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ENGLISH PATENT PRACTICE.

WITH

ACTS, RULES, FORMS, AND PRECEDENTS.

BY

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PREFACE.

THE Law of Patents depends upon the prerogative of the Crown as protector of trade to grant monopolies for the use of new inventions, but has been modified and restricted by statute. From this two main principles follow, from which have been derived most of the rules of Patent Law. In the first place the Crown acts for the encouragement, not of science or of meritorious discoverers, but of trade; and hence the novelty and utility demanded of a patent must be trade novelty and trade utility, and not merely scientific excellence or importance. It is for this reason that the commercial success or failure of an invention plays so important a part in determining the validity of a patent for it, and a short chapter has been devoted to this subject.

In the next place, since a patent exists only by virtue of a royal grant, it must be interpreted according to the rules which govern the interpretation of grants by the Crown, which stand on a very different footing from grants between subjects. It is for this reason that failure in any part of a patent avoids the whole, and that, although in the construction of a patent the natural meaning of words is adopted, yet the grant is construed more strictly against the grantee than in cases of ordinary grants.

In order to compress the subject into the compass of a moderate-sized book, and yet to insert all the useful cases, it has been necessary to condense the style, to avoid repetition, and to make a liberal use of cross-references.

For convenience of reference, the various rules of law have been arranged so far as is practicable in a series of propositions or sectional headings distinguished by thicker type. In the table of cases the dates are given, and also the subject-matter of the patent. The new circular of information issued by the Board of Trade has also been inserted. The index, it is believed, will be found sufficiently exhaustive.

This book is mainly intended for professional men. Those unaccustomed to drawing patents will, if their inventions are of any real value, find it greatly to their interest to have their patents well drawn from the beginning by some competent adviser. It is quite as difficult, and even much more difficult, to draw a good specification, as it is to draw a will or conveyance of property, and bad drafting inevitably leads to expense, if not to a total loss of the patent. On the other hand, an inventor, even when he has secured competent professional assistance, should not neglect to peruse carefully the whole draft, so as to see that his ideas have been well interpreted, and nothing omitted.

There is a tendency on the part of inventors to make application before their inventions are really ripe. This arises from the very natural fear of anticipation, or of their secrets being discovered by others. There is some foun ation for this fear, for an examination of the patents taken out in various years will shew the extraordinary tendency of the human mind to run in grooves. One year will abound in inventions for electric lamps, the next will perhaps be notable for refrigerating apparatus; then will come a tide of new proposals for pencils and pens, and in the next few years a remarkable crop of patents for paraffin lamps.

Most extraordinary instances have come within the author's knowledge of inventions which were certainly made independently, and yet which corresponded even in minute details.

Therefore, when an inventor is working on a subject that happens to be in fashion, he should be rapid. Where, however, he is at work on some new or neglected branch of invention, he can afford to be slow, and in this latter case the advantage to his patent will be very great.

Before developing his idea, it is in general better not to consult what has been previously done, for this often tends to divert the mind and to destroy originality; but once the idea is well developed and clear, the inventor should make himself master of the principal prior patents connected with it. He is certain in this way to find something to avoid, and almost as certain to find something which he may carefully adopt in combination with parts of his own proposals.

In almost every case it is wise to have working-models made, for small unexpected defects often delay and even defeat the most ingenious inventions.

Before having these models made he should carefully plan them out in detail. The author has seen very large sums of money wasted which might have been saved if more care had been devoted, before the models were made, to the development and perfection of details. Machinery design almost always proceeds from the complex to the simple; one can hardly take up a patent without seeing a lever which might have been suppressed, or a part which might have been simplified with advantage. Care should be taken to see not merely that the design is theoretically correct, but that it is one that can be carried out cheaply and successfully. It is a great mistake in general to order finished models at once; the first working models should be utterly devoid of ornamentation, or of any finish whatever, except in the working parts, for only in the very simplest cases is it possible to avoid the necessity of more than one model. On the other hand, when preparing a model to exhibit to commercial men, it is well to have it properly

finished and good-looking, for it takes a good mechanician to recognise the value of a model in the rough.

It is above all needful before starting to work out an invention to see that sufficient funds are available to complete it. In all the stages of application for a patent those who can afford it will do well to consult a patent agent. The services these gentlemen can render are usually worth to the inventor far more than the cost of obtaining them. Unfortunately, owing to the present state of the law, a body of ignorant pretenders has sprung up, who pass themselves off as patent agents without having been regularly placed on the roll, and are therefore not under any control nor have passed any examinations. They thus possess no credentials of character or competency. Inventors are recommended to see that the patent agents they employ are duly on the roll of patent agents, a printed list of whom can be obtained at the Patent Office.

Lastly, inventors may be reminded that it is not enough to make a clever invention; when the invention has been perfected, the hardest part of all comes, namely, to cause it to be adopted and worked to the advantage of the inventor. The words of Sir Hugh Platt in 1589 are as true now as they were when he wrote them: "I have always found it in mine own experience an easier matter to devise manie and profitable inventions, than to dispose of one of them to the good of the author."

I have to thank Mr. Lloyd Wise, President of the Chartered Institute of Patent Agents, for many valuable suggestions, too numerous to specify in detail.

H. CUNYNGHAME.

2 Paper Buildings, Temple,
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ABBREVIATIONS.

A. & E.	Adolphus and Ellis' Reports.
B. & Ad.	Barnewall and Adolphus' Reports.
B. & A.	Barnewall and Alderson's Reports.
B. & C.	Barnewall and Cresswell's Reports.
Beav.	Beavan's Reports.
B. & S.	Best and Smith's Reports.
Bing. N. C.	Bingham's New Cases.
B. & P. N. R.	Bosanquet and Puller's New Reports.
Brod. & Bing.	Broderip and Bingham's Reports.
Bull. N. P.	Buller's Nisi Prius.
C. P. C.	Carpmael's Patent Cases.
Camp.	Campbell's Reports.
Co. Rep.	Coke's Reports.
C. B.	Common Bench Reports.
C. B. N. S.	Common Bench Reports, New Series.
Car. & K.	Carrington and Kirwan's Reports.
Car. & P.	Carrington and Payne's Reports.
C. L. R.	Common Law Reports.
Cl. & F.	Clark and Finnelly's Reports.
Coop.	Cooper's Chancery Cases.
Cr. M. & R.	Crompton, Meeson, and Roscoe's Reports.
Ct. Sess.	Court of Session Reports. (Scotland).
D. P. C.	Davies' Patent Cases.
De G. F. & J.	De Gex, Fisher, and Jones' Reports.
De G. & J.	De Gex and Jones' Reports.
De G. M. & G.	De Gex, Macnaghten, and Gordon's Reports.
De G. J. & S.	De Gex, Jones, and Smith's Reports.
Dowl. & Ry.	Dowling and Ryland's Reports.
Dr. & S.	Drewry and Smale's Reports.

E. & B.	Ellis and Blackburn's Reports.
E. B. & E.	Ellis, Blackburn, and Ellis' Reports.
E. & E.	Ellis and Ellis' Reports.
Eq. Rep.	Equity Reports.
Ex.	Exchequer Reports.
F. & F.	Foster and Finlason's Reports.
Giff.	Giffard's Reports.
Good. P. C.	Goodeve's Practice Cases, 1853.
Griff. P. C.	Griffin's Patent Cases.
Griff. App.	Griffin's Appendix of Cases.
G. P. C.	Goodeve's Patent Cases.
H. Bl.	H. Blackstone's Reports.
H. & M.	Hemming and Miller's Reports.
H. L. Cas.	House of Lords Cases.
Holt N. P.	Holt's Nisi Prius Cases.
H. & N.	Hurlstone and Norman's Exchequer Reports.
Ir. Ch. Rep.	Irish Chancery Reports.
John.	Johnson's Reports.
J. & H.	Johnson and Hemming's Reports.
Jur. N. S.	Jurist, New Series.
Jur.	Jurist, Old Series, vols. 1–18, 1837–1854.
K. & J.	Kay and Johnson's Reports.
L. J.	Law Journal Reports, New Series.
L. R. App. Cas.	Law Reports, Appeal Cases.
L. R. Ch.	" Chancery Appeals.
L. R. Ch. D.	" Chancery Division.
L. R. C. P.	" Common Pleas Cases.
L. R. E. & I. App.	" English and Irish Appeal Cases.
L. R. Eq.	" Equity Cases.
L. R. Ex.	" Exchequer Cases.
L. R. H. L.	" House of Lords.
L. R. P. C.	" Privy Council Cases.
L. R. Q. B. D.	" Queen's Bench Division.
L. T.	Law Times, Old Series, vols. 1–34, 1831–1858.
L. T. N. S.	Law Times, New Series.
Lond. Jour.	London Journal of Patents.
Lawson.	Lawson's Patents Acts, 1852.

M. & G.	Manning and Granger's Reports.
M. & W.	Meeson and Welsby's Reports.
Mac. & G.	Macnaghten and Gordon's Reports.
M. P. C.	Macrory's Patent Cases.
Marsh.	Marshall's Reports.
Mer.	Merivale's Reports.
Moo. P. C. N. S.	Moore's Reports of Cases in the Privy Council, New Series.
Moo. P. C.	Moore's Reports of Cases in the Privy Council, Old Series.
My. & Cr.	Mylne and Craig's Reports.
N. R.	The New Reports from 1863, onwards.
Newt. L. J. C. S.	Newton's London Journal of Arts and Sciences, Conjointed Series.
Newt. L. J. N. S.	Newton's London Journal of Arts and Sciences, New Series.
Parl. Rep.	Parliamentary Reports.
Q. B.	Queen's Bench Reports.
R. P. C.	Reports of Patent Cases (official).
Russ.	Russell's Reports.
Russ. & M.	Russell and Mylne's Reports.
Ry. & M.	Ryan and Moody's Reports.
Scott N. R.	Scott's New Reports.
Scot. L. R.	Scottish Law Reporter.
Stark. R.	Starkie's Reports.
Taunt.	Taunton's Reports.
T. R.	Term Reports.
Times R.	Times Reports.
Tyr.	Tyrwhitt's Reports.
Ves.	Vesey's Reports.
W. N.	Weekly Notes.
W. P. C.	Webster's Patent Cases.
W. R.	The Weekly Reporter.
Y. & C.	Younge and Collyer's Reports.

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ENGLISH PATENT PRACTICE.

INTRODUCTION.

PRINCIPLES, ORIGIN, AND GENERAL FEATURES OF THE LAW OF LETTERS PATENT.

INTRODUCTION. SECT. 1.

The nature of an invention. There is no property in inventions at Common Law

1. The nature of an invention. There is no property in inventions at common law.—There can be no doubt that the development of civilisation in all ages has been chiefly due to the progress of the arts, and the increase of wealth in Great Britain during the present century has mainly depended upon the ingenuity of British inventors.

But the history of industry in England proves that it is almost impossible for a patentee to reap the reward of his labour, without financial help and legal assistance.

The poor inventor, pressed by lack of means, with an ill-drawn patent and a want of business capacity, too often sees his invention pirated, and even his claim to the credit of it disputed, until, like Cort, the founder of the iron industry in England, he is reduced to a pauper's grave.

By an invention, in ordinary language, we mean the result of the exercise of the imaginative or constructive faculty. Thus, we speak of the "inventions" of a poet,

Invention.

The definition of an invention.

a painter, a chemist, or an engineer. As used in patent law, the word "invention" has a slightly different meaning; it is somewhat wider in one direction, and somewhat narrower in another. For in patent law the word inventor also includes the "importer" of an invention, and on the other hand, since the granting of patents is restricted to inventions of new manufactures, authors, poets, and painters must look elsewhere than to patent law for protection for creations of their genius.

An invention is sometimes spoken of as the property of the inventor, as though he had a right to that which he has created; this, however, is an error. It is true that the author of a book is considered in law as having a property in the copyright of it, by reason of his labour in producing it. This is sometimes treated as a sort of title by occupancy, and has been regulated, and in some respects curtailed, by statute. But though an analogous property might logically be deemed to exist in an invention, yet such property has never been recognised by our law, and the only way in which an inventor can obtain any special benefit from his invention, is by virtue of the Royal prerogative exercised in his favour for the advantage of trade.

The granting of a patent is not a matter of right, but is at the pleasure of the Crown. It is in the highest degree unlikely that the Crown would refuse a patent or would restrict the number of years for which it was granted, but it is necessary to remember that no Act of Parliament compels the Sovereign to grant patents, and it would be quite possible for the King, with the advice of the Ministry of the day, supported by public opinion, to withhold any patent, or impose new conditions on the

patentee, providing always that the provisions of the Patent Acts were not violated.

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The nature of an invention. There is no property in inventions at Common Law.

Thus, for instance, the Crown might refuse to grant a patent altogether, but if it were granted, no higher fee could be taken than that specified in the Acts of Parliament. Therefore, a patentee's claim is not like a man's property in a copyright, it is a matter of grace and favour, only extended to him on account of the public advantage which will be derived from his invention. This right to withhold a patent has been especially saved by sect. 116 of the Patent Act of 1883.

2. The origin of the law of patents.—Before commencing a detailed exposition of the patent law as it at present exists, it may be useful first to examine its origin, and then to summarise briefly its salient features, so as to give a bird's-eye view of the subject as a whole, and render more easy the consideration of the various parts, and their co-relation to one another.

Origin of the power of the Crown to grant monopolies.

In the first place it is necessary to observe that, according to the Law of England, the King has been invested from time immemorial with certain peculiar powers, called his prerogatives. Thus, for example, he is the fountain of honours; he alone has the right of making peace and declaring war, and of sending embassies to foreign states. All judicial acts are in theory done in his name, and he is also the guardian of trade and commerce (see Amos' Notes to Fortescue; Staundford on the Prerogative; Allen's 'Rise and Growth of the Prerogative in England').

But it is not to be understood that the King can exercise his prerogative in the above matters simply at his own pleasure, and in an unlimited way. In a monarchy such as that of Great Britain, the King can

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The origin of the law of patents.

only use his powers according to precedent, that is to say, in the way and to the extent to which they have been anciently exercised (Blackstone's Commentaries, vol. i. p. 238). It is the express duty of the Courts of Justice to moderate and regulate the prerogative so that it shall be used in a manner conformable to the law of the land. Again, this prerogative is not entrusted to the King merely as a source of revenue or profit. It is a trust, to be exercised only for the good of the Commonwealth (*per* Lord Kenyon, 4 T. R. 410; see also 3 Atk. 171).

There is yet another safeguard which has gradually grown up against the abuse of the Royal prerogative. For whereas in theory the King can do no wrong, and in theory he may, within its due limit, use his prerogative as he pleases, yet in practice he cannot do so except by means of his principal ministers, who are responsible to Parliament and to the courts of law for the advice which they give to him.

The prerogative of the Crown is of course liable to be curtailed, or extended, or regulated by an Act of Parliament, which is the highest expression of sovereign power that the State possesses.

It is, however, a principle of the interpretation of statutes, that the prerogative cannot be curtailed by implication, but only by express enactment. For no Act of Parliament binds the Crown, unless it is either expressly provided that the Crown shall be bound, or unless it appears from the statute that the curtailment of the prerogative was clearly intended.

One of the prerogatives of the King, which appears to be very ancient, is the privilege of protecting and regulating both external and internal commerce.

The origin of the law of patents.

In these days no interference with industry takes place except by virtue of the advice of both Houses of Parliament, expressed in a statute. But in earlier times it was by no means unusual for the King to exercise his prerogative for what was considered the benefit of trade, even in cases where no Act of Parliament had dealt with the subject. Thus, for instance, the King always claimed the right to grant and regulate markets and fairs, and to select the most convenient places and times for the holding of them. Again, the King has always possessed the prerogative of fixing the amount and character of the coinage, and probably originally also of weights and measures.

But it is to be remarked that in all these cases, as stated above, the acts of the King must be done according to ancient custom: they must be for the benefit of trade, and they are always liable to be controlled by parliamentary enactment.

Among the methods by which the King has been accustomed to use his prerogative for the protection of trade, is the formulation of regulations as to the persons who may carry it on, and the places where they may exercise their craft. In our time the tendency has hitherto been in favour of complete freedom, so that we find it difficult to realise the condition of mind which desired and courted protection. And yet to our ancestors nothing seemed more proper than that particular industries should be restricted to particular persons or guilds, whose members had served their apprenticeship, and that foreigners should be admitted only with caution. Nay, more, even the garments which the various classes of the community should wear, the prices that should be paid for their make, and the materials of

Interference of the Crown.

The origin of the law of patents.

which they should be composed, were all considered reasonable objects of State interference. Thus, in the reign of Charles I., proclamations were issued that no more than 2s. a head should be paid for an ordinary dinner; bakers were prohibited from making into more than thirteen loaves the flour which, under the assize of bread, ought to serve for twelve; tavern keepers were forbidden to sell cooked meat, or to charge more than 2d. for the bait of a horse (A.D. 1634). Similar intervention on the part of the State may be found in the history of Venice and the other States of Italy; in France; in Spain; in the German Empire; and in fact all over Europe.

This power to regulate trade was not admitted as boundless. It was used more or less in accordance with ancient precedent, according as the power of the reigning King was weak or strong. But in theory at least, it has been always held in our law, whenever the voice of the judges was not silenced by tyranny or by corruption, that the right of regulating manufactures must be exercised primarily for the good of trade and the advantage of the subject.

The manner in which the Crown has generally used its right of controlling industry, is by the granting of monopolies for the practice of certain trades. But though the power of the King to regulate trade is unquestioned, yet the regulation of trade by means of monopolies has always been looked upon with suspicion by the Courts. Monopolies are very repugnant to the spirit of our constitution. For instance, that sort of monopoly which is produced by forestalling and regrating has ever been held to be against the law. Combinations of workmen or of employers whose object

was by means of monopoly to raise prices have been always regarded with disfavour. Nay more, so decidedly does the law lean against any restrictions on the right of every one to pursue his industry freely, that it is *ultra vires* for a man to contract not to exercise his trade, except for a limited time and within a limited area.

Increase of trade, etc. The origin of the law of patents.

But within limits the power of the Crown to grant trade monopolies was recognised long before the days of Elizabeth.

When by virtue of the Royal prerogative a privilege is granted to a subject, and thus, as it were, a portion of that prerogative is delegated to him, he is said to be possessed of a franchise. Hence all monopolies created by virtue of the prerogative are franchises.

We shall enter more fully hereafter into the nature of the industrial monopolies which the King can grant. It is sufficient here to say that, in spite of the extravagant claims of the Tudor kings, the law has only recognised monopolies, limited as to time, and granted only for new manufactures, which are useful to the public, in that they introduce into practice arts or crafts unknown before.

The mode in which a franchise can be created is also limited and restricted. For by virtue of his prerogative, the King in making grants does so in ways and with formalities peculiar to himself. He is more capable than a subject in some things, for instance he can assign a chose in action at common law where a subject could not, and debts to him are preferred to the debts due to other creditors. But he is less capable than the subject in other matters. Thus, for instance, he cannot grant a franchise except by record.

The principal mode in which the King makes a grant

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The origin of the law of patents.

by record is either by Royal Charter or also by the issue of what are termed "Letters Patent" or "open letters" sealed with the great seal, of which the Lord Chancellor is the nominal custodian, which operate so to record the grant that it is at once supposed to be matter of public notoriety, and every one is presumed to be aware of it. This is the origin of the word "patent."

Inasmuch as the foundation of all rights conferred by Letters Patent is always to be sought in the words of the grant, it becomes necessary to give a sketch of the principal characteristics of Royal Letters Patent, and of the rules recognised for their interpretation.

(1.) In the first place it is essential to the validity of a Royal grant that it should be within the law, for the King is not above the law, but subject to the law (Blackstone's Commentaries, vol. i. p. 234). Hence no Letters Patent can be valid which are repugnant either to the Common Law or to a statute. (Examples of this rule may be found in Viner's Abridgment, tit. 'Prerogative,' Y. 6, vol. xvii, fo. 192, p. 124, if any authority be needed for so obvious a proposition.)

(2.) Closely allied to the principle that the King cannot make a grant contrary to law, is the rule that he cannot make any grant to the prejudice of vested rights.

From this it follows that if he has made by patent a valid grant to one person, he cannot derogate from it by a subsequent grant of the same thing to another. In the older books many instances are to be found in which such subsequent grants have been repealed.

But the case of *Sir Oliver Butler* (1661, 3 Lev. 220), goes even further, and shews that a second grant which even interferes unfairly with the first will not be good.

From this it follows that the King when once he has granted a patent to one person or persons, cannot make a valid grant of the same subject-matter to others. In the case of Letters Patent for inventions there will in general be other reasons also why the second grant will be bad, for the publication of the invention granted by the first patent will destroy the novelty of the second. But where the patents closely follow on one another, so that the second is granted before the first is published, it may become necessary to apply the principle stated above, which cases will be more fully discussed hereafter.

Prerogative as to the grant of the law of patents.

(3.) In the next place no grant from the Crown is good unless it is certain, that is to say, unless it is so expressed, that the subjects of the King may know what it is he has granted.

This doctrine will be found laid down as to patents in general in *Lightfoot* v. *Lenet*, 1618, 2 Croke, 421, and in several cases quoted in Comyn's Digest; tit. 'Grant,' (i. 6: and in Viner's Abridgment, tit. 'Prerogative,' F. c., fo. 196, vol. xvii., p. 140; and its application to the law of patents for inventions has been approved by Heath (J.), in *Boulton* v. *Bull*, 1795, 2 H. B., p. 484.

(4.) Again, any grant which contains an expression of the King's intention in making the grant will be void, if the grant obviously contradicts the intention (1 Co. R. 46 a). From this principle it would follow, that, if the King expressed the patent to be made for the encouragement of all inventions which may be for the public good, and the grant was of a monopoly for some invention which was clearly not for the public good, on this ground alone it would be void.

