Patentable Invention

AND

SCIENTIFIC EVIDENCE:

WITH AN

INTRODUCTORY PREFACE.

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"Whate'er is best administer'd, is best."—POPE.

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INTRODUCTORY PREFACE.

It may astonish some persons to find opinions such as those embodied in the following essay put forth at a time when the cry for Patent Law Reform is louder than usual. And perhaps it may surprise them still more to be told that nothing therein proposed is contrary to judicious reform, but rather calculated to advance it.

True it is that no express allusion is made to the points which have lately been prominently discussed: such as, the mode of granting patents; their cost; the period from which they should bear date; the question as to the regulation of hearings before the Attorney and Solicitor General; the depositing of particulars of inventions; the regulation of the Enrolment Office for specifications; the publication of all specifications; the preparation of indexes for public reference, &c.

All these and other points are left without mention; but this does not prove them to be ignored. They are omitted simply because another subject, to which their express mention would be irrelevant, is treated. Changes

are not proposed in the law, but in the practice, relating to patent causes. And I desire to be understood as proposing such changes without prejudice to the full discussion of the above enumerated subjects, and of others connected with them; and also particularly without prejudice to the question of little patents, meaning by that expression patents for a short term of years at a small cost—patents for inventions (included in the original statute), such as are intended by their authors to be protected by registration under the Act 6 & 7 Vict. c. 65.

In referring to this Act, I submit that patentable invention, such as it is represented in the following essay, is entirely distinguished from copyright of designs relating to "any new or original design for any "article of manufacture having reference to some pur- "pose of utility, so far as such design shall be for "the shape or configuration thereof, and that whether "it be for the whole of such shape or configuration "or only for a part thereof" (*a*).

Mr. Carpmael says, in his pamphlet on Registration of Designs, 3rd edition, p. 4, "It may be broadly "stated that an invention for which a patent may be "secured can in no way be protected under either of "the Registration Acts; and, on the other hand, the "invention of a design which can be protected under

(*a*) See the Act, clause 2.

" the Registration Acts cannot be made the subject " of a patent."

The truth of this dictum depends upon whether the copyright of designs can be said to extend to "*any* manner of new manufactures."

My version of patentable invention under this definition, interpreted by the authorities, clearly excludes copyright of designs as defined by the Act 6 & 7 Vict. c. 67; so that I may support the dictum thus: —Patentable invention is a manufacture, and nothing else. I deny copyright of designs according to the Act 6 & 7 Vict. c. 67, to embrace a manufacture; therefore a patentable invention, being a manufacture, cannot be protected by a registration. On the other hand, a design, not being a manufacture, cannot be protected by a patent.

Now, against this view nothing is urged but the practice of receiving inventions to be registered which may be brought within the defining terms of the statute relating to patents. But whence comes the authority for including such inventions within the terms of the Act 6 & 7 Vict. c. 67? No judge has decided that the terms of this Act include *any* manner whatever of new *manufacture*; so that the point is unsupported by authority. It rests upon nothing but the practice of the Registrar, who of course disclaims any

legal authority as a judge of what is the scope of a registration.

Persons go on perilling their inventions by registering them, just trusting to their non-obstruction by any legal dictum pronounced against such inventions; but there may come unexpectedly an end to all this, just as by the decision of *Brown* v. *Annandale* all former practice as to Scotch and Irish patents was at once changed. It was thought that this decision, occasioning as it did so great a change in the constituted order of things, would not for that reason be allowed to stand as law; but subsequent experience tells another tale. The principle indeed of allowing expediency to govern settled law is highly to be deprecated, and will not, I trust, be allowed to obtain in the present instance.

The present work, then, does not claim to supersede the consideration of other questions of patent reform; neither does it interfere with the books already written relating to patents, but rather suggests points which may assist in making them better understood. And this remark more particularly applies to those two highly useful works, the Reports of Patent Cases, by Mr. Webster and Mr. Carpmael. These two works are a boon to the patent world so far as they have gone; and it is to be hoped that

the writers will continue their valuable labours in this direction. On a basis of accurately reported cases many principles calculated to produce uniformity of construction of patents may be founded, and in this manner much additional security given to patent property.

The essay to which I am desirous at present of drawing attention contemplates the advancement of this desirable end. By dealing only with first principles, it is necessarily silent upon many points which might be useful to persons otherwise uninstructed in patent questions; but still it is to be remembered that first principles are broader and more permanent than matters of practical detail, and that should they be rightly apprehended, points of detail may be afterwards readily acquired by means of suitable instruction. On the other hand, if we are wrong in first principles, we cannot get right without retracing our steps from the beginning.

