerous or prolix and an appeal be taken, the costs of such declarations will be thrown on the parties responsible for them.[7]

Except in the case where the ground of opposition is that the applicant has obtained the invention from the opponent or person of whom he is the legal representative, the declarations need not be left in connection with an opposition, but the opponent may within fourteen days after the expiration of two months from the advertisement of acceptance of the applicant's complete specification leave the statutory declarations at the Patent Office, and shall on so leaving deliver copies thereof to the applicant.[8]

When the ground of opposition is that the applicant has obtained the invention from the opponent, or the person of whom he is the legal representative, the statutory declarations containing evidence in support of the charge must be left at the Patent Office within fourteen days after the expiration of two months from the advertisement of acceptance of applicant's complete specification, or the

[1] Rule 32, *post*, p. 533.
[2] *Lake's Application*, Gr. L. O. C. 35.
[3] *Codd's Patent*, Gr. 305.
[4] Rule 35, *post*, p. 534.
[5] Rule 32, *post*, p. 533.
[6] *Anderton's Patent*, Gr. L. O. C. 25.
[7] *Brand's Patent*, 12 R. P. C. 102.
[8] Rule 35, *post*, p. 534.

opposition will be deemed to be abandoned.[1] In cases of opposition on this ground, the Comptroller may request or allow any person who has made a declaration in the matter to attend before him and make oral explanations.[2]

Fourteen days are allowed to the applicant within which to file his evidence, and another fourteen days to the opponent wherein to reply by declarations strictly confined to matters in reply; on filing each party must supply the other with copies of his declarations.[3]

If the opponent do not leave statutory declarations in support of his opposition, the applicant may, if he so desire, within three months of the advertisement of acceptance of the complete specification, leave statutory declarations in support thereof, and on so leaving shall deliver copies thereof to the opponent.[4] Within fourteen days the opponent may leave at the Patent Office declarations in answer, and the applicant within another fourteen further declarations in reply.[5]

No further evidence shall be left on either side except on the requisition, or by leave, of the Comptroller.[6] In cases where fraud is imputed, an extension of the time will not be allowed to file evidence in support of the charge after the opponent has failed on the issue of identity of the inventions.[7]

The question to be decided involves in most cases the construction of the specifications to ascertain what is the nature and extent of the invention claimed in the several specifications (see Construction of Specifications, *ante*, Ch. VI. p. 84). Hence evidence may be given by the applicant of the state of knowledge at the date of the opponent's patent (which is extremely important),[8] in order to show what his claim really is,[9] and that it is not so wide as to include the subject of the applicant's. But evidence cannot be given *merely* to show that the opponent's patent is invalid, for its invalidity does not affect the issue. It is submitted that evidence may be given to show that the earlier patent would be invalid if construed so widely as to include mechanical equivalents[10] or the applicant's invention, and so by the operation of the rule of Benevolent Construction

[1] Rule 33, *post*, p. 533. [2] Rule 34, *post*, p. 534. [3] Rule 37, *post*, p. 534.
[4] Rule 38, *post*, p. 534. [5] Rule 39, *post*, p. 534.
[6] Rule 40, *post*, p. 535. [7] *Huth's Patent*, Gr. 292.
[8] Per *Davey*, S.G., in *Jones's Patent*, Gr. L. O. C. 34.
[9] Per *Finlay*, S.G., in *Thornborough's Patent*, 13 R. P. C. 116 (30).
[10] *Smith's Application*, 13 R. P. C. 201, per *Webster*, A.G.

(*ante*, pp. 93-96) to confine the claims to the precise thing described.

In the absence of such evidence, or of mutual admissions as to the state of knowledge, the Comptroller must decide on the specifications alone.[1]

The question as to what parties are entitled to be heard in opposition to the grant depends on the grounds of opposition. These grounds will now be considered separately.

First Ground of Opposition—Locus standi.