(5.) The next principle is, that if a patent purport to be made upon a false consideration or suggestion

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which is in fact false, even though not made with any intention to deceive, the grant is void for deceit. This is a very old and well-known principle (see 5 Co. 94 a., and a large collection of cases in Viner's Abridgment, 'Prerogative,' M. C. fol. 109, vol. xvii., p. 151). Thus, in the case of the *Eastern Archipelago Co.* v. *Reg.*, 1853, 2 E. & B. 802, Baron Parke said:—"If the King has been deceived by a false suggestion as to what he grants, on the consideration for his grant, if he appears to have been ignorant or misinformed as to his interest in the subject-matter of his grant, if the language of his grant be so general that you cannot in reason apply it to all that might literally fall under it, or if it be couched in terms so uncertain that you cannot tell how to apply it with that precision which grants from one so specially representing the public interest ought to have, or if the grant reasonably construed would be injurious to the vested interests of the subject, or would work a wrong, or something contrary to law; in these, and such like cases, the grant would be wholly void, or restrained according to circumstances, and equally so whether the technical words, '*ex certa scienta et mero motu*' be used or not. To hold grants valid and unrestrained in such cases would be *deceptione domini regis*, and not *secundum intentionem*" (see also *Leadstains* v. *Earl of Sandwich*, 1842, 4 M. & G. 1028; *Wills' Peerage* case, 1862, L. R. 4 H. L. 126). This principle has been repeatedly applied to grants for inventions. In fact it is one of the principal pillars of patent law, and causes all patent grants whenever obtained by erroneous representations on the part of the patentee to be void: *e.g. Hills* v. *London Gaslight Co.*, 5 H. & N. 340; *Hills* v. *Thompson*, 1817, 8 Taunt. R. 375. This will be further considered hereafter.

Interpretation of grants. Rule 6. Recitals in patents.

(6.) Another rule is, that whereas recitals in a deed are put in for the express purpose of binding both grantor and grantee, so as to avoid future disputes, yet recitals in a Crown grant only bind the grantee, and the King is always at liberty to shew that any one of them is untrue. For in a Crown grant, the recitals, instead of being treated as binding the King not to dispute them, are treated either as the representations made to him, or motives of his grant, and if any one of them is false the whole grant fails. For example, it has been held that if a patent recites that a benefice is in value under £20 a year, and the value is really greater, the whole patent fails, but the grant would have been good had there been no recital at all. (*Lord Chancellor's* case, 1612, No. 273, Hob. 214.) A distinction was once made as to cases in which the recital was on suggestion of the party and others in which the recital was on suggestion of the King: 1 W. P. C. 41. The distinction was never very sharply drawn between them, but those recitals which were clearly on the suggestion of the grantee were treated most severely. In all letters patent for inventions, there is a recital that the patentee "has represented that he is in possession of an invention, that he is the true and first inventor, and that the same is not in use by any other person." And therefore since in the recital the grant is expressly declared to be made on the suggestion of the grantee, the strictest truth is required in all these representations.

(7.) Another rule is that a royal grant made upon a series of suggestions or considerations, is void if one of them fails. It is doubtful whether in a patent for an invention the part performed by the patentee can really be called the consideration. It is rather a series of

suggestions or conditions, upon the making and performing of which the patent is granted. In the case of *Feather* v. *The Queen*, 1865, 6 B. & S. 285, the question arose whether the Crown, having granted a patent for an invention, was prevented from using it, and it was sought in argument to treat the grant as a contract. But the Court negatived this view. The language therefore of *Brunton* v. *Hawkes*, 1821, 4 B. & Ald. 551; *Walton* v. *Potter*, 1841, 1 W. P. C. 585; *Cartwright* v. *Amyot*, 1800, cited 14 Ves. 130; *Gibson* v. *Brand*, 1841, 1 W. P. C. 329, in which the filing of a final specification is spoken of as the "consideration" or "price paid" for the grant, can hardly be considered verbally accurate. In any case, however, whether we treat the acts of the patentee as suggestions or considerations, it is certain that, if any one of them fails the whole patent is void. This is different from the case of grants between subjects, in which, if only a part fail, the grant will be supported, provided that the failure does not go to the whole root of the contract (see Bacon's Abridgment, 'Prerogative,' F., and Chitty on Contracts, chap. i. sec. 1). The principle was first applied to patent law in the cases of *Hill* v. *Thompson*, 1818, 8 Taunt. 401; and *Brunton* v. *Hawkes*, 1821, 4 B. & Ald. 541, as to which, see further, Chap. I. sec. 8.

(8.) Another principle applies to the mode of construing Crown grants. For whereas between subjects the rule is, that the grant shall be construed most favourably for the grantee, and against the grantor (Bacon's Abr. 'Grant,' L. 1; *Sirau* v. *Fonnereau*, 3 Ves. 41); yet where the King is the grantor, a contrary rule of construction applies, and the grant is construed most favourably for the Crown; see *Feather* v. *The Queen*, 1865, 6 B. & S. 295,

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and the judgment of Lord Stowell in *The Rebekah*, 1799, 1 Rob. 227, 230; see also Plowden's Comm. 333. Comyn's Digest, 'Grant' G. 12; Viner's Abridg. 'Prerogative,' O. c., folio 200, vol. xvii, p. 153.

Thus, if a private person were to make a grant of the "mines" under certain lands, this would carry mines of all sorts, but if the King made a grant of all the mines under certain of his lands, royal mines (*e.g.* gold and silver) would be presumed to be excepted. In the one case the word "mines" would be most favourably construed for the grantee, in the other it would be construed most unfavourably for the grantee.

It is, however, to be observed that where a good and valuable consideration accrues to the King for his grant, or where there is some public advantage from the grant, the strict rule of construction is greatly relaxed, "for the honour," as it is termed, "of the King." It is also possible by the insertion of suitable words, somewhat to mitigate the severity of this rule of construction. Accordingly, grants of patents for inventions, contain a clause that the grant "shall be construed in the most beneficial sense for the advantage of the patentee." These words give the Courts power to employ the beneficial construction, as will be explained further on, so that in so far as the interpretation of words and phrases is concerned, patents for inventions are now fairly construed, and with no strained meaning in favour of the Crown.

(9.) The last rule applicable to patents is that if for any reason a royal grant is void, it can be declared void, not only in proceedings instituted by way of *scire facias* for revocation of it (or in the case of letters patent for inventions, by a petition for revocation), but also in any suit against a third person brought by

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a grantee to enforce his patent rights. This will appear from *Tyrrell* v. *Carteret*, 1683, 3 Levinz. 134; and *Alcock* v. *Cooke*, 1820, 5 Bing. 340. In the latter of these cases the plaintiff, under colour of a grant from the King, brought an action of trespass for taking wreck. It appeared that the grant was void, owing to a prior lease to a third person which was not recited in the grant. The defendant was allowed to take advantage of this defect, and the plaintiff's action was defeated. It thus appears that when the grantee of letters patent for an invention brings an action on his patent, the defendant is at liberty to shew in any way that he can that the patent is invalid.

Attempts have been made to mitigate the rigour of the above rules applicable to royal grants by reciting that the King made his grant *ex mero motu*, *speciali gratia et certa scientia*. These words are still contained in letters patent for inventions, but a critical examination of them will shew that they are not of much advantage to the patentee.

The words *ex speciali gratia* have the effect of reciting that the grantee has no common law right to his patent, but only receives it as a matter of grace.

The words *ex mero motu*, if they had any effect, would mean that no consideration was given for the grant, and that it was made on the motion of the King. If this could be upheld, then any want of consideration or misrecital, or error of suggestion, might of course become less fatal.

But such an interpretation of the grant is not admissible, because it would contradict the recitals. For the recital expressly says that "the inventor hath humbly prayed" for the grant. Whence it follows that the

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grant is not made *ex mero motu*, but on the suggestion and prayer of the grantee. Therefore, in accordance with the decision in *Needler* v. *The Bishop of Winchester*, 1615, Hob. 221, the words *ex mero motu* will be treated as *clausula clericorum*, a mere clerical flourish, and have but little weight.

The words *ex certa scientia* are intended to relieve the grantee from the consequences of a false recital. For it was thought at one time, the recital that the King knew of certain knowledge that a man was possessed of an invention, might save the patent even if that knowledge was false in fact. But there is no force in this contention; no estoppels bind the King; and whether a recital is put in stating that "a thing is so," or "that the King knows it to be so," any person is equally at liberty either to show that the recital is false in fact, or else that the recital "that he knows it" is untrue. For the King cannot be presumed to know an untruth. In cases of mere mistake in some unimportant part, the words still have an effect, and hence are useful as may be seen by consulting the old cases in Viner's Abridgment, 'Prerogative,' E. c. 3, fo. 196, vol. xvii, p. 176.

We thus see, (1) that an inventor has at common law no property in his invention, and can only obtain a monopoly for the use of it by virtue of a grant of letters patent by the Crown; (2) that this grant is a voluntary exercise of the royal prerogative; (3) that it can only be made for the encouragement of trade, and the good of commerce; (4) that the power of granting letters patent at common law was always restricted to new and useful manufactures, and limited in point of time (see Coke's Institutes, 84), and (5) that the letters patent when granted are subjected to special principles and rules of construction

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very favourable to the Crown, and unfavourable to the grantee; rules quite different from those which are usually applied to the interpretation of contracts between subject and subject.

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Although our ancient law undoubtedly contains indications that the power of the King to grant monopolies by letters patent was limited, yet such limitation was for many centuries very ill-defined, and, as may be supposed, gave rise to constant struggles between the people and the Crown. And many Acts of Parliament were passed in consequence: *e.g.* Mag. c. c. 9 Ed. III. st. 1, c. 1; Stat. of Cloths, 25 Ed. III. c. 2; Statatum de Stapulis, 27 Ed. III. stat. 2; 28 Ed. III. c. 13, s. 3; 31 Ed. III. c. 10; 2 Rich. II. st. 1, c. 1; 7 Hen. VII. c. 9; 12 Hen. VII. c. 6; 2 W. & M. st. 2, c. 9.

Grants of patents in the reign of Q. Elizabeth.

For the Tudor sovereigns, and notably Queen Elizabeth, had made claims to regulate trade and grant monopolies far in excess of what the Commons were disposed to allow. Accordingly, in our law books we find very divergent opinions upon the subject, ranging from the extravagant claims of some of the Crown lawyers to the moderate views of Sir Edward Coke, whose career afterwards suffered from the freedom with which his views were expressed and supported. It would be beyond the range of our present object to investigate this matter further, but those who desire to trace the history of the claims and power of the Crown to grant monopolies may consult Chitty's Prerogative of the Crown, chap. x.; 3 Coke's Institutes, chap. lxxxv., and Bacon and Petersdorf's and Viner's Abridgments, tits. 'Prerogative' and 'Monopoly.'

From these and other authorities, the truth seems to be that the Crown had in the days of Queen Elizabeth a

limited and modified right to grant monopolies, but not in restraint of already existing trades, nor unless it could be shewn or inferred that such monopoly was for the public advantage.

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In Noy's Report of *Darcy* v. *Allin*, p. 182, it is stated that in the year 1567 there was a patent granted to Mr. Hastings of the Court, that in consideration that he brought in the skill of making of frisadoes, as they were made in Harlem and Amsterdam beyond the seas, being not used in England; that, therefore, he should have the sole trade of the making and selling thereof for divers years; charging all other subjects not to make any frisadoes in England during that time, under a penalty of £100. The patentee having filed a bill in the Exchequer against certain clothiers of Coxall, for making frisadoes contrary to the intent of the patent, it appeared, upon the examination of the cause, that the same clothiers did make baies very like to Mr. Hastings' frisadoes, and that they used them before Mr. Hastings' patent, for which cause they were neither punished nor restrained from making their baies like to his frisadoes. And from *Bircot's* Case (A.D. 1568), it would seem that the manufacture in respect of which the patent was granted must have been a new one: 1 W. P. C. 31, and Year Book, 15 El. 4, Easter Term; see also 3 Shepherd's Abridgment, 'Prerogative,' p. 57.

In the year 1602 the Case of *Darcy* v. *Allin*, reported in Coke's Reports, Part xi., fo. 84, gave rise to an investigation of the Crown power of granting monopolies. Queen Elizabeth had granted to Edward Darcy, a groom of the Privy Chamber, the sole license to make playing-cards for twelve years after 1600, at a yearly rent of 100 marks. Darcy brought an action against T. Allin, a

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haberdasher, for infringing his patent. In the argument it was admitted by the plaintiff that the Crown could not restrain the practice of a trade or manufacture of useful things, but contended that in matters of recreation it had this power. The Court in their judgment were against the Patent, and in the course of it the following dictum was delivered, which has usually been regarded as an accurate exposition of the law upon the subject. The passage is not to be found in Coke's Report, but is given in Noy's Report of the same trial: "Now therefore, I will shew you how the judges have heretofore allowed of monopoly patents, which is, that where a man by his own charge or industry, or of his own wit or invention, doth bring any new trade into the realm, that in such cases the King might grant him a monopoly patent for some reasonable time until the subjects may learn the same in consideration of the good that he doth by his invention to the commonwealth, otherwise not": Noy, 1; 781 W. P. C. 6. Similar words were used by Sir F. Bacon in his speech on Monopolies: 1 Parl. Hist. 926. In Webster's Patent Cases a number of examples of early patents are given, and of the arbitrary way in which they were frequently revoked.

Although Sir E. Coke argued the case of *Darcy* v. *Allin* for the plaintiff, yet in his report (published long afterwards) he calls it an "odious monopoly." And in 1604 he became chairman of a committee of grievances of the House of Commons for suppressing illegal monopolies.

In 1610, King James I. published a book, entitled "A Declaration of His Majesty's Pleasure," wherein he expressly declared that grants of monopolies of existing industries were illegal, and that he would grant no more.

For a time this promise was kept, and those which

were granted, *e.g.* one for the importation of whalebone (see Proclamations of James I., Sept. 11, 1614) were expressed to be for new industries.

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In the *Clothworkers of Ipswich* Case, 1615, it is said: "If a man hath brought in a new invention, and a new trade within the kingdom in peril of his life, and consumption of his estate, or stock, &c., or if a man hath made a new discovery of any thing: in such cases the King, of his grace and favour, in recompense of his costs and travail, may grant by charter unto him, that he only shall use such a trade or trafique for a certain time, because at first the people of the kingdom are ignorant, and have not the knowledge or skill to use it: but when that patent is expired, the King cannot make a new grant thereof. For when the trade is become common, and others have been bound apprentices in the same trade, there is no reason that such should be forbidden to use it": Godbolt, 252.

But gradually the old abuses revived, and patents were granted for all kinds of old manufactures, until the case of Sir Giles Mompesson, which resulted in the Statute of Monopolies, 21 James I. c. 3 (A.D. 1624).

The Statute of Monopolies, 1624.

By the Statute of Monopolies it was provided, in the year 1624, that in future the grant of monopolies should be restricted to "the term of fourteen years . . . of the sole working or making of any manner of new manufactures within the realm, to the true and first inventor and inventors of such manufactures which others at the time of making such letters patent and grant shall not use, so as also they be not contrary to the law, nor mischievous to the State by raising prices of commodities at home or hurt of trade or generally inconvenient": 21 Jac. I. c. 3, s. 6, (46 & 47 Vict. c. 57, s. 46.)

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It follows, from the above remarks, that the power of granting patents is not derived from statute, but is by the common law. "This Act," says Lord Coke (3 Inst., 184), "maketh patents no better than they should have been if the Act had not been passed."

Patents to be interpreted according to the principles regulating Crown grants.

Hence, then, all the principles as to the interpretation of royal grants, will still govern the interpretation of patents.

It is necessary to bear this in mind, because it explains how it is that the recitals in a patent do not bind the King, and how, in case any one of them is false, instead of the grantor being bound, as would be the case in an ordinary grant, the whole patent becomes void. Between private persons, even if the recital of a past consideration in a deed were false, the deed would stand (in the absence of fraud). But, as has been already explained, in the case of the King this is not so; therefore, if an invention be old or not useful, the patent for it will fail as against the King and the public, and yet a deed of sale or license of that very patent to another person for a sum of money would be good.

A curious question might perhaps be raised where the monopoly is granted not by a patent, but by an Act of Parliament, for it might be argued that in that case, the King having the advice of Parliament in the making of the grant, the grant must be construed in the ordinary way. The point was raised but not determined in *Boulton* v. *Bull*, 1795, 2 H. Bl., p. 500, and is not likely to arise again.

(3.) General view of the present law.—The law which governs the nature of the invention for which a patent may be granted is still the 6th section of the Statute of James I. c. 3, which limits the power of the

post, p. 435.

Crown to the granting of monopolies for the sole working or making of any manner of new manufacture to the first and true inventors, provided that they be not contrary to law or mischievous to the State by raising prices of commodities at home, or to the hurt of trade, or generally inconvenient. The period was to be for fourteen years only from the date of the grant, and the patents were to have only such force as they would have had if the Act had not been made.

It is to be observed that the publication of the invention by the patentee, was not originally insisted on, nor was it any part of the terms or conditions upon which the grant of letters patent was founded. The object of the framers of the Statute of Monopolies seems rather to have been the introduction of new mysteries or manufactures into England, than the publication of the methods of working them, for no provision for publication is contained in that statute. It is true that a few years before the Act was passed, namely, in 1611, a very curious patent for working metals granted to Sturtenant, expresses the grant to be made upon condition that the patentee should publish his invention. He complied with this by printing a work called 'Metallica,' which is the first specimen extant of anything in the nature of a specification, and is a curious jumble of poetry, philosophy and Scripture quotations, but contains very little to disclose the nature of the art which it professes to describe. This example was not imitated, and although in a few cases conditions were made for the inspection of the machines, or for the deposit of models of them in the Tower, yet it was not till the reign of Queen Anne that the law officers of that day made a regular practice of inserting into the grant a condition

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that the patentee should describe how to perform his invention. It is, therefore, quite an error to suppose that originally the making public the means of performing an invention was any part of the consideration for the grant of it. The true consideration upon which it was founded was the creation, or planting on English soil, of some trade which was previously not in use within the realm, and the greatest publicity expected, was that which would arise from the training of a number of apprentices and artificers in the practice of it.

For many years the Statute of Monopolies continued to regulate the granting of patents, but it was amended in 1835 (5 & 9 Will. IV. c. 83); 1839: (2 & 3 Vict. c. 67.); and again remodelled in 1852: (15 & 16 Vict. c. 83). Finally, in 1883, the whole question was taken up anew and a fresh Act passed which, with some successive amending Acts, is still in force. The policy of this last statute was chiefly directed to the lowering of the fees, an advantage which was counter-balanced by the prohibition to put more than one invention into a patent. All these Acts, however, like the Statute of Monopolies did, no more than regulate and limit the exercise of the royal prerogative, which is still the source from which the power of the Crown to grant letters patent is derived. It is probable that in using the word manufacture in the Statute of Monopolies, the framers of that Act intended some complete trade or branch of trade. But as inventions multiplied, it became so impossible to distinguish an improvement in an old trade, from a substantially new trade, that ultimately all improvements and new processes were treated as new manufactures. It is clear that in order to make an invention capable of being the subject of a valid patent, the invention must be for a

manufacture, not merely for a principle, nor an abstract method. It must in some way result or aid in the production of an article capable of being dealt with in the way of trade. Inventions are generally classified under the heads of new machines, processes of manufacture, and articles, and there is a further and co-ordinate division of them into new products, improvements and combinations. These all shade into one another so that it is often difficult to say to what class an invention belongs. It is sometimes important to determine this, especially in the case of "combinations," and the subject will be more fully dealt with hereafter. Patents can only be granted for "inventions," that is to say, for some advance on what was previously known, and not merely a change so obvious that any one could have made it. It will not therefore be sufficient for an inventor to suggest a mere substitute for some part of a well known machine and call it an invention. But the amount of the invention may be slight. Thus suppose some one suggested the mere substitution of a pivot (which is well-known) for a hinge in a door. This would be no invention, it would be the substitution of an obvious mechanical equivalent. But great stress must be laid on the word obvious, for suppose the substitution of the pivot had some advantage which it required invention and ingenuity to find out, then, if it were new, it is quite possible that a patent for it might be sustained. Each case must stand on its own merits, and often each case depends on the frame of mind of the Judge or arbitrator who decides it. What one man will think most ingenious another will consider obvious. And there is as great danger of under-valuing the ingenuity as of over-appreciating it.

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Again the invention must be useful, that is to say, disclose a new and good way of doing a thing. It need not perhaps be absolutely better than anything that has gone before, but its utility must be such that there is a reasonable prospect of its being useful to somebody or in some circumstances. Thus if a man invented a new way for making sulphuric acid, he is not bound to shew that it is actually cheaper, quicker or more effectual than every method now in use; what he has to shew is, that it is a successful new method. It may not be very likely to be used, still it is an addition to the common stock of public knowledge, and in this sense is useful. But if a man were to expend great ingenuity in inventing some alteration which was no improvement at all, his invention would fail to afford good subject-matter for a patent, because of want of utility. For instance, it would be possible like the tailor in Gulliver's voyage to Laputa, to invent a method of taking the height of a man with a sextant, and to desig a special machine for the purpose, but it would be of no use when made, it would be far worse than an ordinary tape measure, and unless it possessed some peculiar advantage of its own, or capability of being turned to a useful purpose, would fail to support a patent. It must however be remarked that it is not a very easy thing to upset a patent on the ground of want of utility, especially now that each patent is granted only for one invention, for the fact that the defendant has infringed it, is some evidence that it was of use to somebody.

The power of the Crown to grant monopolies is for the encouragement of *trade*, not of the polite arts and sciences. From which it follows, that though no doubt the theoretical beauty of some scientific instrument may excite

our admiration and it may be the herald of a new path in discovery, no argument is so forcible in support of a patent as to shew that commercially the article made under it has been, or is sure to be largely bought by the public, or that the trade had been desiring to discover it, but failed until the inventor shewed them how it could be done.

No one can have been present at many patent trials, without observing the vital importance of enlisting the sympathy of the Tribunal. If the Court can be made to believe that the patent was taken out by an honest and meritorious inventor, who had expended great labour, overcome great obstacles, and at length really benefited the public by a good discovery, every effort will generally be made to support the patent. Nor is such sympathy wrongly enlisted; it is the object of all good law that a truly meritorious and candid inventor should not be deprived of his invention by a mere slip or by some immaterial or technical error.