These suggestions may serve to explain why I have thought it desirable to give my views to the world in the form in which they appear in the following essay; also why the subject is not treated with more reference to distinctions between proceedings in law and equity and other points of a practical nature. All these appear to me to be matters that, if expressly treated, would tend to encumber a work on first prin-

ciples, whereas at present they are tacitly referred to without breaking in upon the running statement of principle intended to govern them.

I do undoubtedly entertain a strong conviction of the paramount importance of treating patent reform as a question relating to change of practice rather than of essential law, believing the settled points to involve a body of legal doctrine amply sufficient for adaptation by intelligent minds to the cases likely to arise.

"The mischiefs that have arisen to the public from inconsiderate alterations in our laws are too obvious to be called in question; and how far they are owing to the defective education of our senators is a point well worthy the public attention. The common law of England has fared like other venerable edifices of antiquity, which rash and unexperienced workmen have ventured to new-dress and refine, with all the rage of modern improvement. Hence, frequently its symmetry has been destroyed, its proportions distorted, and its majestic simplicity exchanged for specious embellishments and fantastic novelties. For, to say the truth, almost all the perplexed questions, almost all the niceties, intricacies, and delays, (which have sometimes disgraced the English as well as other courts of justice,) owe their original, not to the common law itself, but to innovations that have been made

in it by acts of parliament, 'overladen (as Sir Edward Coke expresses it) with provisoes and additions, and many times on a sudden penned or corrected by men of none or very little judgment in law (*b*).'"

Our main dependence in patent law is upon the qualifications of the men who administer the law. No system of statute law, unaided by able administration, could do much towards meeting all the cases requiring to be dealt with in reference to patents.

The subjects are so varying, and the merits of the points in issue so much more identified with physical science and manufactures than with law, that a good administration of patent law consists mainly in a suitable adaptation of simple first principles of law to the material facts (more or less technical) of the case.

The abstract law of patents is happily concise, but yet not commonly apprehended. If persons professing to understand the law of patents would examine more closely the first principles on which this law is founded, and then study its application in the cases, they would see, I think, that it is susceptible of being adapted to any of the substantial questions incident to patent causes.

Mr. Webster says, "The forms of the early letters

(*b*) See Tracts on First Principles. No. 9. The Principles of Law, and their Exemplification in the Laws of England, p. 15.

patent, and the nature of the rights granted by and enjoyed under them, deserve more attention than they have usually received" (*c*).

Can any subject be fully understood unless its origin and growth be studied? When these are known, incidental matters are easily referred to their proper place in a given inquiry.

We do, then, most of all require that the administrators of the law of patents should understand its really essential principles, as hitherto recognised in the Courts, and that they should be assisted by adequate scientific evidence.

Judges have of late frequently adverted to their difficulty in analyzing and discovering the exact weight of the scientific evidence as at present offered. They see it to consist mainly in depositions of opinions from persons who have received *ex parte* instructions; and such opinions, although ably given, are from their very nature liable to defect as evidence.

Now a mere reference to this fact will sufficiently explain the reason why the subject of scientific evidence is spoken of, in the following essay, in such intimate connection with a right construction of patentable invention.

A theory is suggested as applicable to the determination of patentable invention, but the accuracy of its

(*c*) Webster on Letters Patent for Inventions, &c., note (*q*), p. 66.

application depends upon the accuracy of the facts in evidence in each case, just as—to use an analogy alluded to in Whately's Introduction to his "Elements of "Logic"—"no arithmetical skill will secure a correct result to a calculation, unless the data are correct from which we calculate." "Nor," says Whately, "does any one on that account undervalue arithmetic."

The defect in such case is not arithmetical, it exists prior to the exercise of arithmetic. And, in like manner, the proposed theory of patentable invention is not to be discredited by any inaccurate evidence brought into a case.

With regard to my proposals as to improved practice in relation to scientific evidence an objection may occur to some minds that they would increase expense by increasing the number of witnesses at each trial. One answer to this is, that the arrangement would tend to lessen the grounds for new trials by making the first one more complete than heretofore. Then, again, it is to be noted that I propose to employ persons competent to understand the merits (not simply the legal forms) of a patent cause, who shall in the first instance advise on the best mode of bringing the case before the Court and jury; and in this manner much unnecessary work might frequently be avoided in getting up the case for trial. Besides I look forward to increased simplicity in the form of pleading.