I. **That the applicant has obtained the invention from the opponent, or from a person of whom he is the legal representative.**

A patent will be invalid if granted to one who is not the "true and first inventor" or importer of the invention in question (see *ante*, pp. 48, 49). But the Comptroller and Law Officers are precluded from refusing to grant on that ground, except in the special case here mentioned. It is not at all clear as to what interest the opponent must have in the invention obtained from him. In *Thwaites's Application*,[2] *Webster*, A.G., did not go into the question whether the opponent was legally entitled to a patent for the invention; the application was refused on the ground that the applicant was not (as regards the opposed claims) the inventor, but obtained the invention indirectly from the opponent through his servant. On the other hand, *Smith*, L.J., in *The Queen* v. *Comptroller-General* (ex p. *Tomlinson*),[3] held that the words of the section clearly pointed "to a person having an interest in the patent, because he says he has been defrauded of his patent, and that the patent had been taken from him or filched from him, and therefore of course he has an interest in the patent. . . . It is quite clear that 'any person' in this section would be any person who has had his invention taken from him; that means a person who has an interest." As the Attorney-General in *Thwaites's Application* did not express any opinion to the effect that the opponent was *not* the inventor, and, as the later decision rested also on another ground, the question as to the opponent's interest is not finally decided. If he be not the inventor, or, although the inventor, have given his invention to the

[1] *Southwell and Head's Application*, 16 R. P. C. 362.
[2] 9 R. P. C. 515.
[3] 16 R. P. C. 242 (45).

public, it is difficult to see what interest he has in it beyond that of a user of the invention, and why he should have a right to oppose which is not enjoyed by other users of the invention. The words "or from a person of whom he is the legal representative" have no meaning as regards a mere communication, but refer to the provisions of sect. 34 as to the grant of a patent to the personal representative of a deceased inventor; the term "legal representative" means the representative of a deceased person, and not an assignee,[1] or one holding a power of attorney.[2]

The stricter rule as to persons entitled to be heard in opposition under this head has been considerably enlarged by the decision in *Hetherington's Application*, 7 R. P. C. 419.

The applicant's alleged invention was for "improvements in apparatus for controlling the grinding of carding-engine flats." The opponents made an application thirteen days later in respect of an invention for "improvements in carding engines for carding cotton and other fibrous materials," and opposed on the ground that *Hetherington*, the applicant, had obtained his invention from them. In his specification *Hetherington* described, as part of a previous invention of his own, a certain construction of machinery which, in fact, he knew of by inspection of the opponents' machines. This alleged previous invention of *Hetherington's* was not in his prior patent, and his statement was therefore untrue. But the statement was made in order to illustrate his present improvements, and the portion so taken from opponents' and described formed no part of his claim.

The applicant contended that, as his portion was not claimed, the opponents had no *locus standi*.

The Comptroller refused to seal unless the specification were amended in accordance with the facts.

On appeal, *Clarke*, S.G., reviewed the facts, and he, in dealing with the contention as to *locus standi*, said: "It was contended that the words in Sect. 11 of the Act of 1883, 'having obtained the invention from him,' must be read as applying solely to the invention claimed in the specification to which the objection is made. Even if this construction were sound, I should not hold myself bound to permit the sealing of a patent which bore upon its face a statement untrue in fact and injurious to the interests of the person to whom a prior patent had been granted. But the function of the specification is to describe and ascertain the nature of the alleged invention, and the words in this case purport to be part of that

[1] *Spiel's Patent*, 5 R. P. C. 231. [2] See *Edmund's Patent*, Gr. 281.

> description. I am of opinion that the opponents were entitled to be heard in opposition to the grant, and I affirm the decision of the Comptroller, and order the appellant to pay five guineas costs."

As the decision of the Law Officer on the question of the right of parties to be heard is final,[1] this case must be taken to be of authority. It illustrated the necessity for enlarging the jurisdiction of the Comptroller and Law Officers as to the examination and rejection of specifications.

Evidence.

The evidence required in these cases is not a mere balance of probability. If there be a reasonable doubt the applicant will have the benefit of that doubt, so that the real issue can be decided in subsequent proceedings and in a court better adapted to that purpose. In *Stuart's Application*, 9 R. P. C. 452, *Clarke*, S.G., laid down the general rule:—

> "I think that the Law Officer is only entitled to stop the issue of a patent, having examined all the evidence given on one side or the other, if he is so clearly of opinion that the opponent has made out his case that he would, if a jury were to find in favour of the applicant, refuse to accept it, and overrule the decision on the ground that it was perverse and contrary to the obvious weight and effect of the evidence. That is the proposition I keep before my mind."

Cases on this ground of opposition turn on questions of evidence and facts. The questions involved are those of the identity of the inventions, and the taking of the opponent's invention by the applicant. The question of identity of inventions has been discussed *ante*, pp. 30–34. Where the inventions are independent, the only remedy is under the second or third grounds of opposition. Where there is a doubt as to the inventions being identical, or the one an improvement on the other, the patent is usually allowed with a disclaiming reference to the opponent's specification. This can be done, for where the circumstances justify the refusal of a patent, the sealing may be allowed on condition of amendments being made.[2] Cases of this class usually arise when a workman leaves one

[1] *The Queen* v. *Comptroller-General*, 16 R. P. C. 233.
[2] *L'Oiseau & Pierrard*, Gr. L. O. C. 39; *Marsden's Patent*, *post*, p. 135.

employer and goes to another, carrying with him the ideas of the former employer.