In addition to being useful and ingenious, the patent must also be new, that is to say, it must not have been anticipated. By this it is not meant that a patent will always hold unless the invention has been identically produced before. It is enough to invalidate a patent if the substance of the invention has been previously known. Any sort of prior knowledge or prior publication in Great Britain, and accessible to the public, will be sufficient. Thus if it has been published in England in any magazine, or newspaper, or book, or used in any public place, or used in an open manner in any private place so that everyone could see it, or again if it has been printed in a foreign book placed in a library accessible to the public, and in a language which is reasonably likely

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to be understood by cultivated persons; such as German, Italian, French, or Spanish, this will be an anticipation.

But all prior publications do not stand quite upon the same level. It is far stronger evidence of anticipation to produce a description intended for those engaged in industry, and so written that they can understand it, than it is to produce a learned book, in which the invention is described from a theoretical point of view. And the reason is plain. In one case the trade were, or ought to have been, in the possession of the secret, in the other, it was only known to scientists, and required some adaptation or interpretation, though perhaps only a slight one, to render it available for the trade.

Prior public user by others than the patentee may also be an anticipation, even though it hardly amounted to a regular publication. For the words of the statute are "which others at the time of making such letters patent shall not use." There is, therefore, some distinction between anticipation by a prior publication and anticipation by prior user which should be borne in mind.

Prior user which has been abandoned may also be an anticipation if clear and certain, but the fact of abandonment is itself strong evidence that the invention was not complete, or else was only in that theoretical stage which can hardly be considered useful to trade. And therefore an inventor who takes up an abandoned invention, and for the first time makes it a success, generally occupies a very favourable position in a court of law, even though an expert may think that what he has done is not very much more than to succeed where the other happened to fail.

Assuming that an intending patentee is possessed of (1) a new manufacture, (2) of which he is the first in-

ventor, that is to say, which he has either invented or imported, (3) which has ingenuity, (4) utility, (5) has not been anticipated either by prior publication or public user, (6) and a patent for which, if granted, would not be in derogation of a former grant, or as it is commonly expressed, if his subject-matter is good, it is next to be considered how he must proceed to obtain his patent.

In former times he petitioned the Crown. To save the formalities of a petition it is now sufficient to make an application in proper form, accompanied at his option either by a provisional specification describing the invention or else by a complete specification, not only describing the invention, but pointing out how it is to be performed. The considerations which should guide his choice are discussed hereafter. If he only send in a provisional specification he is bound to follow it up within nine months with a complete specification, after which he receives a patent dated as of the day of the reception of his application. Till then he cannot proceed against anyone for infringement, nor in any case recover damages for infringements prior to the date of his complete specification. The procedure is described in detail hereafter, and is very simple. But great care and art are required in the choice of his title, and in the preparation of his provisional and complete specifications. These matters are discussed farther on, but it is essentially necessary for the comprehension of the subject, that some general indication should be given of the rules of law which apply to these instruments, and the reasons upon which these general rules depend.

We have seen that it is by his prerogative that the King grants letters patent, and that this prerogative, limited as it is by the Common Law is still further

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limited and regulated by statute. But although the King may grant a patent he is not compelled to do so, hence then, conditions may be imposed by the Crown quite apart from those required by the Common or Statute Law.

The form of the grant is set out in the Patents Act of 1883, but the Board of Trade has power to alter or amend it. The present form of grant recites that the inventor has represented that he is in possession of an invention for some specified object, that he is the first and true inventor, that it is not in use by any other person to the best of his knowledge, that he has prayed for the grant, and that he has particularly described the invention in his complete specification. It then recites the intent of the Queen to encourage inventions which are for the public good. Then follows the grant, to the patentee, his agents, and licenses to make, use, exercise, and vend the invention. Then follows a prohibition to others to make use of or put in practice the invention, and conditions that if it is made to appear to "us," or the Privy Council, that the provisions of the Statute of Monopolies had not been complied with, or he does not pay the fees, or does not supply the public service with articles made according to the invention in manner provided, that the grant shall be void.

The whole of the law upon which the subject-matter depends, and all the principles necessary to the drawing of specifications may be derived from the rules of Common and Statute Law, and the rules of construction which have been already described. Thus, for instance, the fact that the grant purports to be made on the prayer of the petitioner, causes the recital to be treated as his suggestions, hence then, if one of them is false,

the patent fails. The recitals that the patentee is the first and true inventor, and that others do not use the invention do little more than repeat the conditions of the Statute of Monopolies. The recital that the inventor has filed a complete specification particularly describing the nature of his invention puts upon him the necessity of having complied with this provision by a correct specification, according to the provisions of the Patent Acts. From which it follows :—

(*a*) That the invention must be correctly described in the title and specifications, for otherwise not only would the patent when granted be void for uncertainty in what had been granted, but the Queen would not have been correctly informed what the invention was. Thus, if in any material part the specifications do not agree with one another and with the title in describing the invention, if they are ambiguous, or if they do not clearly distinguish what it is that has been invented from what has gone before the whole patent will be invalid, even though the subject-matter be perfectly good.

(*b*) The complete specification must not only describe the invention correctly, but must also explain the best method with which the inventor is acquainted for putting it into practice, in a manner sufficient to be clearly intelligible, to a fairly skilful workman, acquainted with the manufactures to which the invention relates, and without the necessity of further experiments, except such as are necessarily incident to a fair trial of it.

The necessity for the observance of this condition does not directly arise by reason of the Common Law or the Statute of Monopolies, but upon the suggestion made in the grant that the patentee has, "by, and in his complete specification particularly described his invention."

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It may be observed that the old form of patent added the words "and in what manner the same is to be performed." But though these words are not in the modern form of grant they are clearly implied. For the Patents Act of 1883, s. 5, sub.-s. 4, distinctly requires that this shall be done in a complete specification, and it is clear that it is an absolute necessity in order to make the grant of the patent beneficial to the public. The kindred provisions that the specification shall commence with the title, and end with the claims (sub-sect. 5) has been held to be only directory, consequently its non-observance would not render a patent void, though it might be prejudiced.

It has also been pointed out that in Crown grants the failure of a part of the suggestions or considerations causes the whole grant to be void, and therefore a want of proper subject matter in a part of an invention, or a failure of essentials of description as to a part of it, in the title or specifications will be fatal to its validity.

Formerly a patent which was imperfect as to part of the invention, might be amended by disclaimer. Now it may be amended generally, but not so as to widen its scope or enlarge the grant.

As soon as the specifications are sent in they are submitted to an examiner, who sees that the form is technically correct and reports upon any obvious errors which the comptroller may require the patentee to amend. But such examination gives no validity to the patent.

When the complete specification has been accepted, it is published, and then during a period of two months any interested person who thinks that the patent contains an invention which is subject of a previous

patent, or who alleges that the invention has been stolen from him, or that the complete invention contains matter not in the provisional, and for which a patent has in the interim been applied for by him, may oppose the grant. A certain definite procedure is laid down for this opposition. But the right of opposing is limited to certain persons and for certain definite causes. If no opposition is offered, or if any opposition offered is unsuccessful, the patent is then sealed, but so as to date back to the date of the application. It follows that if a man after sending in his provisional specification discovers some legitimate development of it, he will be the first and true inventor of that development, even though someone else may have independently made it after the application and before the sending in of the complete specification.

The grant of a patent entitles the patentee and his executors and assigns to prevent the unauthorised or unlicensed use of his inventions and is valid until shewn to be bad; but such grant does not in any way cure an inherent defect in the subject-matter of the invention, or in the title or specifications, all of which may be afterwards impeached.

The patent is for fourteen years, but in cases in which the patentee can shew that his invention has been inadequately rewarded, the Privy Council can grant him a new patent for a term not exceeding fourteen years more. This is called extending the patent.

Having thus sketched very briefly the salient characteristics of an invention, it only remains to shew how it can be infringed. It is obvious that it is not needful that the infringing article should be an exact reproduction of the thing described in the patent. Any

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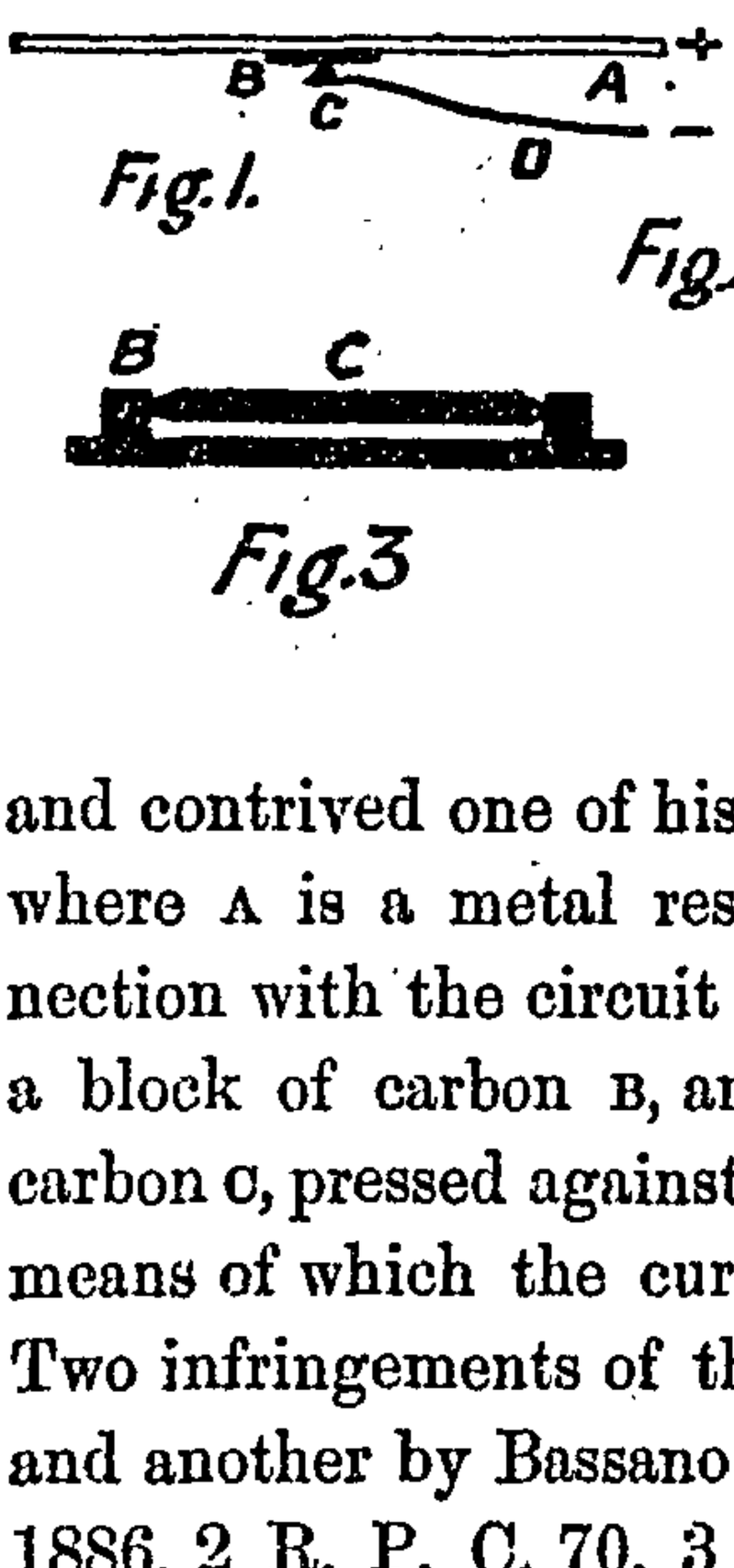
manufacture which substantially uses the invention patented, infringes it. It is not possible to lay down any rule which will decide when the exercise of the invention has been infringed; each case will stand upon its own merits. An example may serve to illustrate this. The invention of the Carbon Microphone depends on the fact that when an electric constant current is passed through two pieces of semi-conducting substance in contact, any vibrations of these substances induced by the air waves produced by the human voice, will cause variations in the current strength, very suitable for actuating a telephone, which consists of a coil of wire wrapped round the end of a magnet in close proximity to an iron diaphragm. Edison patented this in 1877,



and contrived one of his instruments as shown in Fig. 1., where A is a metal resonating diaphragm put in connection with the circuit from which the current passes to a block of carbon B, and thence to a second block of carbon C, pressed against the first by a metal spring D, by means of which the current is carried away to the line. Two infringements of this took place, one by St. George and another by Bassano: *United Telephone Co.* v. *Bassano*, 1886, 2 R. P. C. 70, 3 R. P. C. 295. St. George's was like Fig. 2: *United Telephone Co.* v. *St. George*, 1886, 3 R. P. C. 33, 321. In this the whole diaphragm was made of carbon, and the carbon block held by the spring was replaced by a ball C, suspended by a fine metal conducting spring so as to press lightly against the carbon

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diaphragm. This was considered as infringing the substance of Edison's inventions.

Bassano's infringement consisted of a wooden chamber which played the part of the resonating diaphragm and contained two pencils of carbon loosely fitted into holes in other pieces against which the pencils rested by virtue of their own weight. From a scientific point of view the action of this was similar to the others. Fig. 3 represents one of these pencils, and it was held an infringement.

It follows from what has been said that if the differences between the article complained of, and that described in the invention, only consist of immaterial changes, or of mere additions, an infringement will have been committed. To determine what is an immaterial change, one must be acquainted, not only with the description of the invention given in the specification, but with the state of the arts and manufactures at the time. For instance, a machine that in the infancy of the arts was a totally new departure, might, in a more advanced age, be considered as merely an obvious adaptation. Moreover, the very same difference which would be considered a colourable variation in one case might be held to constitute a different invention in another. Let us consider an example, in order to make this proposition clear.

Suppose, for instance, a man had invented a machine for stretching trousers (Fig. 1), as shewn in the drawing, consisting of two clamps, A and B, fitted to the top and bottom of the trousers and pushed apart by the screw C working in a loose collar D, and actuated by a handle. And suppose another made a trousers-stretcher as shewn in Fig. 2, so arranged that the trousers doubled over at the knee, and the top and bottom were secured to the

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same clamp, and the trousers were stretched by using a similar handle and screw to press against a piece of wood placed in the fold at the knee. Would this last be an infringement of the first? At first sight one would certainly be inclined to say that it was. The mere alterations of position of the clamps still left the general features of the invention untouched. But a more intimate knowledge of what had been done in the matter of trousers-stretchers might greatly alter that view. Suppose it were shewn that Figs. 3 and 4 had previously been invented. It would then be clear that

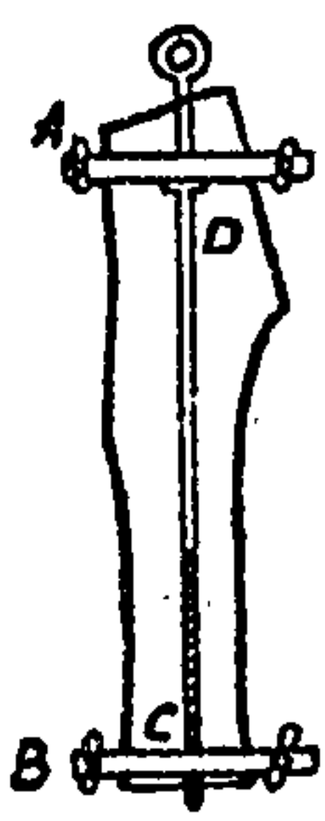

Fig. 1.

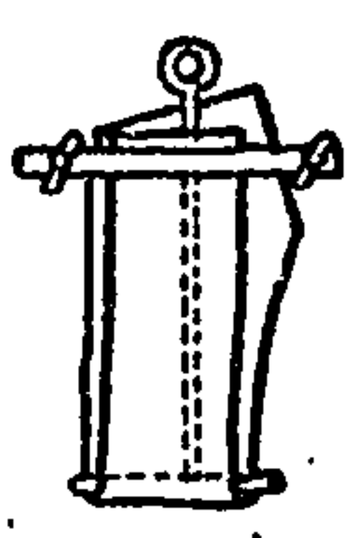
Fig. 2.

Fig. 3.

W.


Fig 4.

the only way in which the invention shewn in Fig. 1 could be good, would be by considering it simply as a mere patent for a series of details. To read it as claiming generally the method of stretching trousers by clamps would make it clearly bad as being anticipated by the stretchers shewn in Figs. 3 and 4. Suppose that, after looking at its terms, the Court thought that the stretcher in Fig. 1 could be read as only claiming the peculiar details. Then it is clear that the stretcher shewn in Fig. 2 would not be an infringement. For if the gist of the invention were only a special and particular mode of stretching trousers, then that mode

had not been infringed. The defence of the defendant would clearly be, first, that the plaintiff's patent was anticipated by Guy's and by Dredge's (Figs. 3 and 4); but, second, that if it were read in so narrow a manner as to be considered merely a special mode of stretching the trousers, then the defendants did not infringe it: *Gosnell* v. *Bishop*, 1888, 5 R. P. C. 151. Here, then, the "Ambit" of the plaintiff's invention was controlled by the previous inventions of Dredge and Guy.

A plaintiff whose patent has been infringed may, after commencing an action, obtain an injunction, and also damages, or an account of profits made by the infringer. The various steps in this action are pointed out further on.

Any one who has been threatened with proceedings under the patent law may bring an action for damages and to restrain the threats, unless the person making the threats will follow them up by bringing an action of infringement. In an action for threats, the plaintiff, that is to say the person who has been threatened, may deny the validity of the patent of the defendant who has made the threats, and the issues will then be much the same as in an action for infringement.

According to old law a proceeding lay for the revocation of an invalid Crown grant, called a *scire facias*. This has now been replaced by a petition for revocation.

The various proceedings in an action or proceedings for revocation can only be taken by the parties themselves, or by duly qualified solicitors.

The functions of patent agents are to advise the parties as to their rights, and assist them in drawing their specifications, and arguing for them before the Comptroller or on appeals before the Law Officer. The

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duties of patent agents demand a good acquaintance with patent law, and considerable mechanical skill and knowledge. They have to pass examinations, and are put on a roll by the Board of Trade. The provisions of the Patent Acts are entirely insufficient to protect the public from unqualified practitioners who have given no security for their conduct or knowledge. For though it is penal to assume the title of a patent agent, yet it is permissible for anyone without knowledge, training, or character to use every other sort of title, however calculated to deceive an inventor into the belief that he is consulting a patent agent. And although patent agents are subject to regulations quite as stringent as those applicable to solicitors, and like solicitors are liable for negligence, they have no solicitors' lien, no professional privilege as to the secrets of their clients, nor any similar exclusive rights. It is high time in the interest of the public that these glaring injustices should be removed, and that within their sphere of action patent agents should have proper protection, so as to encourage all who wish to act as advisers to patentees to become regular qualified practitioners, and put a stop to the many frauds that are now being perpetrated upon ignorant inventors.

CHAPTER I.

THE SUBJECT-MATTER OF LETTERS PATENT.

WHAT has preceded has prepared us to see that a grant of Letters Patent (1) must not derogate from a prior grant; must be (2) for some manner of new manufacture; (3) that it must be useful; (4) that it must be ingenious, and (5) that it must not have been anticipated by prior publication or by prior public user by persons other than the patentee. We shall proceed to consider these questions in order.

1. No patent can be good which derogates from a former grant of Letters Patent.—It is a general rule of law that the King cannot make a grant to the prejudice of the vested rights of others. Hence, when he has granted a patent for an invention to one person, he cannot on a subsequent occasion make the same grant to another. No case appears to have arisen in which this has been expressly laid down with regard to patents for invention, but the same point has been decided with reference to a market, in *Sir Oliver Butler's* Case, 1661, 3 Levinz, 220, and further examples are to be found in Viner's Abridgment, tit. 'Prerogative,' M., b. 5, fo. 188, vol. xvii. p. 92; see also *R.* v. *Mussary*, 1738, 1 W. P. C. 41. The point is not likely to arise, except in cases where the second patent is granted before the complete

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No patent can be good which derogates from a former grant of letters patent.

specification of the first is sent in, and in which such specification contains some development of the invention not in the provisional. For otherwise the second patent would be bad on the ground of prior publication. When two patents are granted on the same day a curious question may arise as to which has priority. For judicial acts are assumed to take place at the earliest period of the day on which they occur, and fractions of a day are not noticed. It is otherwise with an act of the party, such as the issue of a writ: *Clarke* v. *Bradlaugh*, 1881, 8 Q. B. D. 63. It might be argued that a patent (being granted like a writ, on the motion of the party) is really an act of the party, but there is this difference, that a writ is a matter of right, a patent is a matter of grace. Moreover, it would be rather hard that the relative precedence of patentees should be determined by the order in which a patent-office official might happen to open his letters in the morning, for there is no possibility of shewing which is first of two letters that have come in by the same post.

A patent for the use of an improvement on a prior patent, is of course no derogation from the prior grant (see sect. 6).

post, p. 59.

The manner in which a plea of derogation may be raised is perhaps difficult to determine, for if a defendant may plead that the plaintiff's patent derogates from a grant to a third person, then surely the defendant may plead that that patent is bad and give particulars of objections, and try the whole question out in the absence, of the third person, which might be inconvenient and possibly unfair.

2. A patent must be for some kind of manufacture.—The power of the Crown to grant patents for inven-

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tions is limited by the Statute of Monopolies, s. 6, to the "true and first inventor of any manner of new manufactures." For the power of the Crown is not exercised merely as a reward of ingenuity or scientific genius, but only for the furtherance of industry, and in its capacity as protector of trade: *Harmer* v. *Plane*, 1807, 14 Ves. 130, 136. It therefore becomes material to enquire what the word "manufactures" means. In the first place it is clear that the patent is not granted for the thing manufactured, nor the process of manufacturing, nor the machinery used therein. What the patent is granted for is the invention. It is, therefore, the *art* that is the subject of the patent.

For instance, if a patent were taken out for a new inkstand, it is not the inkstand which is the subject matter of letters patent, but the art by which the pieces of material comprising it are put together so as to form it. Or if a patent be taken out for a new medicine composed of old materials, the patent is in reality for the art of mixing them together so as to form the new compound.