In addition however to all this, I believe we are yet far from having availed ourselves of the full benefit of the instrumentality of the Judicial Committee of the Privy Council; and it is probable also that, at some future time the Attorney-General's report may be given under circumstances that will tend to increase its practical significance.

Again, in reference to "little patents," I will avail myself of a suggestion by Mr. Newton, in his pamphlet on Copyright of Designs, (in a note, p. 25,) and indulge the hope that the County Courts may (when their practice has become more systematized) be found useful for trying some minor causes.

As regards what is said on the natural insufficiency of scientific tribunals for patent causes, this is without prejudice to any employment of scientific persons, whether in a separate or associated capacity, to assist inventors or capitalists with their scientific judgment. But such persons or associated bodies should have no legal standing, so as in any way to exercise functions similar to those of a judge.

And now I will conclude this preface by drawing attention to the powers already enjoyed by the officers of the Crown by the exercise of which they may improve the practice relating to patents.

Mr. Webster (in a note to his Reports of Cases, p. 8) says, "The most important change made since

"the earliest times and the Statute of Monopolies, "is the insertion of the clause into the letters patent "requiring the party particularly to describe and "ascertain the nature of his invention, and in what "manner the same was to be performed. The earliest "patent into which this clause appears to have been "introduced was one granted 1st April, 11 Anne; "its introduction was not on the authority of par-"liament, but on that of the law officer of the Crown."

Every one knows how much is involved in this step taken by a law officer of the Crown without express authority from parliament. And yet it was but an arrangement for securing a more effectual compliance with the requirements of the common law; for, as Mr. Webster says, (in the same note, quoted above,) "it must be remembered that, though at common law no such instrument (as the specification) was required to be enrolled, it was nevertheless an essential requisite that the party should be in possession of a mode of putting his invention into practice, for otherwise the patent would be void for false suggestion and failure of consideration."

With all the change involved in the requirement of a specification, it was but a mode of bringing the practice up to the theory of the common law, and no complaint has been made that the law officer of the Crown exceeded his powers in what he did,

neither that it was unreasonable to vest so much power in such a person.

Now the Attorney-General, with consent of the Solicitor-General, has just introduced a change in the practice of granting reports on application for patents, by requiring in every case particulars of the invention to be deposited. This is satisfactory, as leading to more thorough improvement of the practice, and as evincing a readiness on the part of the law officers of the Crown to exercise their powers when the need arises. A gradual improvement in this way, by steps without the parade, (and, I must add, the probable defectiveness,) of statute law would, in my judgment, be likely to work well. I have more hope of a good administration of justice from a good class of men being appointed to fill important offices, than from any multiplication of statutes. Statutes at best are but dead law, and we require for every-day purposes living law; this must be in the living administrator, and proceed from him in an adapted form.

While on this point, it may be well to suggest that the Statute of Monopolies does not hinder the grant of "little patents."

Clause 6 runs thus: "Provided also, and be it "declared and enacted, That any declaration before-"mentioned shall not extend to any letters patents and "grants of privilege for the term of fourteen years, *or*

"*under*, hereafter to be made of the sole working," &c.

Patents for a shorter term than fourteen years may be granted as the law stands, and the question of fees may be regulated by competent authority.

The patience of the reader has been much trespassed upon by this length of preface; but it appeared to me that it was desirable to point to the foregoing considerations as preparatory to a right understanding of my views in the following essay, lest it should be thought that in my anxiety to adhere to the old law I overlook many important questions of desirable reform.

I am indeed anxious that permanent principles should not be sacrificed through any temporary feeling of excitement, for the present unwholesomely stimulated by the prospect of the Great Exhibition. It is due to patent property that the legal foundation on which it rests should not be disturbed to meet a popular cry, which, like its predecessors, will only have its day.

Let improvement go on by all means, but let us carefully discriminate between the faults and the merits of our existing law and practice.

50, *Chancery Lane*,
November, 1850.

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to the soul, and the organization of matter required therein to the body. The force of the illustration consists in the fact that the individual man is distinguished essentially by his soul rather than by his body, although, while he is in life on earth, there is an indivisible connection subsisting between his soul and body. In a similar manner, patentable invention is recognisable by its principle, although necessarily embodied in an organization of matter capable of carrying the principle into practical effect. This theory applies to all patents of whatever breadth or narrowness, and is not calculated to stop improvements in manufactures, but rather to promote them by calling into existence such inventions as contain within them the germ of real improvement. Still the theory as stated, in an abstract form, is wide; and requires to be guarded from abuse, by looking well after the scientific evidence in patent causes.