Illustrations.

Hoskins had been employed to make a sample of an invention of N.'s, and subsequently applied for a patent for an improved form of it. N. opposed the sealing on the grounds (1) that the invention had been taken from him, and (2) had been patented by him on an application of prior date. The Comptroller decided that the invention was not obtained from the opponent. On appeal the Law Officer, *Herschell*, S.G., said, "*Hoskins* got that cot, and he finds that there is a cot which has certain advantages. All the elements which are to be found and which are described as the essential elements of N.'s invention are to be found in what *Hoskins* has produced. Of course the parts differ, and the mode of carrying out the idea differs, but there is not a single idea to be found in the one that is not to be found in the other modified. . . . As far as he has made it better he is entitled to a patent for the improvement." The grant was allowed subject to the insertion of a clause describing the invention as an improvement on the opponent's. *Hoskins's Patent*, Gr. 291.

David and *Woodley* were applicants. *Jones* the opponent. *Jones* had invented improvements in sewing machines, he (or he and *David* conjointly) employed *Woodley* to make a model of *Jones's* invention. While so employed *Woodley* made suggestions that were adopted and included in *Jones's* patent. *David* and *Woodley* now applied for a patent for an invention consisting of the suggestions made by *Woodley*. *Held* that, under the circumstances, *Woodley's* suggestions became part of *Jones's* invention (see *ante*, p. 51), and the grant to *David* and *Woodley* was refused. *David & Woodley's Patent*, Gr. L. O. C. 26.

Joint Grants.

It is under this ground of opposition that cases frequently occur in which the parties are acting honestly, and both are given an interest in the patent or patents granted.

Illustrations.

Where the idea which was the basis of an applicant's invention was shown to have been communicated to him by the opponent, the patent was sealed to both as a joint invention. *Eadie's Patent*, Gr. 279.

In a case where the evidence was conflicting, the Comptroller decided to seal in order to afford an opportunity of cross-examination

before the Law Officer. It was a joint application of *E.* (inventor) and *O.* (capitalist). The parties admitted the inventions were identical. *Webster*, A.G., decided to allow the sealing on the condition that *E.* and the opponent each assigned a half-share to the other. As *O.* was a necessary party, and could not be found, the opponent's only was sealed on the condition that a half-share was assigned to *E.*, and each to pay half the costs of maintaining the patent. *Evans's & Otway's Patent*, Gr. 279.

Garthwaite applied for a patent. Five weeks afterwards *K.* applied for a patent for the same invention. *G.* obtained part of his invention from *K.* *K.'s* was alleged to have an improvement not in *G.'s*. Separate patents granted upon each assigning half-share to the other. *Garthwaite's Patent*, Gr. 284.

In a case where the opponent relied on this ground, and the evidence was very conflicting, after cross-examination before the Law Officer it was found that a part only of the applicant's invention was taken from the opponent, and it was ordered that the applicant should take out his patent and give half of all his rights thereunder to the opponent, who should undertake not to petition for revocation. On this agreement being filed the grant was to be made, and each party to pay their own costs. If the applicant refused, he was to pay all costs and have no grant; if the opponent refused, the grant was to be made and opponent to pay all costs. *Luke's Patent*, Gr. 294.

Importers.

As the importer of an invention into the realm is in law an inventor (*ante*, pp. 1, 48, 49), it is immaterial whether the person abroad from whom he obtained the invention got it from the opponent by fraud or not,[1] or if fraud be alleged against the applicant himself who is an importer, there is no power on the part of the Comptroller or Law Officer to inquire into what took place abroad between the parties.[2]

The Second Ground of Opposition.

II. **That the invention has been patented in this country on an application of prior date.**

It has already been pointed out that a patent will be invalid if it claim any invention that has already been published (*ante*, p. 19) or

[1] *Edmunds's Patent*, Gr. 281; followed by *Spiel's Patent*, 5 R. P. C. 281; *Bairstow's Patent*, 5 R. P. C. 288; *Lake's Patent*, 5 R. P. C. 415.

[2] *Higgins's Patent*, 9 R. P. C. 74.