Again, a patent for a process of manufacture is in reality only a patent for the art or craft by the aid of which that process is carried on. Except for an art, no patent can be granted. Thus, if a man discovers a totally new metal, he may have a patent for the art of making it, but not for the metal itself. When Crookes discovered Thallium, he could no doubt have taken out a patent for the art of producing it, but he could not have obtained an exclusive right to sell Thallium however made, even though it was a new product which he was the first to introduce to the world. On the other hand, when Sprengel invented his air-pump which

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operated by means of the fall of mercury from a height of more than thirty inches, he could probably have had a patent protecting the general idea of his machine, however carried out. But that is because the disposition of the glass, mercury, india-rubber, and wood that he employed was dictated by the new craft which he had invented.

In the case of Crookes the only industrial art given to the work by his new discovery of Thallium was the mode of making it.

Decisions have been given which would seem to imply, sometimes that the term "manufacture" means a process of making, sometimes a result obtained or an article made by that process. This proceeds from the ambiguity of the word "manufacture." Just as by the words "painting," or "drawing," or "sculpture," we may mean either the practice of the art, or the objects made by means of it, so also to the word manufacture we may give either an abstract or concrete meaning. There are some similarly formed words which admit of no such ambiguity. Thus we speak of the art of gardening, but the result of that art is a garden.

This ambiguity in the word manufacture has occasionally caused language to be used by the judges expressive of a doubt whether any patent could be granted for a process, and whether the only subject of a patent was not a manufacture in its concrete sense; that is to say a manufactured article. Thus, in *Rex* v. *Wheeler*, Abbott, C.J., thought that the word manufacture might "perhaps" extend to a new process: 1819, 2 B. & Ald. 349, and even in 1853, in *Crossley* v. *Potter*, M. P. C. 240, Pollock, B., says:—"It is in reality for the article that the patent is taken out, when it is said to be a process,

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that only means a process resulting in an article." This mode of expression is clearly erroneous, but in *Boulton* v. *Bull*, 1795, 2 H. Bl. 493, Eyre, C.J., said :—"When the effect produced is no substance or composition of things, the patent can only be for the mechanism, if new mechanism is used; for the process, if it be a new method of operating, with or without old mechanism by which the effect is produced."

In *Morgan* v. *Seaward*, 1837, 2 M. & N. 558, 1 W. P. C. 193, Parke, B., said :—"The word manufacture may mean the machine when completed, or the process of constructing the machine."

And in *Crane* v. *Price*, 1842, 1 W. P. C. 393, the validity of a patent for a process was clearly assumed. See also *Stevens* v. *Keating*, 1847, 2 W. P. C. 182; *Bush* v. *Fox*, 1854; M. P. C. 176; *Gibson* v. *Brand*, 1841, 1 W. P. C. 630.

It therefore admits of no doubt that both a new article or tool, or machine, and also a new process of manufacture may become the subject of letters patent; only it is to be remembered that in strictness the monopoly is granted, not for the article or process, but for the art of constructing or carrying it on. So that when we speak of "a patent for a new pen," we really mean a grant by letters patent of the monopoly of exercising the craft of making that pen. Or, again, when we speak of a patent for making anilin, we really mean a grant of the monopoly of exercising the craft of some particular mode or modes of making anilin. In fact, unless there is some art to be protected, a monopoly cannot be granted at all. Thus, if a new drug were discovered in a foreign land, no patent could be granted to the discoverer of a right to import and sell it; all

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that could be granted would be a patent for preparing or using it in some particular way; or if a chemist discovered a new substance, he could only have a patent for some mode or modes of making or using it, but not for the thing itself.

But not every art is capable of being patented. It must be an art connected with trade, that is to say, an industrial art. The word "craft" is often used to signify an industrial art. It will therefore follow that no monopoly can be granted of a right to do things which are not done by the exercise of some craft. For instance, in *Boulton* v. *Bull*, 1795, Dav. P. C. 199, Mr. Justice Buller, said:—"Suppose the world were better informed than it is, how to prepare James' Fever Powder, and an ingenious physician should find out that it was a cure for consumption, if given in particular quantities, I think it must be conceded that such a patent would be void; and yet the use of the patent invention would be new, and the effect of it as materially different from what it is now, as life is from death. So, in the case of a late discovery, which, as far as experience has hitherto gone, is said to be efficacious—that of the medical properties of arsenic in curing agues—could a patent be supported for the sole use of arsenic in aguish complaints?" (The judge in speaking of the preparation of James' Powder, evidently refers to the fact that Lord Mansfield in the case of *Liardet* v. *Johnson*, 1778, cited James' invention as defective, because in the specification (dated 1747, No. 626) he mentioned the ingredients, but omitted the quantities: see 1 W. P. C. 55).

This example shews that a new use of an old material cannot be patented, unless such new use itself constitutes a manufacture. The art of curing an illness cannot be

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said to be an art of manufacture, and it follows therefore that all old things may be used in new ways by private persons, provided always that in so using them they are not manufacturing anything. If a doctor discovered a medicine consisting of various ingredients, he might have a patent for it (of which a large number have been granted), and then no private person could make it up and use it (except simply as an experiment); but if the new medicine only consisted of one ingredient, or were only a new application of an old medicine, no patent for it could be obtained. In the first case, the patient would have to manufacture the dose before he took it, whereas, in the second case, no manufacturing process was needful, except the mere use of an already known article. Again, if any one discovered that some well-known drug was useful for any new domestic purpose, he could not prevent others from purchasing that drug, and using it, provided always that they did not do so in such a way as to amount to a manufacture.

post, p. 318.

And in like manner an invention for some mathematical process which, however useful, was not a manufacture, could not be patented. Thus a new method of computing logarithms, or a new cypher, or a new method of book-keeping, would not be good subjects of patents. It follows again, that the author of a book cannot be said to "manufacture" it, nor likewise can the writer of a song, or the painter of a picture, or the inventor of a design, take out a patent for them. The art of a painter really consists of two parts, the craft by knowledge of which the colours are mixed and applied to the canvas, and the art of composition by which the design is worked out. For an improvement in the craft, as for a new colour, or a new mode of applying it, no doubt a

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patent could be obtained; but the art of composing a picture could not be called an art of manufacture. A man who endeavoured to patent a picture would be either attempting to patent some particular principles of composition which he had discovered, or else some special arrangements of figures or light and shade, or some special subject or design. But neither of these can be said to be a "manufacture." In one sense the author of a book produces a physical article consisting of paper, ink, and cardboard, arranged in a way such as to be novel, useful, and to require invention to produce it. But the reason why this is not patentable is, because if he tried to patent it, the author would not be patenting a new craft, but only the product of a single exercise of an art, and could in no sense term himself a manufacturer.

In *Newall* v. *Elliot*, 1864, 10 Jur. (N.S.) 954, 10 L. T. (N.S.) 792, the question was raised whether a new process of doing a thing could be patentable when the result was, not the production of an article, but a new disposition of a quantity of machinery. The patent was for a new method of coiling submarine cables in ships for the purpose of laying the cables. "The point pressed by Mr. Cleasby, I confess I have some difficulty in understanding, that this is not the subject of a patent, because the thing is not vendible, because . . . instead of being ready-made and afterwards fitted up in the ship, it is fitted into the ship by the owner or user of the ship when he uses it. I confess I am unable to understand that" (*per* Bramwell, B.).

A method of disposing plates of iron on buildings, to make them fire-proof, was held good subject matter: *Hartley's Case*, 1795 (quoted, 2 H. B. 493). The same principle that a method, or process, is patentable, as well as

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an article or result, was also affirmed in *Stevens* v. *Keating*, 1847, 2 W. P. C. 182; *Bush* v. *Fox*, 1854, M. P. C. 176; *Gibson* v. *Brand*, 1841, 1 W. P. C. 630. But it is clear that the process so patented must be part, at least, of some process of manufacture.

3. A patent cannot be granted for a bare principle unconnected with a method of practically carrying it into effect—We have seen, then, that it is only for an art that a patent can be granted, and that the art must be of an industrial character, or, in other words, a "craft." It remains to consider what the nature of that craft or art must be, in order to be patentable. In one sense a craft may be said to include all the principles upon which it is based. Thus, the art of soldering metals together is based upon the principle that metallic alloys have a lower melting point than the metals of which they are composed. But this principle is not an art. It is the scientific basis of an art.

Philosophers from the time of Aristotle have defined an art as "a body of facts arranged with a view to practice," and a science as "a body of facts arranged with a view to knowledge." A somewhat similar distinction is made in patent law. It is only an art, or, perhaps, more strictly speaking, a craft that can be a manufacture, so as to be the subject of letters patent.

In accordance with this view, the Courts have decided that a mere principle cannot be patented unless it be coupled with some practical way of carrying it into effect. For it is only in this last case that it could be considered as a manufacture. "Suppose," said Grove, J., "that a person had discovered that three angles of a triangle are together equal to two right

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A patent cannot be granted for a bare principle unconnected with a method of practically carrying it into effect.

angles, that would be an abstract principle and not the subject of a patent, it must be for a manufacture": *Young* v. *Rosenthal*, 1884, 1 R. P. C. 31.

"It would be difficult to form a specification of a philosophical principle; it would be something like an idea without a substratum" (*per* Ld. Kenyon): *Hornblower* v. *Boulton*, 1799, 8 T. R. 99. "No merely philosophical or abstract principle can answer to the word 'manufacture.' Something of a corporeal and substantial nature, something that can be made by man from the matters submitted to his art and skill, or at least some new mode of employing that art and skill, is requisite to satisfy this word" (*per* Abbot, C.J.): *Rex* v. *Wheeler*, 1819, 2 B. & Ald. 349. "Here the refrigerating effect of the air on the sides of the vessel was not a thing for which a patent could be obtained, but an apparatus so constructed as to bring into operation that particular property of the external atmospheric air constitutes an invention" . . . (*per* Westbury, C.): *Cannington* v. *Nuttall*, 1871, L. R., 5 H. L. 225. "A patent will be good though the subject of the patent consist in the discovery of a great general and most comprehensive principle in science or law of nature if that principle is by the specification applied to any special purpose, so as thereby to effectuate a practical result. . . . It is then no longer an abstract principle; it is clothed with the language of practical application" (*per* Hope, L.J.C.): *Househill Co.* v. *Neilson*, 1843, 1 W. P. C. 673. "If you have a principle or a new idea as regards any art or manufacture, and then shew a mode of carrying that into practice, you may patent that though you could not patent the idea alone" (*per* Jessel, M.R.): *Otto* v. *Linford*, 1881, 46 L. T. 39; *Badische Anilin Fabrik* v. *Levinstein*, 1885, 2 R. P. C. 91.

A patent cannot be granted for a bare principle unconnected with a method of practically carrying it into effect.

It is sometimes very difficult to distinguish between the enunciation of a principle and a general description of a new procedure. In the case of *Neilson* v. *Harford*, 1841, 1 W. P. C. 331, the patentee thus described his invention: "A blast or current of air must be produced by bellows or other blowing apparatus in the ordinary way to which mode of producing the blast or current of air, this patent is not intended to extend. The blast or current of air so produced, is to be passed from the bellows or blowing apparatus into an air vessel or receptacle made sufficiently strong to endure the blast, and through, or from that vessel or receptacle by means of a tube-pipe or aperture into the fire, forge or furnace. The air vessel or receptacle must be air-tight, or nearly so, except the apertures for the admission or emission of the air, and at the commencement, and during the continuance of the blast, it must be kept artificially heated to a considerable temperature" (1 W. P. C. 273). Commenting upon this description, Park, B., said:—"It is very difficult to distinguish it from the specification of a patent for a principle, and this at first created in the minds of the Court much difficulty; but, after full consideration, we think that the plaintiff does not merely claim a principle, but a machine embodying a principle, and a very valuable one.

"We think the case must be considered as if the principle, being well known, the plaintiff had first invented a mode of applying it by a mechanical apparatus to furnaces: and his invention then consists in this—by interposing a receptacle for heated air between the blowing apparatus and the furnace. In this receptacle he directs the air to be heated by the application of heat externally to the receptacle, and thus

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A claim of every method by which a thing could be done would be a claim for a principle.

he accomplishes the object of applying the blast which was before of cold air in a heated state to the furnace." (p. 370).

In the same case, Baron Alderson said:—

"If you claim a specific shape, and go to the jury and say, that which the other people have adopted is a colourable imitation, then I can understand it. If you claim every shape you claim a principle. There is no difference between a principle to be carried into effect any way you will, and claiming the principle itself; you must detail some specific mode of doing it" (*per* Alderson, B.): *Neilson* v. *Harford*, 1841, 1 W. P. C. 355. It is obviously not meant here that if you invent a principle, and specify and claim a vast number, or indeed every possible way of doing it, that the patent would be bad. What is condemned is a vague claim of all ways of doing the thing. The proper method is to clothe the principle with one or more ways of carrying it out, and then rely on other methods being treated as merely colourable imitations. "If you start with some mode of carrying the principle into effect, you are entitled to protect yourself from all other modes of carrying the same principle into effect, that being treated by the jury as a piracy of your original invention" (*per* Alderson, B.): *Jupe* v. *Pratt*, 1837, 1 W. P. C. 146; *Easterbrook* v. *G. W. Rail. Co.*, 1885, 2 R. P. C. 207; see Chap. IX., sec. 5.

post, pp. 197, 292.

The same opinions were further amplified by Lord Justice Clerk Hope, in another action on Neilsons' patent. "The defenders say:—'You announce a principle, that hot air will produce heat in the furnace; you direct us to take the blast without interrupting, or rather without stopping it, to take the current in blast

A patent cannot be granted for a bare principle unconnected with a method of practically carrying it into effect.

to heat it after it leaves the blast, and to throw it hot into the furnace. But you tell us no more, you do not tell us how we are to heat it; you say, you may heat it in any way, in any sort of form of vessel; you say, I leave you to do it how best you can. But my application of the discovered principle, is, that if you heat the air, and heat it after it leaves the blowing engine (for it is plain you cannot do it before), you attain the result. I state, that is the purpose to which I apply the principle. The benefit will be greater or less. I only say, benefit you will get, I have disclosed the principle. I so apply it to a specific purpose by a mechanical contrivance, viz., by getting the heat when in blast, after it leaves the furnace; but the mode and manner and extent of heating, I leave to you, and the degree of benefit, I do not state. The defenders say the patent on this account is bad in law. I must tell you that taking the patent to be of this general character, it is good in law; I state to you the law to be that you may obtain a patent for a mode of carrying a principle into effect; and if you suggest and discover, not only the principle, but suggest and invent how it may be applied to a practical result by mechanical contrivance and apparatus, and shew you are aware that no particular sort of modification or form of the apparatus is essential in order to obtain a benefit from the principle, then you may take your patent for the mode of carrying it into effect, and are not under the necessity of describing and confining yourself to one form of apparatus.'" *Household Co.* v. *Neilson*, 1843, 1 W. P. C. 685.

Lane Fox discovered the necessity of keeping up a constant pressure in electric mains, and he patented his

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discovery, but he did not explain how it was to be done in a manner sufficiently explicit to shew how the principle was to be applied. In the Court of Appeal, his patent was held bad. Cotton, L.J., said:—"An invention is not the same as a discovery. When Volta discovered the effect of an electric current from a battery on a frog's leg, he made a great discovery, but no patentable invention. Again, a man who discovers that a known machine can produce effects which no one knew could be produced by it before, may make a great and useful discovery, but if he does no more, his discovery is not a patentable invention. He has added nothing but knowledge to what previously existed. A patentee must do something more, he must make some addition, not only to knowledge, but to previously known inventions. . . . The plaintiff was a pioneer, he shewed others the road to be followed, but he did not give the traveller the information necessary to enable him to travel on it: *Lane Fox* v. *Kensington Co.*, 1892, 9 R. P. C. 419; *Automatic Weighing Machine Co.* v. *Knight*, 1889, 6 R. P. C. 297: In this case, the plaintiffs in their specification described a weighing machine consisting of a platform which sunk with the weight of the person to be weighed, and as it sunk, raised up a pivoted lever with a counter-weight attached to it. The amount by which the lever was rotated thus was a measure of the weight. This lever was concealed from view. In order to reveal the result on payment of a penny, the weight of that coin when dropped through a slot into a little box, caused another indicating hand to rotate till it came in contact with the concealed lever. The first claim was, "The manufacture and use of a new kind of weighing machine such as is herein described, in

A patent cannot be granted for a bare principle unconnected with a method of practically carrying it into effect.

which, on a coin or the like being placed in the apparatus the weight of a person or body being weighed will be indicated on a dial or the like substantially as hereinbefore described." The Court held that this was clearly not a patent for a principle.

But it must not be concluded, because a principle is not patentable, that therefore only specific modes of performing the inventions can be claimed. In one sense, every patent which has an inventive merit about it, is for a principle, and could be carried out in various ways, and with various differences. Thus, for instance, the patent above quoted in *Neilson* v. *Harford* was for the use of the hot blast for smelting iron. It was quite independent of the shape or size or modes of construction of the parts; its essence was in passing the air into a hot chamber before it impinged on the fire in the furnace. In one sense this was a principle of construction, but in reality it was a principle clothed with an actual means of carrying it into effect, for any one could understand and apply it. Take again Edison's patent for the use of a carbon filament of high resistance in a vacuum composed wholly of glass, into which the conducting wires were sealed. This, in one sense, was a principle of lamp construction, and a very valuable one; but in the true sense it was only a description of the leading features of a lamp which might be carried out in an infinite number of ways. What is condemned as not being a "manufacture," is an abstract principle not applied specifically to any given class of objects: *Edison* v. *Woodhouse*, 1886, 32 Ch. D. 520; 4 R P. C. 79; on the other hand, Lane Fox failed because he merely pointed out that accumulators were useful in keeping up a constant pressure in electric mains, but omitted

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to give objective validity to his discovery of this principle by reducing it to practice.

A patent cannot be granted for a bare principle unconnected with a method of practically carrying it into effect.

See also *Minter* v. *Wells*, 1834, 1 W. P. C. 134. (Chair Seat), but same patent held to have been anticipated: *Minter* v. *Mower*, 1837, 6 A. & E. 735, 1 W. P. C. 142; *Neilson* v. *Harford* (Hot Blast), 1841, 8 M. & W. 806, 11 L. J. Ex. 20, 1 W. P. C. 331; *Household Co.* v. *Neilson*, 1843, 9 Cl. & F. 788, 1 W. P. C. 673; *Electric Telegraph Co.* v. *Brett*, 1851, 10 C. B. 838, 20 L. J. C. P. 123 (Electric Telegraphs); *Cannington* v. *Nuttall*, 1871, L. R. 5 H. L. 205, 40 L. J. Ch. 739 (Glass Furnaces); *Hills* v. *London Gas Co.*, 1860, 5 H. & N. 312, 29 L. J. Ex. 409 (Gas Purification); *Boulton* v. *Bull*, 1795, 2 H. B. 500, n.; *Hornblower* v. *Boulton*, 1799, 8 T. R. 95, D. P. C. 221 (Lessening Coal Consumption in Engines); *Badische Anilin Fabrik* v. *Levinstein*, 1887, 24 Ch. D. 156, 12 App. Cas. 710 (Dye); *Thomson* v. *Moore*, 1889, 6 R. P. C. 450, 7 R. P. C. 325 (Compass Cards); *Newton* v. *Vaucher*, 1851, 6 Ex. 865, 21 L. J. Ex. 305 (Lining Metal); *Hullet* v. *Hague*, 1831 2 B. & Ad. 378 (Evaporation of Liquids).

Cases in which patents were upheld, as being for a principle with a means of practically carrying it out.

4. A patent may be granted for a process which simply omits a step in an already known process.—There is no doubt of the truth of this proposition, but it is somewhat hard to find a case that exactly establishes it, and in which the only change from what has gone before is the omission of a part of the machine, or of a step in the process.

In *Minter* v. *Mower*, 1835, 1 W. P. C. 142, the plaintiff had claimed generally every application of self-adjusting leverage, whereby the seat of a chair was so connected with the back that the weight of the body on the chair balanced the back of it. It was proved that Brown had

A patent may be granted for a process which simply omits a step in an already known process.

constructed a chair with this feature, but much encumbered with a pad, spring, and rack. This was held to be an anticipation, but the Court intimated an opinion that if Minter had confined his claim simply to the particular chair, then he might very probably have established his title by shewing that a part of Brown's chair could have effected that for which the whole chair was designed.

The following cases may be consulted, but none of them expressly decide the proposition.

Where it had been usual to make seeds into oil, and oil into gas, a good patent could be had for making seeds directly into gas: *Booth* v. *Kennard*, 1856, 1 H. & N. 527, 26 L. J. Ex. 23 (the patent was invalidated for want of novelty), 2 H. & N. 84, 1857, 26 L. J. Ex. 305. Gelatine was made from hides cut into large pieces and treated with caustic alkali or else reduced to pulp. Held, a good patent to omit the caustic alkali and cut the hide into shavings instead: *Wallington* v. *Dale*, 1852, 7 Ex. 888, 23 L. J. Ex. 49. Tubes used to be made according to an old patent by bending iron plates into cylinders and drawing them on a mandril between welding rollers; a patent for omitting the mandril held good: *Russell* v. *Cowley*, 1832, 1 W. P. C. 457; see also *Arnold* v. *Bradbury*, 1871, 6 Ch. App. 714. The doctrine seems once to have been doubted: *Gibson* v. *Brand*, 1842, 1 W. P. C. 639.

5. Patents for combinations and improvements.—Where an invention does not consist of a new article or a new sort of machine, or a new process, it will generally come under the head of an improvement or a new combination. It is often very difficult to say

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whether an invention is for a new machine, an improvement on an old machine, or a new combination of old parts of machinery. But as will be seen hereafter when it becomes necessary to deal with "infringement," it is often necessary to distinguish between a new machine, an improvement, and a combination. A new machine is one which presents some features of novelty so fundamental or essential, that it may be regarded as different in its nature from those which had preceded it. Thus for instance, the ring armature to the dynamo, invented by Pacinotti, and first made practicable by Gramme, may distinctly claim, not to be a mere improvement on what had gone before, but substantially a new machine for producing electricity. Again the induction machine for producing electricity of high tension was essentially and distinctly a different machine from the old plate friction machines, although in shape and appearance it somewhat resembled them. Again the horse clipper (*Clark* v. *Adie*) might fairly be considered a new machine, when compared with the old scissors, and the rotary hair-brush might claim to be a new machine as compared with the old hand-brush. An improvement is produced when some new part is added to an old machine, or some novelty introduced into an old process whereby they are more useful. Thus for instance, the ring armature of the Gramme dynamo was improved by the introduction of air spaces between the coils, to cause the circulation of air amidst the wires and iron, and thus to cool them, but the form of the armature remained much the same as before. The principles on which it acted were identical. Hence then, this new and valuable suggestion was only an improvement. It follows that in an improvement, that which is added should be new, or substantially new in its

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nature, and yet not so important as to transmute the old machine or process into a substantially new one.

But a new combination consists essentially of a new arrangement of old parts, or else of an associating together of old parts which previously were never united. If the invention consist of a readjustment of old things, or an association together of old things not previously united, it is a combination, whereas if it consist of the addition of a new thing to an old one, or to an old combination, it would be more properly described as an improvement. It is, therefore, often very difficult to say whether an invention is an improvement or a combination.

Thus, for instance, aneroid barometers are old, so also are recording drums, but the first person who combined together an aneroid barometer with a recording drum, would, if he had made a valid invention (and this would much depend on the condition of knowledge at the time) have made a combination. But it would also be hardly wrong to describe it as an improvement.

Although there is in strictness a difference between the words "combination" and "improvement," which an endeavour has been made to explain, yet in practice the word improvement is used to cover combination, and the title of a patent "an improved machine" for doing a thing, would cover more than would be strictly understood by a mere improvement. Very commonly an invention is described as "a new and improved machine," so that the title may cover either clear novelty in the machine, novelty in an improvement in it, or a new combination.

In an improvement, however, or in a combination, it is necessary that there should be utility, invention, and

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novelty. These will be treated in more detail in subsequent chapters; meanwhile, it is sufficient to say, that it is not enough simply to make a union of two things which have never been united before and call it an invention. Thus, one could not patent the fixing of clocks in railway carriages. It is probably new, it might be useful, but no invention would be required to carry it out. The essence of a combination is, not that the parts of it should be new, but the essence is in the novelty, ingenuity and utility of their union. It will follow as we shall see hereafter that the only mode of infringing a combination is therefore to infringe the union of the parts, not to use any one of them disunited. If any one of the associated parts is new, then it becomes doubtful whether the invention is in reality a combination or an improvement. For though the distinction between a new machine, an improvement, and a new combination is easy to formulate in theory, nothing is harder than to apply the distinction to the various inventions which are made every day. But while it is frequently essential in deciding a patent case to determine whether the invention is an improvement or a combination, yet in the drafting of patents, this delicate distinction is of less importance. For if a patentee has made a real invention, correctly described it, and correctly stated his claims; then, whether it be a new machine or process, an improvement or a combination, it will be supported, even though the Court might not agree with the exact classification adopted by the inventor.

It appears that in *Bircot's* Case, 1568, Year Book 15, Elizabeth, Easter Term 4, the Court of Exchequer had decided that no patent could be granted for an improve-

ment, saying that it was "much easier to add than to invent." This dictum may have been due to the fact that the Court thought that merely to improve a method was not such an introduction of a new manufacture as was contemplated in the statute, taking the older view that it was not so much a particular invention, as the right to practise a "mystery" that was the subject of the monopoly. This case was, however, definitely overruled in 1776, in the case of *Morris* v. *Bransom*, Bull. N. P. 76, c., which affirmed a patent for a new mode of weaving lace which laid the foundation of a great improvement in the lace trade at Nottingham. See also, *Boulton* v. *Bull*, 1795, D. P. C. 201, 205; *R.* v. *Arkwright*, 1785, D. P. C. 61; *Hornblower* v. *Bull*, 1799; 8 T. R. 98; *Hill* v. *Thompson*, 1817, 8 Taunt. 375.

A patent may clearly be granted for an improvement, and owing to the progress of invention it has become so hard to hit upon a new leading idea, that by far the greater number of modern inventions are only improvements on what has gone before.

A patent may be granted for a new combination of old materials or of things partly new and partly old. But it is not sufficient merely to put two things together and call them a combination, "as to put a lock on a window which had previously been put on a door, and call it a combination" (*per* Grove, J.): *Bamlett* v. *Picksley*, 1875, Griff. 44; *Saunders* v. *Aston*, 1832, 3 B. & Ad. 881.

post, pp. 180, 302.

Prior to 1836, anthracite coal had been used for smelting iron, so also had the hot blast, but the two had never been combined. A patent for their combination was held good: *Crane* v. *Price;* 1842, 4 M. & G. 580. This decision has been questioned, and indeed appears

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post, p. 13.

very doubtful. "I," says James, L.J., "have never been satisfied with the decision. That, however, is simply because I could not see how the word 'combination' could be properly applied to the introduction of a particular kind of fuel into a machine which had been patented for the use of every kind of fuel in the making of iron; but neither I, nor, so far as I am aware, any other judge, has ever questioned the principles upon which the case was decided, and which are thus laid down in the judgment of the Court delivered by Tindal, C.J.: 'We are of opinion that if the result produced by such a combiuation (*i.e.* a combination of two old things) is either a new article, a better article, or a cheaper article to the public than that produced by the old method, such a combination is an invention or manufacture intended by the statute, and may well become the subject of a patent'" (*per* James, L.J.): *Murray* v. *Clayton*, 1872, L. R. 7 Ch. 570. "It is no objection to a patent for a mechanical or chemical discovery that the articles of which it is composed were known and were in use before, provided that the compound article which is the object of the invention is new" (*per* Buller, J.): *Boulton* v. *Bull*, 1795, 2 H. B. 487. A blast had been used to remove dusty air from flour mills, and an exhaust had also been used: a combination of them was supported: *Bovill* v. *Keyworth*, 1857, 7 E. & B. 725. An alloy possessing special advantages, consisting of a particular combination of copper and zinc, is patentable, though the mixing of copper and zinc, to make brass was well known, and had been used in all sorts of proportions: *Muntz* v. *Foster*, 1843, 2 W. P. C. 93. The inventor made £55,000 by this patent: *Muntz's Patent*, 1846, 2 W. P. C. 113. The principle that combination patents are good if the combination is new

The subject of a combination patent is not the parts or things combined, but the combination of them.

post, p. 103.

and useful is laid down in the following cases:— *Morris* v. *Branson*, 1776, Bull. N. P. 76, 1 W. P. C. 51; *R.* v. *Arkwright*, 1785, 1 W. P. C. 71; *Huddart* v. *Grimshaw*, 1803, 1 W. P. C. 92, 1 C. P. C. 267; *Hill* v. *Thompson*, 1817, 1 W. P. C. 237; *Brunton* v. *Hawkes*, 1821, 2 B. & Ald. 550; *Carpenter* v. *Smith*, 1841, 1 W. P. C. 538; *Pow* v. *Taunton*, 1845, 9 Jur. 1056; *Sellers* v. *Dickinson*, 1850, 5 Ex. 312; *Lister* v. *Leather*, 1858, 8 E. & B. 1004, 1031, 27 L. J. Q. B. 295; *Morton* v. *Middleton*, 1863, 1 Ct. Sess. 3rd ser. 721; *Foxwell* v. *Bostock*, 1864, 12 W. R. 725; *Boyd* v. *Horrocks*, 1889, 6 R. P. C. 162.

6. It is no derogation from a patent to grant another for an improvement upon it, although the patent for the improvement cannot be used without the consent of the prior patentee.—At one time it was ingeniously argued that when the Crown had granted one patent, it could not grant a patent which in any way involved the use of the first, as, for instance, an improvement on the first. For it was contended that by so doing the Crown would derogate from its former grant. But this view was obviously incorrect, for the second patent was granted, not for the old process plus the improvement, but for the improvement only. "It was argued that in point of law no patent can be taken out which includes the subject matter of a patent still running and in force. No authority was cited to support this proposition" (*per* Tindal, C.J.): *Crane* v. *Price*, 1842, 4 M. & G. 580. "The assertion that all patents for improvements on existing patents must be void is obviously untenable" (*per* Campbell, C.J.): *Lister* v. *Leather*, 1858, 8 E. & B. 1004. "No doubt a man may

post, p. 313.

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It is no derogation from a patent to grant another for an improvement upon it, although the patent for the improvement cannot be used without the consent of the prior patentee.

make an invention which is partly covered by an existing patent, but he cannot use it without the license of the patentee" (*per* Malins, V.C.): *Fox* v. *Dellestable*, 1866, 15 W. R. 194; see also *Harmar* v. *Playne*, 1809, 11 East, 107, D. P. C. 318; *Lewis* v. *Davis*, 1829, 3 C. & P. 504, 1 W. P. C. 489.

7. A patent for an improvement may cover not only machines as they exist at its date, but also the same machines as subsequently improved.—*Electric Telegraph Company* v. *Brett*, 1851, 10 C. B. 881. This was a patent for telegraphic instruments for use with metallic circuits. At the date of the patent, earth returns for telegraphic wires were unknown, and the infringement complained of was an adaptation of the invention the subject of the patent, to instruments with earth returns. It was argued that no patent could be granted so as to cover future improvements, or so as to include a machine in a state unknown to the inventor, and that improvement-patents must be limited to machines substantially as known and used at the date of the patent. The Court, however, negatived that view. "A patent for improvements in the mode of doing something by a known process is sufficient to entitle the claimant to a patent for his improvements when applied either to the process as known at the time of the claim, or to the same process altered and improved by discoveries not known at the time of the claim" (*per* Cresswell, J.). See also *Crossley* v. *Beverley*, 1829, 1 W. P. C., p. 108, *note*.

8. If any substantial or essential part of an invention fails, the whole patent is void, for the grant is indivisible, and goes to the whole consideration.—

If any substantial or essential part of an invention fails, the whole patent is void, for the grant is indivisible, and goes to the whole consideration.

It might at first sight appear that if the King grant several things, and as to one of them it turns out that it is not the proper subject of a grant, the grantee may retain the others, though as to one of them the patent is void. But this is not so. For, in the first place, there is a recital in every patent that the inventor has made a certain specified invention, and that he has sent in a true description of it in his specifications. If these recitals are false in any part the whole grant fails. And, moreover, these suggestions or considerations go to the whole of the grant, and are the inducement of each part of it, and it is a principle of interpretation of Crown grants, that if part of the considerations or suggestions on which it is made fails, the whole grant is void (see Bacon's Abridgement, Prerogative, F.).

ante, p. 11.

It is different in the case of a private grant, where a partial failure of consideration will not annul a contract, provided there is sufficient left to support it (see Chitty on Contracts, chap. i., sect. 1). The first cases in which this theory was laid down with regard to the law of patents for invention were: *Hill* v. *Thompson*, 1818, 8 Taunt. 401, and *Brunton* v. *Hawkes*, 1821, 4 B. & Ald. 541. Hill had patented "Improvements in the smelting and working of iron." One of these improvements was for the use of lime to prevent the iron from being "cold short," but this had been anticipated by the publication of a book, 'Rinman's Dictionary,' and it was held that, inasmuch as a material part of the invention had failed, the whole patent was altogether void. The case of Brunton and Hawkes was of a patent for "Improvements in the construction of, making, or manufacturing of ships' anchors and windlasses and chain cables or moorings." This was a description of three distinct

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If any substantial or essential part of an invention fails, the whole patent is void, for the grant is indivisible, and goes to the whole consideration.

inventions. One of them, viz., that relating to anchors (which was held to be old), described the putting of the shank into the arm joining the flukes without welding, in a manner similar to the way in which a pickaxe is fastened to its handle by a conical hole in the arms fitted upon a cylindrical end of the shaft, which is then hammered up to make it tight. Abbott, C.J., said:—"Inasmuch as one of the things is not new, the question arises whether any part can be sustained. It is quite clear that a patent granted by the Crown cannot extend beyond the consideration of the patent. The King could not, in consideration of new invention in one article, grant a patent for that article and another. . . . It appears to me that the case of *Hill* v. *Thompson* is decisive upon that question." In the next year the same point was argued by Mr. Brougham in *Crossley* v. *Beverley*, 1 W. P. C. 109, but so hard did the rule which he had supported appear to him, that in 1835 he procured the passing of an Act which permitted the patentee to disclaim any part of his title or specification, or to enter a memorandum of alteration therein, which disclaimer or alteration were thenceforth to be taken to be part of the letters patent.

The principle, however, still holds that if any part of the subject-matter of any invention fails the whole is void: *Morgan* v. *Seaward*, 1836, 1 W. P. C. 173. In the case of *Roberts* v. *Heywood*, 1879, 27 W. R. 454, a tray for catching paint drippings was among other things specifically claimed. It was held to be bad and to avoid the whole patent.

It follows from the power of disclaimer given above, and the power of amendment which has now been substituted for it, that a patent which is void may, by

relating back, be rendered good again. It is hence not absolutely worthless, but only void until amended.

If any substantial or essential part of an invention fails, the whole patent is void, for the grant is indivisible, and goes to the whole consideration.

It may also be observed that this rule that the invalidity of part of the subject-matter invalidates the whole is less strictly applied when the invalidity is due to want of utility. The reasons for this will be stated further on (*post*, p. 71).

It will at once strike everyone, that if the doctrine that part failure of a patent avoids the whole were pushed too far, few patents could stand; accordingly, the Courts are chary of applying the principle so as to destroy a meritorious invention except where some distinct claim on the part of the inventor leaves them no choice. Where in good faith a claim of an old thing is made, the Court will often endeavour to read it, not as an isolated claim, but as a claim for a thing to be used in conjunction with the main part of the invention.

post, p. 198.

Thus, in a patent for screws, Jessell, M.R., says: "It does not follow that because an inventor thinks he has invented more than he has in fact, and describes the advantages of his invention, and some of these advantages arise from an old portion of his invention, it may not still be a good patent, provided the invention as claimed is so limited as to fail to cover the actual thing in use while it covers some of the advantages mentioned: *Frearson* v. *Loe*, 1878, 9 Ch. D. 58; *Plimpton* v. *Spiller*, 1877, 6 Ch. D. 412, L. R. 5 H. L. 433; see further as to failure of utility in a part of a patent, Utility, Chap. II., sect. 4.

post, p. 70.

9. The subject-matter must not be against public policy.—Thus, patents for housebreaking tools would not

CHAP. I. SECT. 9.

The subject matter must not be against public policy.

post, p. 241.

be granted: (Hindmarch, p. 142); P. Act, 1883, sect. 86; Griff. P. C. 20.

In Sir E. Coke's time it seems to have been considered that patents for inventions which substituted machine labour for hand labour might be bad on the ground that they discouraged industry. But this view was never formally adopted by the Courts of Justice.

CHAPTER II.

UTILITY.

1. An invention must possess utility in order to be the subject of Letters Patent.—As has been previously explained the power of the King to use his prerogative to create a monopoly depends upon that monopoly being for the public advantage (Bacon's Abridgment, tit. 'Prerogative'). And grants can only ensue according to the King's intent. Therefore, as they profess to be made "for the public good," it follows that no patent can be valid unless the invention is useful. It is, however, not needful that the invention should be commercially useful in the sense of being a better method for a manufacturer to employ, it is enough if it be a new, sound, practical method, even though it may not be so economical. In *Edison* v. *Holland*, 1889, Cotton, L.J., observed :—"I am afraid I cannot consider commercial utility. It is a new term in patent law": 6 R. P. C. 257. In *Ehrlich* v. *Ihlee*, 1888, 5 R. P. C. 437, Cotton, L.J., said: "In my opinion it is not necessary, in order to support a patent, to shew that all that is claimed is a commercial success, if it can be practically used, a very little utility is sufficient." Again, in *Wilson* v. *Union Oil Mills Co.*, 1892, 9 R. P. C. 70, Charles, J., remarked: "Commercially, this process

ante, p. 18.

ante, p. 9.

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An invention must possess utility in order to be the subject of letters patent.

appears to be enormously expensive. That appears to be the result of the evidence which the defendants have given me upon this occasion, but that is not the test, and it is not pretended it is the test. A patent may be a patent for a useful article—it may satisfy the conditions of utility, although it may be so commercially expensive as to be commercially useless. That is not the Act at all. The question is, does it really do, when put in practice by a competent man, what it assumes to do?": see also *Morgan* v. *Seaward*, 1836, 1 W. P. C. 185.

It is, however, necessary in considering the utility of a patent, to determine, not only what utility an invention or part of an invention really has, but also the utility which the inventor ascribes to it in his specification. For if an inventor describes a process, or a part of a process, or a machine, or other thing, as capable of producing a certain result, and it fails to accomplish that result, then, quite apart from the question whether the invention may or may not be useful in other ways, or on the whole, yet by that misrepresentation as to the effect of the operation the Crown will have been deceived and the patent will be invalid.

Thus, for example, it is clearly not necessary to the validity of a patent, that the invention should necessarily describe a cheaper way of doing a thing than before; but if the inventor represents it as a cheaper way, and it be not cheaper, his patent will fail. Lord Halsbury remarked in the case of *The Badische Anilin and Soda Fabrik* v. *Levinstein*, 1887: "The element of commercial pecuniary success has, it appears to me, no relation to the question of utility in patent law generally, though of course where the question is of improvement by reason of cheaper production such a consideration is of the very

post, p. 136.

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essence of the patent itself, and the thing claimed has really not been invented unless the condition is fulfilled": 4 R. P. C. 462; see also p. 466; *Kurtz* v. *Spence*, 1888, 5 R. P. C. 182.

Thus the question of utility has to be considered, not merely with regard to the Common Law, but with regard to the representations made by the patentee in his specification.

An illustration of the necessity that every part of the invention represented by the patentee to be useful should in fact be useful, is afforded by the case of *Easterbrook* v. *Great Western Railway Co.*, 1885, 2 R. P. C. 210; 3 R. P. C. 94. In his complete specification for a system of signalling, the inventor had represented that, by his arrangements, "it will be impossible to give a wrong signal or point antagonistic to each other." But at the trial, a model of his machine was exhibited, by which it was demonstrated that by moving the handles in a peculiar way in four different cases wrong signals could be given, and in one of these that four trains could be signalled to run into one another. This was held fatal to the patent, though evidence was given that in some cases the invention worked well.

It is not needful that practical utility should have existed at the date of the patent. It is enough that the invention should be mechanically effective and sound, and that there should be at least a reasonable prospect of utility. Thus it is explained in Chap. IV., sect. 2, *post*, p. 136. that though an invention may not be a commercial or practical success at the time it was made, yet if it afterwards becomes useful, or can be shewn to have a reasonable prospect of becoming so, the patent will be supported.

The necessity for utility in the subject matter of a

CHAP. II. SECT. 1.

An invention must possess utility in order to be the subject of letters patent.

An invention must possess utility at the time it is patented.

patent was repeatedly affirmed in early cases: *Darcy* v. *Allin*, 1602, 1 W. P. C. 6; *R.* v. *Arkwright*, 1785, D. P. C. 138, 1 W. P. C. 72; *Huddart* v. *Grimshaw*, 1803, 1 W. P. C. 86, D. P. C. 278; *Manton* v. *Parker*, 1814, D. P. C. 327; *Manton* v. *Manton*, 1815, D. P. C. 348. Manton's patent was for a touch-hole for guns, designed to let the air out while the charge was being rammed home, and yet prevent the powder also passing out through the hole. Evidence was given that the powder did come out; the invention was held not useful: see also *Bovill* v. *Moore*, 1816, D. P. C. 399; *Minter* v. *Wells*, 1834, 1 W. P. C. 129. "The effect of the evidence is, that without additional facts which are not described, the machines would certainly not be capable of making velvet goods" (*per* Pollock, C.B.): *Crossley* v. *Potter*, 1853, M. P. C. 245. See also *Boulton* v. *Bull*, 1795, 2 H. B. 463, D. P. C. 162; *Turner* v. *Winter*, 1787, 1 T. R. 602, 1 W. P. C. 80; *Morgan* v. *Seaward*, 1837, 2 M. & W. 562, 1 W. P. C. 197.

In patent actions, the plaintiff should always make a strong point of the utility of his patent. For if a patent is once shewn to be useful, the Courts will always be inclined in its favour, and its utility will also afford a presumption in its favour that it is new and ingenious. In *Lyon* v. *Goddard*, 1893, 10 R. P. C. 121, the plaintiff had invented a machine for disinfecting clothes, by putting them in a chamber filled with steam under pressure surrounded by a second chamber also filled with steam. At first sight the invention did not look very novel. But when it was shewn in evidence that all other ways of using steam had failed by reason of condensed water spoiling the fabrics, and when it was also shewn that hot steam possessed a peculiar property of pene-

trating into the very centre of woollen stuffs such as hot air did not possess, the opinions expressed by the Judge at the commencement of the trial changed, and the patent was upheld as for a valuable invention.

An invention must possess utility in order to be the subject of letters patent.

2. It is the invention that must be useful, not merely the result of the invention.—For a merely useless change in the shape or mode of making a useful article would confer no benefit upon the public. Thus, in an action on a patent for stays, Grove, J., told the jury: "The question is not whether stays were in existence before and were useful, but . . . whether there is anything in the plaintiff's invention which is more useful than the stays people had before; is there any new point of utility? If there is any new point of utility in the plaintiff's invention which was not in any previous known thing, then you may say it is useful. But if you think it is not as good as those existing before, or no better than those existing before in any particular point, then you would say it was not useful": *Young* v. *Rosenthal*, 1884; 1 R. P. C. 41.

The utility must be in the invention, not merely in some result of it.

The utility must exist, not merely in some one application of the invention, but in the very invention itself. Thus, in a patent for elastic fabrics, it was shewn that this material was useful for surgical bandages (which were not specially mentioned in the patent). Tindal, C.J., said: "It would not be sufficient to maintain the patent, on the ground of its being an improvement, to shew that it was an improvement of surgical bandages only, because the patent is not confined to that, but they must prove also that it is generally an improvement with respect to the general uses of that fabric or manufacture which was intended": *Cornish* v. *Keene*, 1835, 1 W. P. C. 506.

CHAP. II. SECT. 3.

The degree of utility may be slight if once utility is established.

3. The Degree of Utility may be slight if once utility is established.—"It has been decided over and over again that the slightest amount of utility (I will not say an infinitesimal scintilla, but a very slight amount of utility) is enough to sustain a patent" (*per* Grove, J.): *Philpot* v. *Hanbury*, 1885, 2 R. P. C. 37. "It is not necessary that a patent should be so useful as to exclude everything else; it is quite sufficient if on any occasion it is useful" (*per* Pollock, C.B.): *Tetley* v. *Easton*, 1852, M. P. C. 63. This rule depends on the general principle, that when once a substantial consideration exists, the amount or value of it is not material. This principle holds in contracts between subjects: see Chitty on Contracts, 5th Ed. p. 20. And there seems no doubt that the same rule applies to the Crown: Chitty's Prerogative, p. 400; *A. G.* v. *Vernon*, 1684, Vernon, fo. 279; Viner's Abridgment, Prerogative, vol. xvii., p. 151.

It is not necessary, in order to prove utility, to shew that the invention has been actually used: *Macnamara* v. *Hulse*, 1842, Car. & M. 471; but such user would, of course, be very good evidence of utility; see further, Commercial Success, Chap. IV., sect. 1 (*post*, p. 134).

4. Effect of failure of utility in a material part of the patent.—It was said in Chap. I., sect. 8, that if a substantial part of an invention proves to be useless, the whole invention fails. But, as was pointed out above, those cases in which the patentee has distinctly affirmed the utility of any part of his invention should be distinguished from cases in which he has made no such representation. Where he has made a distinct representation of the usefulness of anything, he will be held to it, and, if his representation is false, his patent will be

ante, p. 60.

Effect of failure of utility in a material part of the patent.

void. But where he has made no such representation, then, if his invention be valuable upon the whole, the conditions of the Statute of Monopolies will have been fulfilled, and a want of utility in some merely subordinate part will not avoid the patent. Thus a patent was taken out for several things, among which was an improved method of making horseshoe nails from a rolled ribbed plate. Two actions were brought in respect of the patent. In the second of these it was held that this was put forward as a substantive invention, that it was useless, and that the whole patent was consequently void. "I am unable to arrive at any other conclusion than this, that the patentee does set forth this very minor invention as part of the consideration for which he is to get his patent right, and so long as that stands, I am unable to resist the effect of the decisions" (*per* Lord Kinnear): *United Horse-shoe Co.* v. *Swedish Horse Nail Co.*, 1889, 6 R. P. C. 1. It was held, that where an invention for railway signalling was useful for part of the work, but very dangerous in some places, and where the inventor had not limited his invention to the safe part of it, that the whole patent was bad: *Easterbrook* v. *G. W. Railway Co.*, 1885, 2 R. P. C. 210, 3 R. P. C. 94.

Felton v. *Greaves*, 1829, 3 C. & P. 611. A patent had been obtained for a machine for sharpening knives and scissors consisting of a row of small discs with roughened edges arranged on parallel axes, Fig. 1, so that the knife could be drawn between them.

Fig. 1

In order to fit this for sharpening scissors, which are only sharpened on one side, it would be needful to leave one set of discs smooth, but the patentee had not described this. His invention

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Effect of failure of utility in a material part of the patent.

was therefore useless for scissors, and his patent was invalidated. This case was decided before the days of disclaimers and hence the patentee had no means of curing the defect in his title and specification. But where no separate and distinct claim is made to a certain part of the invention, or where a claim can be read as merely subsidiary, failure of utility in that part will not always avoid the patent, provided it is not one of the main features of the invention.

A patent had been taken out for drying calico and other stuffs. The jury found that the invention was useful upon the whole, but "not useful in some cases for taking up goods." On motion the Court considered that the jury had held that the invention was useful in the general, and that as they had not specified in how many cases it failed, that failure must be taken to be in an immaterial portion: *Haworth* v. *Hardcastle*, 1834, 1 W. P. C. 483, 4 M. & S. 732. *Lewis* v. *Marling*, 1829, decided, that where part of a process was useless, but the uselessness was subsequently discovered, and the inventor did not know it when he took out his patent, the patent was not void, it being on the whole a useful patent: 1 W. P. C. 496. In *Morgan* v. *Seaward*, 1837, the Court, whilst holding that non-utility of part of the invention made it void, said: "We do not mean to intimate any doubt as to the validity of a patent for an entire machine or subject, which, taken altogether, is useful, though a part or parts may be useless, always supposing there be no false suggestion": 1836, 1 W. P. C. 187, and Lord Kinnear, while holding a patent for making nails bad, because the sixth claim was not useful, says: "It is a perfectly sound proposition that . . . an invention shall not be invalidated because the specification includes some

The necessity of utility in every part of a patent is not to be too stringently required, provided that there is substantial utility in the invention as a whole.

minor claim, which turns out not to be useful, provided there is no concealment": *United Horseshoe Co.* v. *Swedish Horse Nail Co.*, 1888, 6 R. P. C. 1; see also *Ehrlich* v. *Ihlee*, 1888, 5 R. P. C. 450.

Effect of failure of utility in a material part of the patent.

The effect of commercial success as evidence of the utility of a patent is dealt with in Chap. IV. The fact that defendant infringed is some evidence of utility: *United Horseshoe and Nail Co.* v. *Stewart*, 1888, 13 App. Cas. 407.

post, p. 134.

CHAPTER III.

NOVELTY, AND THE AMOUNT OF INGENUITY NECESSARY TO CONSTITUTE IT.

CHAP. III. SECT. 1.

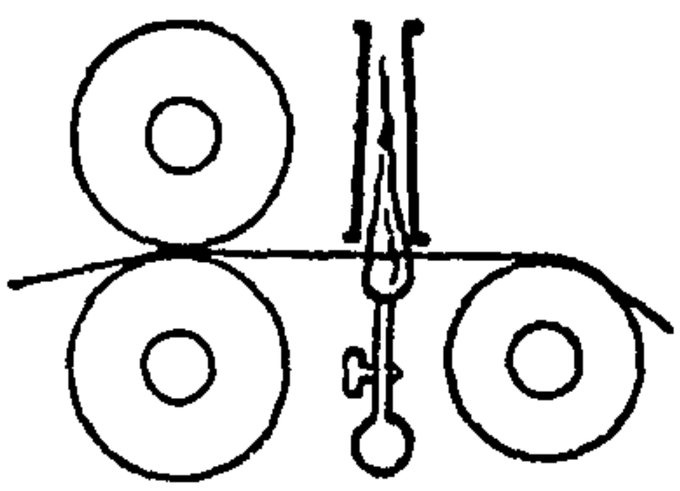
1. General remarks.—The only monopolies allowed by the Statute were for new manufactures. The question must early have arisen, whether a thing can be called new, which only differs from what has been done before by some merely immaterial alteration. And it must have been early seen that in order truly to determine the newness of a manufacture, the essence of the invention must be regarded, and not in its mere form.

Traces of this view are to be found in the case of *Roebuck* v. *Sterling*, 1774, 1 W. P. C. 45, in which it was submitted that the mere substitution of lead vessels for glass in the manufacture of sulphuric acid was no new discovery, but the decision did not turn upon this point. The reported cases which follow from that time to the year 1822, are chiefly noticeable for the destruction of a number of patents for valuable inventions through errors in the drawing of the specifications. But in the cases *Brunton* v. *Hawkes*, 1821, and *Hall* v. *Jervis*, 1822, the question of the *quantum* of ingenuity necessary to support an invention was definitely raised.

It will be interesting to give a short account of these patents, in order that the principles upon which the decisions proceeded may be made clear. Brunton's

patent was for a new method of making anchors, by forging the flukes in one piece, with a coned hole through the centre. Into this the shaft was inserted and bulged up to fit, just as the wooden handle of a pick-axe is fastened to the pick. A similar method had been used for mushroom anchors, and the patent was invalidated: 1821, 4 B. & Ald. 541.

Hall v. Jervis and Boot, 1822, 1 W. P. C. 100. The patent was for removing the small fibres that remain on cotton-lace goods after they are made, by singeing them with a gas flame. It was stated that the result of this invention was a very great improvement in lace, and that all manufactured lace was subjected to the process. The defendant excited no sympathy, for he was proved to have used the invention clandestinely. Prior to this invention many modes of singeing woven goods



had been employed. The fibres had been removed from silk, cotton or lace sleeves by putting them on a leg or sleeve board, and submitting them to the flame of charcoal, waste paper, wood shavings, or pit coal. Bellows too had been employed to force the flame into the interstices, and hot rollers had also been used. The plaintiff's invention was to submit the horizontally stretched portion to the flame of gas. But this alone would not do. For as Sir H. Davy has pointed out, flame will not go through a narrow set of interstices such as exist in wire gauze unless the gauze is forced against it, or unless the flame is sucked through it. Therefore, to effect this Hall placed chimneys over the lace, by the draft of which the flame was drawn right through the lace, so as to act on

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General remarks.

both sides of it, the lace being drawn through the flame sufficiently rapidly to prevent its being burned and yet slowly enough to singe off the wool on both sides, a result which would not be attained by merely blowing the flame by means of bellows into the interstices of lace stretched on a board. The jury were strongly impressed by the proof offered of the great improvement which the invention had effected in the lace trade and the evidence given that various experiments made by men of science for doing the same thing had failed. They found for the plaintiff. The Court afterwards refused to disturb the verdict.

This case is an instructive one. A man of science might have ridiculed the mere invention of a gas flame drawn upward by a draught of air, for singeing lace. But commercially, as it was shewn, the invention was a valuable one, and others had failed where the plaintiff had succeeded. This led to the conclusion that the method was really novel and not merely an old process in disguise.

The obvious justice of requiring that an invention shall not be a mere adaptation of some previously well-known method, naturally leads to the conclusion that in supporting a patent on the score of novelty it is needful to shew that it is to some extent a new departure, or, in other words, that some ingenuity must have been displayed in making it. Therefore when the novelty of a patent is impugned, the parties may find themselves engaged either upon a dispute whether as a fact some prior alleged invention was known to the public, or else that fact being conceded, whether it was really substantially the same as the patentee's invention. For convenience, these two very different questions may be

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separated, and the investigation of that part of the law of patents which deals with "novelty" may be divided into an enquiry as to what constitutes prior publication, or knowledge, what is a sufficient publication, and where and how that publication must have been made, and a separate enquiry, what amount of difference between one invention and another will be considered by the Courts as necessary to make the last of them novel. This has been recognized in the Courts. Thus Willes, J. said:—"I apprehend that if a patentee would succeed, he must shew not merely newness in the sense of doing a thing which has not been done before, but newness in the shape of novelty by producing a thing which requires some exertion of mind that could properly be called invention." *Tatham* v. *Dania*, 1869, Griff. 213. The distinction may be formulated by asking: (1.) Is the invention ingenious? (2) Has it been anticipated?

It is proposed in this chapter to consider the question of "*ingenuity*," and in the next to deal with "*anticipation*," always remembering that in law both these branches are embraced in the use of the word "*novelty*," and that the separation here proposed is merely adopted for the sake of clearness and convenience.

2. The ingenuity of every invention is to be judged in the light of the state of public knowledge at the time it was made.—The first reflection that must strike anyone in considering what is meant by saying that an invention is ingenious, is, that ingenuity is really a relative term depending on the state of the arts and sciences. That which in barbaric times would be a great effort of genius, might, in a more advanced

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The ingenuity of every invention is to be judged in the light of the state of public knowledge at the time it was made.

age, be justly regarded as a very obvious application of well-known principles.

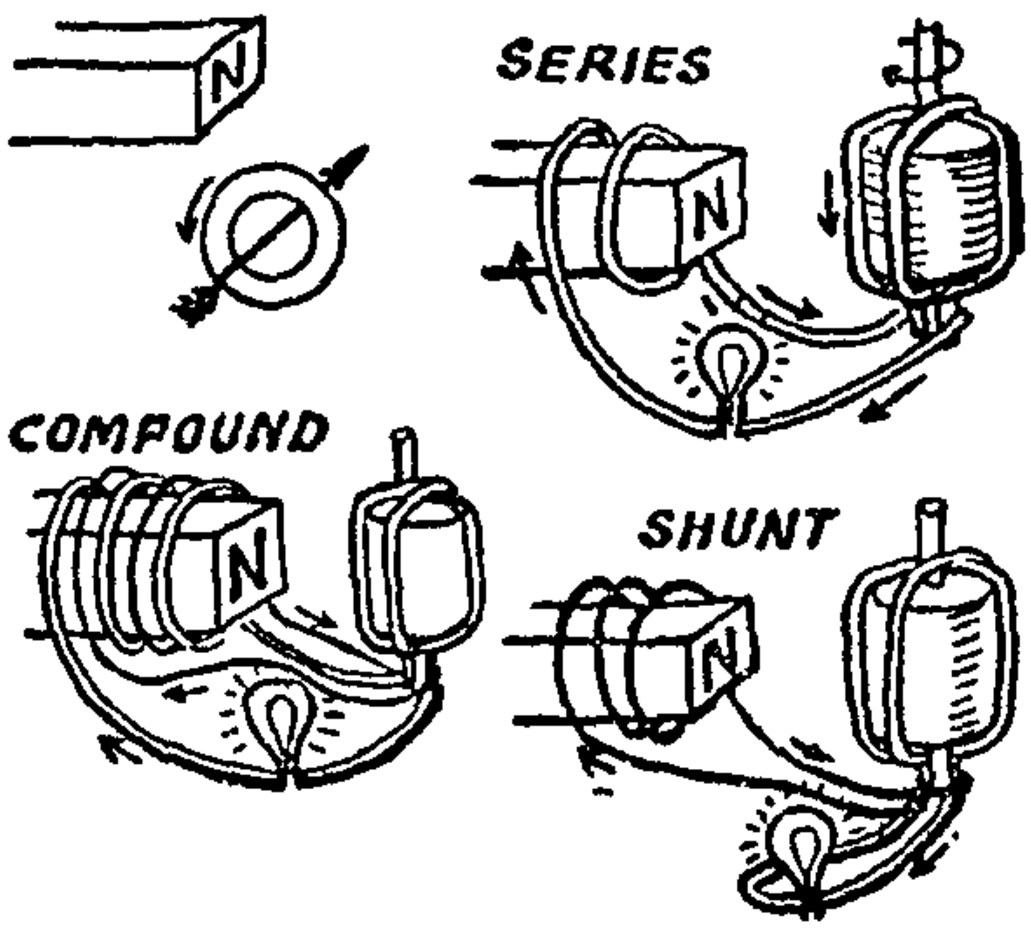
By lighting a pipe with a florence flask full of water held in the rays of the sun, a man might astonish a group of savages; in England, it would be regarded as the effort of an ingenious child. Every invention must be judged according to the standard of knowledge at the time it was made. This principle is most important in its applications. We are too apt on a trial relating to a telephone or an electric lamp which takes place some ten years after these instruments have been made for the first time, to consider the invention, not in the light in which it appeared to the world at the date when it was made, but in the light of the advanced state of knowledge at the date of the trial. It is surprising what a difference is made in the value of an invention, by a change in the point of view from which it is regarded. Thus, for example, the 'Principia' of Sir Isaac Newton were read for years by men of science, who, however, never obtained from that work any idea of the principle of the conservation of energy which has been one of the great discoveries of our own age. And yet it is now the general opinion that the Principia of Newton, read in the light of modern knowledge, clearly shew that he not only understood, but had anticipated that discovery. In the same way Huygens and Hook anticipated the undulatory theory of light, and anyone who will read Faraday's researches in the light of modern knowledge, will be surprised to find what a number of subsequent discoveries are shadowed forth in those volumes.

This principle was clearly assumed in *Crossley* v. *Beverley*, 1829, 1 W. P. C. 107, and again in *Lewis* v.

The ingenuity of every invention is to be judged in the state of public knowledge at the time it was made.

Marling, 1829, 1 W. P. C. 496; and will be further considered in the chapter devoted to the "Construction of Specifications."

In its application to the question of the novelty of an invention, we may take as an example *King Brown* v. *The Anglo-American Brush Corporation*, 1889, 6 R. P. C. 414, 7 R. P. C. 436, 9 R. P. C. 313; this was a petition for revocation of the Brush Patent of 1878, for what is known as the Compound winding of Dynamos. In order to make the case understood, it is necessary briefly to describe a dynamo, and the "shunt," "series," and "compound" methods of winding it. The invention of dynamos is derived originally from two discoveries made by Oerstead and Faraday about the year 1820, and developed by Paccinotti and Gramme.



The first of these is, that if a current of electricity be made to flow in a wire round a piece of soft iron, it becomes a magnet, more or less strong in proportion to the strength of the current and the number of turns of the wire. The next, that every magnet attracts along "lines of force," or "lines of magnetic influence," which radiate out from it in all directions; and if a closed metallic circuit, such as a coil of wire, is moved across any of these lines, resistance to the motion is experienced, and force is necessary to overcome that resistance, which force manifests itself in the generation of a current of

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electricity in the coil, more or less strong, according to the strength of the magnet, the distance of the coil, and the speed with which it is moved. The direction in which this current flows is always invariable, depending upon the polarity of the magnet, and the direction of motion of the coil. The causes of these phenomena are not at present known, but their practical utility is evident. Thus if a coil of wire is moved across the path of the magnetism radiating from the magnet N., a current will be generated in the direction of the small arrow. From whence it follows that if a cylinder of iron called an armature, with wire wound round it, is rotated close to a magnet N., electricity will flow in the wires, and may be drawn off by brushes to an electric lamp. But further, since electro-magnets are stronger than permanent steel ones, the current may be carried round the magnet by virtue of whose force it has been produced, and thus reinforce the magnet, so that the magnet and coil shall interact on each other. This is called the "series winding." It has a cumulative effect. The more electricity is produced, the more tends to be produced, and the electricity goes on increasing till the resistance of the armature to the engine that is turning it, and the electrical resistance of the wires becomes so great, that things come to equilibrium. Everything depends on the external circuit being *complete*, so that if the consumer turns out his lamp the circuit is broken, the magnet almost demagnetised, and the current stops. The action of this series machine, therefore depends on plenty of lamps being alight, so as to have a good external circuit.

But if, instead of leading the main current th. igh the circuit, we were to lead only a branch or "sh t" of

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the current through the circuit, then the strength of the magnetism would be independent of the external circuit, and the machine would work though no lamps or very few lamps were alight, and in fact the fewer lamps there are alight, the better it will light them. Here then we have two machines, one which works best when many lamps are alight, one which works best when few lamps are alight. The idea at once arises, why not unite them? and take one wire round in "series," and then lead the other round in "shunt," so that whether there are many lamps or few alight, one at least of the windings will benefit by what renders the other less efficacious. This was done by Brush in 1878 with excellent results, and is known as "the compound winding." But unfortunately for his patent, a patent had been taken out by Varley in 1876, in the specification of which he used the following words: "Part of the electricity developed by the machine is diverted to maintain the magnetism of the soft iron magnets, and the remaining portion is used to produce the electric light. There are several well-known ways of doing this, but the method I prefer is to wrap the soft iron magnets with two wires, one having a larger resistance than the other. The circuit of larger resistance is always closed, and the circuit of less resistance is used for the electric light. . . . When the electric light circuit is opened from any cause, the electricity developed passes through the circuit of greater resistance only, and maintains the magnetism of the magnets."

It was pressed upon the Court that the full *compensating* effect of the compound winding was not present to Varley's mind, and that to read it as an anticipation was really "a gloss put upon the passage by subsequent knowledge." The House of Lords held

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Varley's description as a true anticipation, but all the judgments delivered are expressly founded, not on the state of knowledge at the time of the trial, but on the state of knowledge at the time of Brush's patent.

Another interesting example of the application of this principle is found in the two cases by which the validity of the Bell and Edison telephone patents was established; the first of these was the case of the *United Telephone Co.* v. *McLean*, tried in Scotland; the other was an action brought by the same Company against *Harrison, Cox, Walker & Co.*, tried in London.

Before dealing with these cases it will be convenient briefly to explain the nature of Edison's transmitter and Bell's receiver which formed the subject of their respective patents.

When a piece of carbon is placed loosely in contact with a piece of metal, and both are caused to shake or vibrate by sounds such as the human voice, the contact between them becomes more or less imperfect, and if a current of electricity is passing through them, that current will be caused to vary in strength in proportion as the undulations of the voice vary; the result is that a battery connected through such a machine is caused to emit an electric current of a tremulous character, the undulations of the strength of which resemble the vibrations caused by the voice. Thus if a person speak through the trumpet-shaped

See next page.

orifice A to the diaphragm behind it, to which is fixed a cork, fastened to a piece of platinum, which rests in contact with a piece of carbon, then the current from a battery P passed through the instrument will acquire the tremulous character above described. Metal in contact with metal would effect the result, but nothing

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seems to be nearly so effective as carbon. This is the Edison transmitter. The current is now sent along the line to the receiver, which consists of a magnet F (preferably long and thin, as being more sensitive to delicate influences) on one end of which is placed a bobbin G, wound with thin wire in continuation of the line wire, and the current is then carried back to the battery either by a wire or an "earth return." By this arrangement the strength of the magnet is caused tremulously to vary in accordance with the voice vibrations, and if a diaphragm H of iron is placed near it, with the rim tightly secured, it will be made to vibrate like a drum, and the energy of the electric vibrations will then be re-transmuted into audible air-waves. This is the Bell "receiver." The diaphragms of both the receiver and the transmitter should be stiff, metal or mica answer well, membranes or paper are apt to set up independent vibrations and confuse the result. If the diaphragms are not fixed, or held pretty firmly by some means, they will not vibrate properly so as to receive or transmit speech.

In the case of the *United Telephone Co.* v. *McLean*, 1882, not reported except in *Engineering*, the principal attack was made upon the Morgan-Browne patent (a communication from Bell), and the circumstances were very singular. It appeared that in July, 1876, Sir W. Thomson (the present Lord Kelvin) met Mr. Bell at the Philadelphia Exhibition, and Mr. Bell, having shewn various inventions to Sir W. Thomson, finally told him that he had a machine which would transmit human speech, by means of electricity. He tried it, and distinguished the words, "To be or not to be." Bell gave Sir W. Thomson a membrane transmitter and a receiver.

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These instruments Sir W. Thomson brought to England, and exhibited at a scientific meeting in Glasgow before the date of the Morgan-Browne patent. His words will be found reported in *Engineering*, Sept. 15th, 1876, p. 241: "All this my own ears heard spoken to me with unmistakable distinctness by the thin circular disc-armature of just such another little electro-magnet as this which I hold in my hand. The words were shouted with a clear and loud voice by my colleague judge Professor Watson, at the far end of the line, holding his mouth close to a stretched membrane, such as you see

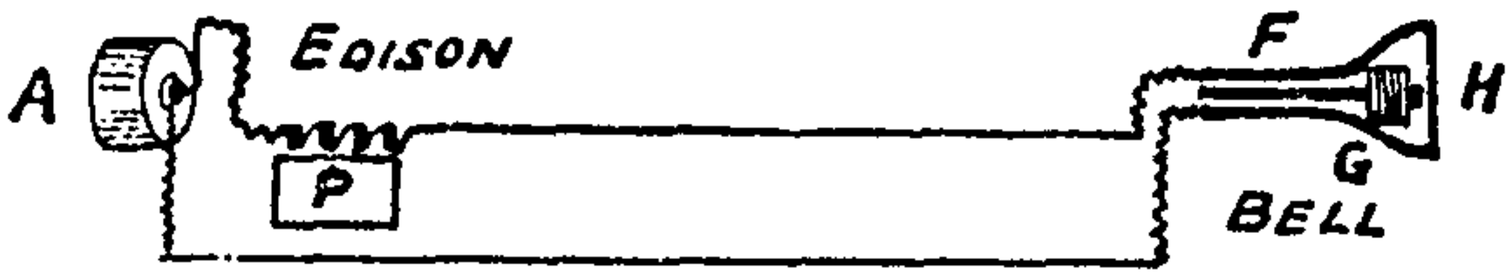
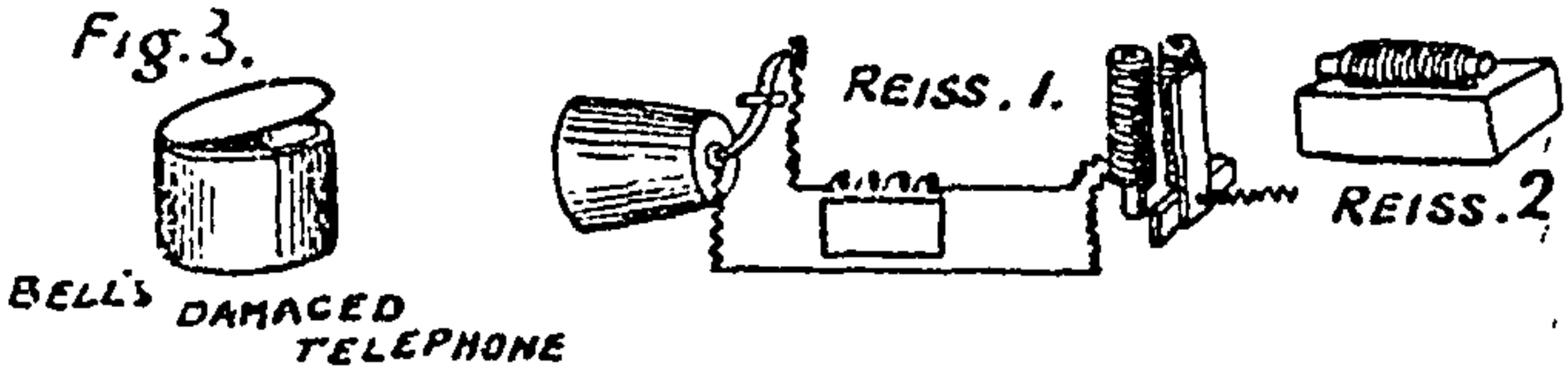


Fig. 3.



before you here, carrying a little piece of soft iron which was thus made to perform in the neighbourhood of an electro-magnet in circuit with the line, motions proportional to the sonorific motions of the air." He exhibited the instruments, but fortunately for the patentee, the iron plate of the receiver had become damaged and was only attached to the box containing the electro-magnet by one point, as the lid of a box is attached by the hinge so that it would not transmit speech (Fig. 3). There can be no reasonable doubt that Sir W. Thomson, one of the greatest living electricians, and himself a most ingenious mechanician, perfectly understood the invention, but the question at the trial

The ingenuity of every invention is to be judged in the light of the state of public knowledge at the time it was made.

was whether at that meeting he had published it to the world in such a way that an ordinary workman could have successfully performed it. Considering that with all his knowledge he did not succeed in making it work, the only reasonable conclusion is that at which Lord McLaren arrived, namely, that the machine had not been published in a practicable form.

In this action the validity of Edison's patent was not seriously disputed, the chief defence was a denial of infringement.

Having successfully passed this ordeal, the Bell patent was destined to undergo another. In the trial in London of the *United Telephone Co.* v. *Harrison, Cox, Walker & Co.*, 1882, 21 Ch. D. 720, the principal attack on the validity of the Bell patent was derived from the publication in England of a paper in the German language, by Legat on the telephone of Reis, and from the making of a machine according to that invention by Ladd, an optical instrument maker in London. The machine of Reis is shewn under those of Bell and Edison. In the transmitter there is no carbon, but only a metallic contact. In the receiver there is no disc, but only a pivoted armature, held in its place by a spring in one form, No. 1, or else a simple electro-magnet without a disc in the other, No. 2. There is not the slightest doubt that the machine of Reis was intended to, was capable of, transmitting and did transmit speech, and that Edison knew of the paper in July, 1875. Machines were exhibited at the trial shewing that Reis' machine would transmit speech. But Fry, J., held that the Bell receiver with its diaphragm was a distinctly different machine from Reis' receiver, and on reflection few people will be disposed to disagree with that opinion. It is quite one

CHAP. III. SECT. 2.

The ingenuity of every invention is to be judged in the light of the state of public knowledge at the time it was made.

thing to read the description of Reis' machine in the light of existing knowledge, and another to read it as it must have appeared to those who read it before it was shewn to be capable of being practically worked.

As to the receiver of Edison, with its carbon "tension regulator," it was not practically affected by Reis' transmitter. But the patent was declared invalid on the ground that it not only contained the transmitter, but that the complete specification also contained the phonograph, which had not been described in the provisional, and thus the patent was void for disconformity. It is not often that two patents come into Court containing three such splendid inventions as the disc telephone, the carbon transmitter, and the phonograph. Ultimately Edison had to disclaim the phonograph, after which almost all the actions brought by the United Telephone Company against infringers were successful.

But Reis must be regarded as the true inventor of the telephone. He lived to see his invention ridiculed and his papers refused in the local scientific papers of his day. Shortly before his death he closed his journals thus: "As I look back upon my life I can say indeed with the Holy Scriptures that it has been labour and sorrow." He died a poor schoolmaster at the age of 43.

The interest of the two cases above cited is to shew that anticipations must be read in the light of the knowledge at the time, not of that subsequently acquired, and that the Court is always reasonably careful to endeavour to support an invention which, though it may have been foreshadowed, has yet by the patentee been for the first time rendered a practical success.

3. The use of an old machine or thing for a merely analogous purpose or in an analogous way is not the subject to a Patent.—This follows from what has been already said as to the ingenuity required, in order that an invention may be the proper subject of letters patent. For by an analogue in patent law we mean something so similar as to be a merely obvious adaptation. A few examples may serve to illustrate this. A patent was granted for wheels for railroad carriages, made by introducing a rim of some elastic substance between the felloe and the tyre. It was shewn that the wheels had been used before for ordinary carriages: "Plaintiff says that the wheels made by the alleged anticipations were never applied to railways at all. This opens the question whether a man who finds a wheel ready made to his hand, and applies that to a railway, shall get a patent. . . . It would be a very extraordinary thing to say, that because all mankind have been accustomed to eat soup with a spoon, that a man could take out a patent because he says you might eat peas with a spoon. . . . You cannot have a patent for applying a well-known thing. . . . to an operation which is exactly analogous to what was done before. . . . It is like sweeping a new carpet with an old broom" (*per* Abinger, C.J.): *Losh* v. *Hague*, 1838, 1 W. P. C. 207; see also *Bailey* v. *Roberton*, 1878, L. R. 3 App. Cas. 1079.

See sections 5–8, pp. 94–133, for examples of decisions upon the necessary quantum of ingenuity.

Patent for preserving meat.

It must be remembered, that the question whether a new use is merely analogous to old ones, or whether it required invention to discover, is one of fact, depending not upon abstract considerations, but upon the state of the arts and the nature of the case.

It is sometimes said that no patent can be granted

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The use of an old machine or thing for a merely analogous purpose or in an analogous way is not the subject to a patent.

The use of an old material for a merely analogous purpose is not patentable.

for the new use of an old material. Thus, Wightman, J., is reported to have said: "I entertain a strong opinion on this question as to whether a mere application can be made the subject of a patent, for when once you have got a material you may apply it as you think fit: *R.* v. *Cutler*, 1847, M. P. C. 124, 14 Q. B. 372, n. From the case, however, it is quite clear that the judge was speaking of applications to analogous purposes only, and a similar remark applies to the judgment of Maule, J., in *Bush* v. *Fox*, 1854, M. P. C. 166; *Tetley* v. *Easton*, 1852, 2 C. B. (N.S.) 706, 26 L. J. C. P. 269. The case of *Ralston* v. *Smith*, 1865, 11 H. L. Cas. 223, 20 C. B. (N.S.) 28, is usually cited in support of the proposition, that when a material is common property it may be used for any purpose. This was an invention for improvements in embossing and finishing woven fabrics, and in the machinery employed therein. The specification as amended claimed the employment of rollers driven at a greater speed than the "bowl." "Although the patentee may have discovered how to use the machine more beneficially than the owner knew, he has no right to take a grant which virtually prohibits the owner from an existing right over his own property" (*per* Erle, C.J.) 9 C. B. (N.S.) 117. This view was confirmed in the House of Lords by Lord Cranworth: "It is not every useful discovery that can be made the subject of a patent, but you must shew that the discovery can be brought within a fair extension of the words, a 'new manufacture.' Now, how is it possible that this can be a 'new manufacture'? I, as a manufacturer, have my roller, which I am in the habit of rolling upon my bowl (if that is the proper expression), the fabric passing between the two at equal velocities. Then I can impress any

Ralston v. Smith.

pattern upon it. I have my roller without any pattern engraved upon it; I can impress that at an unequal velocity and it will calender. But I do not do these both at the same time, because I suppose that in doing so I shall tear my fabric, and I rightly suppose so till the plaintiff makes the discovery that there is one particular sort of pattern which may be produced without tearing the fabric. Now, that is a very useful discovery, but it would be a strange thing to say that this is a new manufacture, and that therefore I am to be deprived of the most useful way of using my roller." If this decision meant no more than that there can be no patent for the use of an old machine in a manner analogous to that in which it had been used in the past, the decision would accord with all the other cases, but it seems very doubtful whether the new use here proposed was a mere analogue; and it is to be noticed that Lord Westbury, who gave judgment in the case at the same time, based his reasoning upon very different grounds: "I should have thought that the patentee might have maintained a patent for a new combination, if he had put his invention upon this ground, that he was the first person who discovered that the circular grooved roller would answer by one process the double operation of calendering and imprinting the fabric," and he based his decision on the insufficiency of the specification.

The use of an old machine or thing for a merely analogous purpose or in an analogous way is not the subject to a patent.

Care to be used in interpreting this judgment.

Lord Westbury's view.

In *Patterson* v. *Gas Light & Coke Co.*, 1875, L. R. 2 Ch. D. 812, 834, the patent was in substance for a method of using successive lime purifiers for gas. The old method was to pass the gas through lime to remove the carbonic acid and sulphur, and then through oxide of iron. The patentee did not alter the apparatus, but only advocated the use of it so as not to allow any

Compare with Dowling v. *Billington*, *post*, p. 114.

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The use of an old machine or thing for a merely analogous purpose or in an analogous way is not the subject to a patent.

The more efficient use of old methods will not support a patent.

Compare with Badishe Anilin Fabrik v. *Dawson*, 1889, *post*, p. 114.

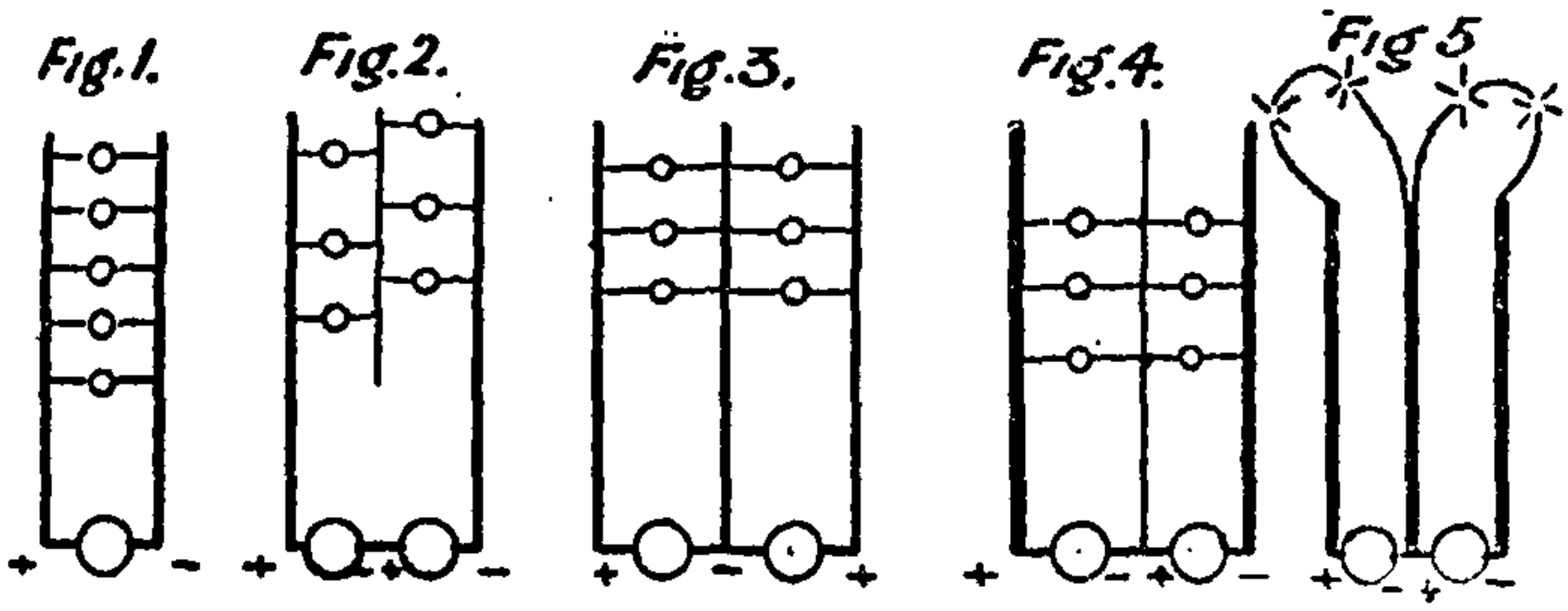
post, p. 118.

carbonic acid to enter the last lime purifier, as by doing so it liberated sulphur from the lime and sent it into the gas again as fast as the lime took it out of the gas. The method of doing this simply amounted to keeping the purifiers more clean, and emptying their contents more often. James, L.J., said: "No one has a right to prevent a workman from using care to keep his tools in the most efficient state; no one has a right to prevent a manufacturer from cleansing his vessels and throwing away their useless contents whenever he likes, or to ask him his motives and intentions for doing so. . . . It really only amounts to a direction to be sufficiently liberal in the use of the caustic lime in the first stage." The decision was affirmed in the House of Lords, on the ground that a man is not entitled to a patent for discovering the reason of a process which was empirically used before. In *Kay* v. *Marshall*, 1841, 2 W. P. C. 82, Lord Cottenham says: "If the patentee has discovered any means of using the machine which the world had not known before the benefit of, that he has a right to secure to himself by means of a patent, but if this mode . . . was known before, the plaintiff cannot deprive them of having the benefit of that which they enjoyed before." These cases must, however, not be interpreted as meaning that a really new step in an old process, or a really new mode of using an old machine or article, is not patentable. The fair test is whether the patent is for "the use of a well-known machine to a merely cognate purpose": *Croysdale* v. *Fisher*, 1884, 1 R. P. C. 19. In *Muntz* v. *Foster*, 1843, 2 W. P. C. 92, the patent was for a special alloy of 80 parts of copper and 100 of zinc, which afterwards became known as Muntz's metal. It had the peculiar property of bearing rolling at a low red

The use of an old machine or thing for a merely analogous purpose or in an analogous way is not the subject to a patent.

heat. Zinc and copper, when alloyed, make brass, and it was argued that this was only a sort of brass, but Lyndhurst, C., said: "I do not think that the circumstances of shewing that . . . . infinitely varying combinations must have been made . . . . or the proportions combined for another and different purpose . . . . destroys the patent."

The case of *Penn* v. *Bibby*, 1866, L. R. 2 Ch. App. 136, will illustrate this. Wooden bearings for grindstones and mill wheels were of course old. The plaintiff proposed a bearing for a screw propeller. The bearing was larger than the shaft, and contained ribs of wood fastened round the inside, so that the shaft turned in them, and was lubricated by the water that entered by the interstices between them. The patent was held valid.



This important principle is also well illustrated by *Hopkinson* v. *St. James' and Pall Mall Electric Light Co.*, 1893, 10 R. P. C. 46. The plaintiff's patent was for a pressure regulator, and also for what is known as the "Three wire system" of laying electric mains. The interest of the case was entirely confined to this latter which we shall now proceed to describe. No electric machine generates electricity, properly speaking: it only causes electricity to "move on" as water is pumped by a pump. The work-doing or lighting power of an electric

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The use of an old machine or thing for a merely analogous purpose or in an analogous way is not the subject to a patent.

current, like the work-doing power of a current of water depends on its quantity, but also on its pressure, and by using high pressures, whether with water or electricity, we can drive machinery by means of much smaller and more economical wires or pipes, than we should have to use if the pressure were smaller. Hence high pressures admit of the use of small wires to convey the same amount of working power as large wires with low pressures.

Prior to the plaintiff's patent, incandescent lamps, which, unlike arc lamps, require to be fed at a constant pressure, had been fed with electricity by three different systems of "parallel lighting." First, there was the simple parallel system (Fig. 1.), where the lamps were simply shunted across the conducting cables. And as these lamps usually work at about 70-100 "volts," this was the pressure usually employed, and was sometimes simply duplicated (Fig. 3). The object of this was to enable the two sides or wings to be worked independently, so that one could be out and its dynamos stopped, while the other was alight. The mains were all equally thick. Of course a considerable fall in pressure took place at a distance from the dynamo, just as happens in gas or water mains.

In order to be able to use more economical mains and a more uniformly distributed pressure, the first improvement suggested was to arrange the lamps in pairs, in series, so as to be able to double the pressure (Fig. 2). This effected some saving, for the size of the mains could be reduced to one half; it was called the compound parallel system. But it was subject to the defect that the current had to flow through the lamps on the left side to reach the lamps on the right side, and consequently, if many were turned out on the left side, the electricity in

The use of an old machine or thing for a merely analogous purpose or in an anologous way is not the subject to a patent.

its struggle to get through, overworked the remainder, while, as a less total got through, all the lamps on the right hand were under-worked. To cure this difficulty, the plaintiff ingeniously suggested the arrangement in Fig. 4; and, to use the words of Romer, J., "the thing was done." It was really only Fig. 3, but with one of the dynamos reversed the other way. The effect was, that if some of the lamps on the left-hand side were turned out, and the current needful to supply the right-hand side was diminished, it was made up by the flow of the necessary extra quantity along the middle wire, and as this merely differential quantity was small, it needed but a thin wire.

Of course, if the central wire were thick, the system could also be worked in wings, like Fig. 3, but then the great saving produced by a thin central wire, would be lost. It was objected that the plaintiff had not confined his patent to parallel lighting, but this was decided in his favour. So far the plaintiff's patent was clearly valid. But several anticipations of the exact arrangement were produced. First, one at Sauchie Hall, which would have been a clear anticipation, but that the proof broke down that the middle wire was conducted back to join the middle point between the dynamos. In default of which the arrangement was no more than Fig. 2. Two others were produced, relating to arc lamps in series as in Fig. 5, with the middle wire properly brought back and with the dynamos properly placed. Here was apparently a clear anticipation, but it was held not to be one, because the persons who had thus used it, had done so, not with the intention of regulating the light and using small mains, but with the intention only of working the lamps in "wings," either one or the other as they pleased, *and they manifested this by using a thick centre return cable.* This

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The use of an old machine or thing for a merely analogous purpose or in an analogous way is not the subject to a patent.

post, p. 103.

post, p. 111.

shewed they had not understood the plaintiff's plan, nor anticipated it, and because they had only unwittingly obtained a result of the value and very nature of which they were ignorant, their operations were held to be no anticipation. A point also arose on the construction of the specification as to whether the plaintiff had really confined it to "parallel" lighting, which was decided in his favour. See also *Bamlet* v. *Picksley*, 1875, Griff. 40; *Poupard* v. *Fardell*, 1869, 18 W. R. 59, 127; *Siddell* v. *Vickers*, 1888, 5 R. P. C. 81, 416; 7 R. P. C. 292.

4. The substitution in a machine or process of something which is afterwards discovered to be a mere analogue or mechanical equivalent may form the subject of a good patent, if in the state of knowledge at the time of the patent, the thing substituted was not known to be an analogue.—In some future time discoveries will be so co-related that every scientific fact will perhaps seem to be a mere outcome of some other. Meantime we must judge of inventions by the light approved by the science of the day; and, if this be admitted, the proposition stated above will follow. For every patent must be judged by the state of knowledge at the time it was taken out: *United Telephone Co.* v. *Harrison*, 1882, 21 Ch. D. 720; *Crossley* v. *Beverley*, 1819, 1 W. P. C. 107; *Lewis* v. *Marling*, 1829, 4 C. & P. 57, 10 B. & C. 27: see also "Construction of the Specification," Chap. XI., sect. 3.

post, p. 210.

5. If there be invention the degree of it may be slight.—It has been explained that, provided the Crown be not deceived, the amount of the consideration on which the patent is expressed to be granted, may be slight. Hence, if an invention possesses even a slight

ante, p. 70

amount of ingenuity the patent for it will be supported, for the Court will not weigh the value of the invention. Its only duty is to see not whether a patent is valuable, but whether it is valid. The most clear expression of this principle is found in *Hinks* v. *Safety Lighting Co.*, 1876, L. R. 4 Ch. D. 615, though an examination of the invention itself leads to the conclusion that it was more valuable than seemed to be supposed by the Master of the Rolls.

If there be invention the degree of it may be slight.

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It was for two sorts of paraffin lamps, viz., that now known as the duplex lamp, and a sort of paraffin argand

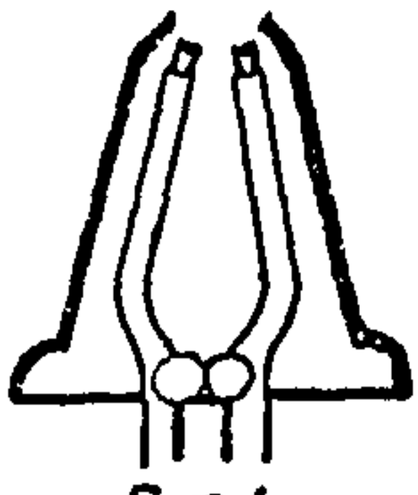

Fig. 1.

Fig. 2.

Fig. 3

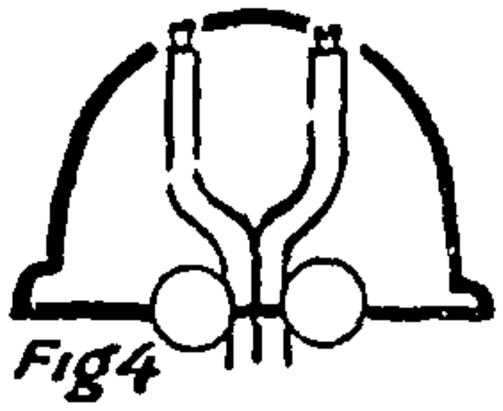

Fig 4

burner, with a horizontal disc of metal in the centre of the flame. The reasons of the utility of the duplex burner are as follows. In order to secure good combustion, it is necessary to bring the air well into contact with every part of the flame. This necessitates the use of thin flat wicks. In order to get light enough, without making the wick too wide, and thus rendering the chimneys too flat, two wicks are placed side by side, and in order to secure good combustion, they are separated by a ridge of metal, which directs the rising current of heated air well into the flame (Fig. 4). Or, again, in order to get the necessary width of wick it may be curled round into a circle as in the argand lamp, in which case in order to direct the air on the flame, a

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If there be invention the degree of it may be slight.

horizontal disc of metal is placed above the wick in the centre of the flame (Fig. 3).

In 1871, Messrs. Hinks having threatened to stop the sale by Rollins of paraffin lamps having two wicks with the flames projecting through one hole, Rollins obtained an injunction restraining these threats: L. R. 13 Eq. 355. In 1876, Hinks brought an action against the Safety Lighting Company for infringement of his patent. The anticipations set up by the defendants were Halvorsen's American patent for a double wick, and Little's English patent for five round wicks with the flame coming up through one hole (Figs. 3 & 4). In this action it became necessary for Hinks to change his ground and no longer assert that his patent was for a two-wicked paraffin lamp, but for a paraffin lamp with two wicks and two flame holes. Jessel, M.R., after commenting on the position previously taken up by the plaintiff, decided that this was the true interpretation, and found that part of the patent valid. As to the argand burner with the disc (Fig. 2) he treated it as "a trumpery matter," and inasmuch as no utility was proved, and the specification and drawing did not shew the holes through which the air entered to feed the lamp, he declared the whole patent invalid. In the course of his judgment he laid down the law that a slight amount of ingenuity will support a patent: L. R. 4 C. D. 615. *The American Braided Wire Company* v. *Thomson*, 1889, 7 R. P. C. 47, is another instance of a very slight amount of invention being held sufficient.

post, p. 114

"It may be the result of a lucky discovery": *Crane* v. *Price*, 1842, 1 W. P. C. 411; *Liardet* v. *Johnson*, 1778, 1 W. P. C. 54; *Haslam* v. *Hall*, 1886, 5 R. P. C. 1; *Hayward* v. *Hamilton*, 1879, Griff. 115.

post, p. 112

Cases of sufficient ingenuity to support the patent.

6. Examples of Cases in which the Invention was held sufficient.—*Huddart* v. *Grimshaw*, 1803, 1 W. P. C. 92.—A patent for rope-twisting held valid as a new way of doing an old thing.

Hall v. *Jarvis*, 1822, 1 W. P. C. 100.—Silk, cotton, and woollen articles and stockings had previously been freed from projecting fibres by passing them through hot rollers, or else by singeing them (when placed on a board or a wooden leg) with flames of wood, charcoal, or coal. Bellows had been used to force the flame into the interstices. Plaintiff's patent was for the use of a flame of gas with a chimney to draw it through the interstices of cotton-lace goods. Strong evidence of utility was given and the patent supported.

ante, p. 75.

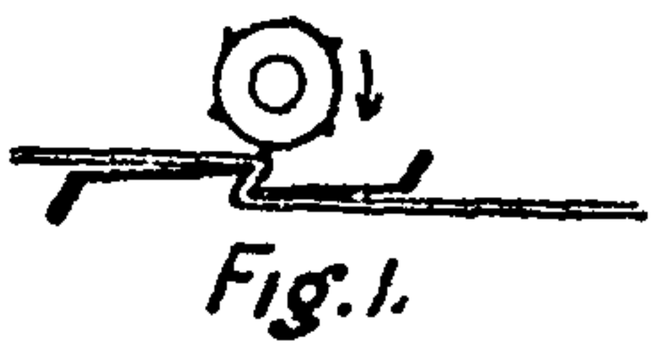


Fig. 1.

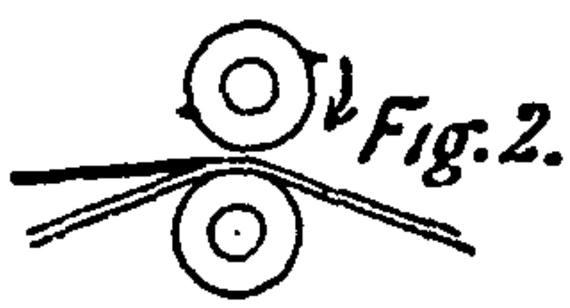


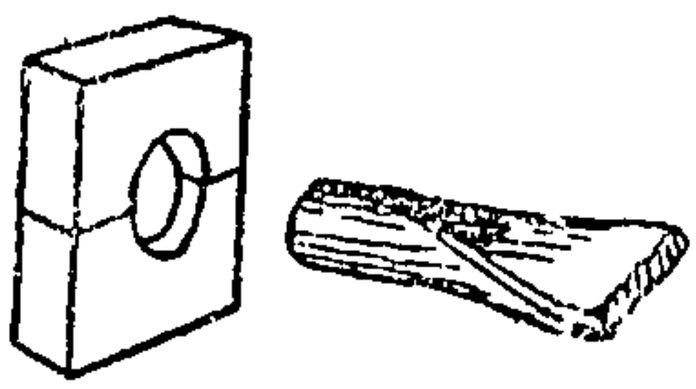
Fig. 2.

Lewis v. *Davis*, 1829, 1 W. P. C. 488.—This was a patent for shearing cloth from list to list. Fig. 1 shews the plaintiff's method. The cutter consisted of a roller with a number of triangular steel wires wound spirally on it. The cloth was passed between two springs, which brought it close up to the cutters. Fig. 2 represents the infringement of the defendant. It was proved that the shearing of cloth from list to list was old, also that cloth had been previously sheared from end to end by means of circular cutters. The defendant had previously been in partnership with the plaintiff, the utility of whose invention was endorsed by the fact that he had made a large fortune by means of it. The jury found for the plaintiff, and the verdict was supported.

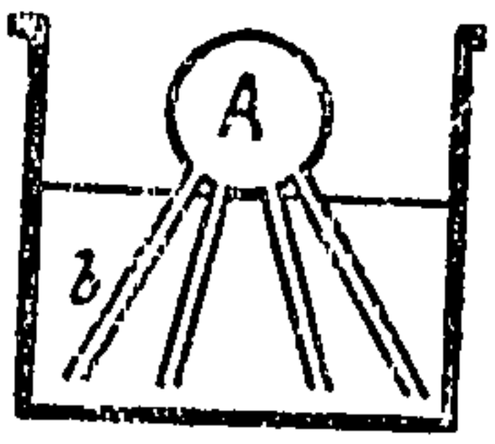
CHAP. III. SECT. 6.

Cases of sufficient ingenuity to support the patent.

Russell v. *Cowley*, 1832, 1 W. P. C. 457.—The plaintiff's patent was for a method of making gas piping or other iron tubes by taking a strip of metal heated in a furnace, and bending one end into a tube. It was then drawn through a pair of dies and thus welded into a tube. In anticipation, it was proved that a method had been proposed for welding gun-barrels by putting them on a mandril, and then passing them between grooved rollers. This, as might be expected, was held to be no anticipation.



Hullet v. *Hague*, 1831, 2 B. & Ad. 370.—A prior patent, to which no drawing was attached, had described a method of evaporating sugar, by causing hot air to bubble through it by means of pipes pierced with orifices, put at the bottom of the pans. The plaintiff's patent was for a special arrangement for carrying this out, as shewn in the figure where A is the air pipe, and *b b* are jets, or tubes leading from it. The patent was supported.



Cornish v. *Keene*, 1837, 3 Bing. (N.C.) 570, 6 L. J. C. P. 225.—This was an action on a patent granted to Sevier in 1833. By a prior patent in 1831 Sevier had disclosed the curious property of india-rubber, that if stretched while heated, and allowed to cool, it remained stretched, but that if it were again heated it shrank back and recovered its elasticity. The patent sued on was for weaving threads of such stretched india-rubber in its quiescent state among the warp or woof of woven fabrics, and then heating it so as to shrink the india-rubber and contract the fabric, which thus became elastic to an

Cases of sufficient ingenuity to support the patent.

extent limited by the original size of the threads in the warp or woof, and which prevented the india-rubber being broken by undue stretching. It was shewn that india-rubber threads, both covered and uncovered, had been woven before, but never combined with threads so as to limit the elasticity. The patent was held valid.

Crane v. *Price*, 1842, 4 M. & G. 580, 1 W. P. C. 393. —The use of hot blast for smelting iron was old, also the use of anthracite coal. A combination patent for using them together was held good; see, however, remarks on this case in *Murray* v. *Clayton*, 1872, L. R. 7 Ch. 584, and *Clark* v. *Adie*, 1877, 2 App. Cas. 335. *ante*, p. 57.

Allen v. *Rawson*, 1845, 1 C. B. 551.—Patent for felt-making claiming (*inter alia*) the use with rollers, of soap and water; soap and water had been used before, and rollers with acidulated water had been used before. Held, a good patent.

Newton v. *Vaucher*, 1852, 21 L. J. Ex. 305.—Defendant had patented the use of soft metal, preferably made of zinc, tin, and antimony, in order to make bearings, pistons, and other moving parts of pumps, hydraulic machines, and steam engines, water-tight, or steam-tight. Plaintiff afterwards found that linings of britannia metal, pewter, or any alloy of which block-tin was the basis, would diminish the friction of bearing surfaces, the linings being held in place by rims, or fillets, or other suitable means. His patent was held good in *Newton* v. *Grand J. Canal Co.*, 1846, 20 L. J. Ex. 427. In 1852 he brought an action against the defendant. Held, that his invention was sufficiently distinct from that of the defendant, though the same sorts of metal were used for different purposes.

Walton v. *Potter* and *Walton* v. *Bateman*, 1841, 1

CHAP. III. SECT. 6.

Cases of sufficient ingenuity to support the patent.

W. P. C. 585.—Cards are a sort of brush with metal bristles fixed into what is termed the fillet, and which corresponds to the back of a hair-brush, for scratching up wool, cotton, and other substances. It is needful, however, to fix the bristles not rigidly, but to some slightly flexible fillet, and leather had been generally used up to the time of the Walton's patent, by which, in 1834, he proposed to use a simple slice of native india-rubber backed with brown holland for the fillet, for the purpose of giving it greater elasticity. An action was brought on this patent in 1841 against Potter, and in 1842 against Bateman.

In 1825, Hancock had patented the use of india-rubber dissolved in naphtha and turpentine, mixed with cotton and other substances, to make a flexible substitute for leather. There was some evidence that he had used it for cards, but probably in a merely experimental way. The juries found for the plaintiff in both actions, and the Courts supported their finding on the ground that the essence of the plaintiff's invention was the application of the elastic property of india-rubber, whereas Hancock's mixture, even if it could have been shewn to have been used for cards, had merely secured flexibility, and even destroyed the elasticity, and that the plaintiff's invention was, therefore, for an ingenious application of an old substance to a new purpose. The patent was tried again in 1842 on a *scire facias*, in which, in addition to the previous evidence, it was also shewn that Hancock had disclosed the use of his invention for making cards, at a public scientific meeting in 1826. The jury found this time against the patent. A rule for a new trial was applied for, but the proceedings were ultimately compromised (see *Berley v. Hancock*, 1856, 6 De G. M. & G. 420).

Cases of sufficient ingenuity to support the patent.

Bovill v. *Keyworth*, 1857, 7 E. & B. 725, 3 Jur. (N.S.) 817, —A blast had been used to convey the matter from between mill-stones, and an exhaust had also been used. A combination of a blast with an exhaust was held good; see the criticisms on this case in Wynne's Bovil Patents, Lond. 1873, p. 47.

Hills v. *London Gas-light Co.*, 1860, 5 H. & N. 312, 29 L. J. Ex. 409; *Hills* v. *Evans*, 1862, 31 L. J. Ch. 457, 8 Jur. (N.S.) 525.—The property of hydrated oxide of iron in absorbing sulphuretted hydrogen was known, and also that the sulphuret of iron so formed would be re-oxidised if exposed to the air. Held, that a patent might be taken out for the *application of these principles* to gas manufacture.

Betts' Patent, 1 Moore's P. C., 1862, at p. 60.—"This is a good illustration of the distinction . . . between the merit of ingenuity and the merit of utility. Dobbs' specification may have given the petitioner the idea of the possibility of uniting the two metals tin and lead, and may thus have deprived him of the merit of originality, but in Dobbs' hands the discovery was barren, the petitioner, who . . . gave it a practical application, is the real benefactor to the public" (*per* Lord Chelmsford): see *Betts* v. *Menzies* cited, Chap. V., sect. 9. *post*, p. 154.

Spencer v. *Jack*, 1864, 11 L. T. (N.S.) 242.—Patent for surface condensers for engines. "A new and useful combination of things previously well known, may be the subject of a patent" (*per* Westbury, L.C.).

Young v. *Fernie*, 1864, 4 Giff. 577, 12 W. R. 901.—Patent for distilling paraffin oil from cannel coal and getting solid paraffin from it. Held good, for previous experiments upon shale coal, and even on cannel coal, had been used to make small quantities of

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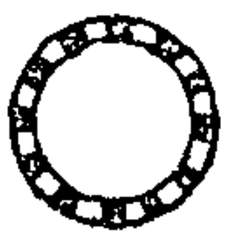
paraffin wax, and were little more than "ornaments of a museum."

Macintosh v. *Everington*, 6 Rep. Arts. (N.S.) 317, 365.—Patent for putting india-rubber solution as a cement between two fabrics held good, notwithstanding that the use of india-rubber in other states, and other substances, for the same purpose, was well known.

Dangerfield v. *Jones*, 1865, 13 L. T. (N.S.) 142.—Patent for a method of bending walking-stick handles. After being softened in moist sand they were bent over a hollow mandril heated from the inside with a gas-jet and clamped down. It was proved that a band of steel had been used to bend sticks made out of sawn timber, the band being placed externally over the bend, and the stick and band being then heated externally. A *solid* mandril had also been employed for bending natural twigs after they had been taken out of moist sand. Defendants had taken out a license to use plaintiff's machines. Held, that this was evidence that defendants thought it a new invention. Patent supported.

Penn v. *Bibby*, 1866, L. R. 2 Ch. App. 127.—Grind-stones and water-wheels had been made with shafts working on wooden bearings. Plaintiff patented an invention (see the Fig.) for diminishing the friction of screw-propeller shafts by introducing strips of wood into the bearings of the shafts of screw and submerged propellers, so that the water constantly wetted the wood, and lubricated the bearing. It was shewn to be useful, and supported as displaying invention.

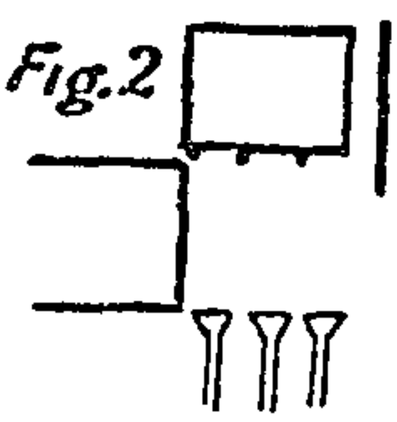


Murray v. *Clayton*, 1872, 7 Ch. 570, 10 Ch. 675, n., 15 Eq. 115.—The patent was for a method of making bricks. A tape of moist clay being squeezed forward from a

kneading machine, a piece was cut off it, sufficient to make a number of bricks, by a wire moved transversely, and the part so cut off rested on a table. It was then pushed transversely off this table on to a movable board by a row of pistons. On its passage it encountered a series of equidistant vertical wires, which cut it into bricks, which were then removed, board and all (Fig. 2). An anticipation was proved which was very similar (Fig. 1), only instead of the cut-off mass being pushed off the table on which it rested, the whole table was slid transversely encountering a row of vertical wires which cut the bricks up, which had to be removed from the table by hand. The table was then slid back to its place. The patent was considered to have a very narrow ambit, but to be valid for the exact combination described, and useful as avoiding the removal of the bricks by hand, which was necessary in the case of the anticipation.

Fig. 1.

Fig. 2



Bamlett v. *Picksley*, 1875, Griff. P. C. 40.—Where it was known that macaroni could be pressed through dies into pipes, *semble*, a good invention to do the same with red-hot iron.

Hinks v. *Safety Lighting Co.*, 1876, L. R. 4 Ch. D. 615. *ante*, p. 95.
—An inventor had patented the combination of two wick cases with a double-slotted cone, which was new, though contrivances very closely resembling it had been used before. Jessel, M.R., said: "When a slight alteration in a combination turns that which was practically useless before into that which is very useful and very important, judges have considered, that though the invention was

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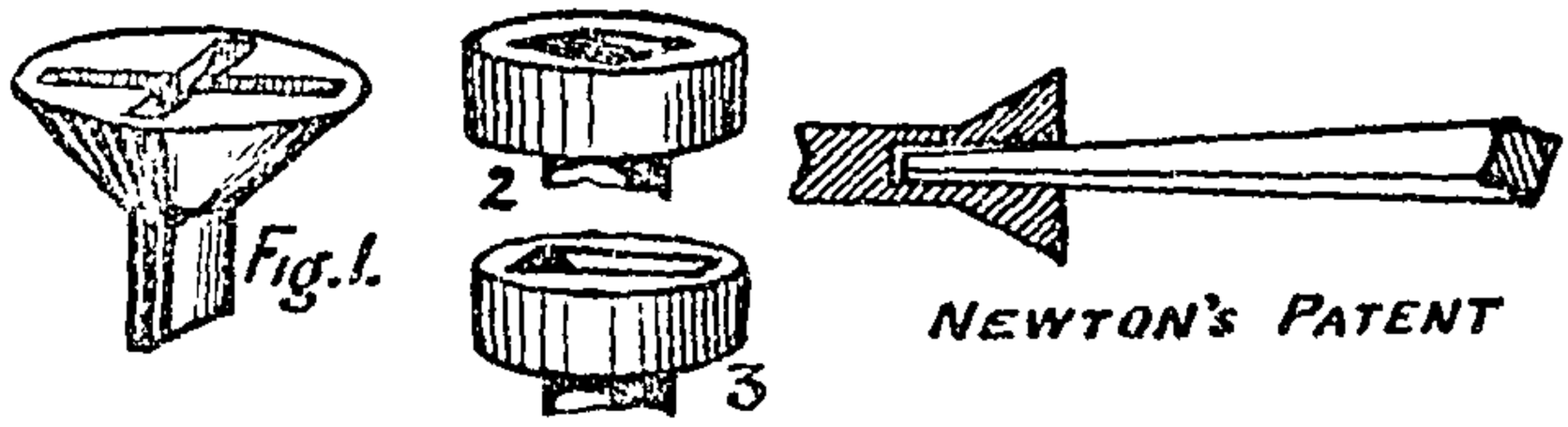
small, yet the result was so great as fairly to be the subject of a patent, and so far as a rough test goes, I know no better." The patent was, however, adjudged bad because it was not properly described in the specification.

Frearson v. *Loe*, 1878, L. R. 9 Ch. D. 48.—This was a patent for a new form of head for carpenters' screws, consisting of one or more grooves milled out with a circular cutter, so as to be of the shape that would be produced by pressing the edge of a coin into soft wax, but not so as to extend beyond the head of the screw. Sometimes two such nicks were cut at right angles to



one another (Fig. 1). The screw-driver of course had a rounded point. It was claimed that by this arrangement the head of the screw was stronger. Anticipations, as shewn in Figs. 2 and 3, were proved, and also a patent by Newton, for a circular hole in the screw-head, actuated by a square tapered screw-driver. The Master of the Rolls declared the patent valid.

Sykes v. *Howarth*, 1879, L. R. 12 Ch. D. 826, 48 L. J. Ch. 769.—The introduction of wide spaces between the cards on a roller so as to produce an exhaust current of air, supported.

Hayward v. *Hamilton*, 1879, Griff. P. C. 115.—Prisms for deflecting light were old; so also were glass pavement-lights of rectangular shape, and bull's-eyes (Fig. 1); and in ships prismatic deck-lights of glass had been used (Fig. 2), but not for giving definite direction