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SCIENTIFIC EVIDENCE.

Reflections upon the scientific evidence in patent causes have proceeded from the Bench; the present system is therefore tested, but only under a particular aspect, and a remedy for some existing evils is suggested.

1. *Nature of Inquiry in Patent Causes.*

The substantial questions are, What is there *out of*, and *before*, the patent which anticipates it? and, What is there included *in* the patent as distinct from all that preceded it, and as covering a certain extent of manufacturing ground? The point of "novelty" in such an inquiry ought to be treated with due allowance for the difficulties of the patentee's position. Lowe's patent is referred to as an instance of extraordinary survival of proceedings by *scire facias*.

2. *Brief Statement of the Law, as to the Admissibility of Scientific Evidence.*

The specification contains the subject-matter of contention in all patent causes, and therefore the mode in which scientific evidence is applied to its contents is a matter of vital importance. Now this point is herein treated as important, principally by an accommodated reference to certain statements of received writers on evidence, relating to the admissibility of extrinsic evidence as applied to wills, which are documents in many respects analogous to specifications. The received mode of interpreting wills by the aid of extrinsic evidence may be adapted to the construction of specifications. The great point however, in reference to scientific evidence, is the means of knowledge in the witnesses.

PATENTABLE INVENTION

AND

SCIENTIFIC EVIDENCE.

INTRODUCTION.

Scientific evidence conflicting.

It is very common, in the course of patent causes, to hear remarks from the bench as to the conflicting nature of the testimony given by the scientific witnesses on either side.

Patent legal practice discredited thereby.

And seeing the prominence usually assigned to such testimony in the order of the whole evidence adduced, this fact has a tendency to throw discredit upon the branch of legal practice relating to patents.

Object of present essay.

Now the object of the present essay is to show that the essential law of patents is not rendered uncertain, in its principle of application, by any apparent difficulties arising from the particular form in which it has become usual to tender the evidence bearing upon the facts in issue between the parties in the suit or cause. And this point will be sought to be made out by stating what are the first principles or permanent idea of patentable invention; and then adverting to the conventional form in which the evidence relating

to the same is usually offered to the Court and jury.

Principle of patent law constant, practice varying.

In this manner the distinction will be shown between the constant principle of the law, and the varying adaptation of the practice according to the developments of experience.

Essay on first principles, and therefore without precise definitions.

It is however to be observed, that inasmuch as the object of the present essay is to treat only of first principles, all definitions calculated to narrow the idea of patentable invention, more than is done by the very terms of the original statute (as interpreted by the authorities), will be avoided. At the same time it will be necessary to state, with considerable attention to accuracy of expression, what is meant by patentable invention.

The term itself is adopted simply for its brevity, and because it is trusted that its meaning will become obvious to those who are conversant with the subject, when they have paid attention to its several features as delineated in the following pages.

Patentable Invention, in the Terms of the original Statute, is, "any Manner of New Manufactures."

Patentable invention a manufacture.

The only definition of patentable invention to be gained from the original statute, is "any manner of new manufactures." Whatever is a manufacture, provided it be new, is patentable. In order therefore to understand, in any case, what

is a proper subject-matter of a patent, there must be a distinct idea of that which constitutes a manufacture, and also of the mode of determining what is regarded as novelty in respect of invention.

"Manufacture" not to be herein defined.

The word manufacture has received various definitions, but it is not consistent with the purpose of the present essay to adopt any of them exclusively. So far as they contain any distinct practical idea they are received, but not as determining the ultimate limit of signification to be attached to the term manufacture.

Importance attached to right meaning of term.

Indeed, the great amount of effort made by the different writers on patents to assign accurate, and at the same time comprehensive, notions to this term indicates both the importance and the difficulty of rightly apprehending it.

Attempts of different writers to define term.

Mr. Carpmael, for instance, has given a classification which is intended to include all the subjects of patents; and there is no opinion here expressed as to its adequacy or otherwise. So also has Mr. Godson. Mr. Hindmarch has a chapter on "The nature and qualities of an art or invention which may be made the subject of a patent privilege," in which he discusses the meaning of the word manufacture in the statute, and refers to authorities in support of his views. Again, Mr. Webster, in his work on the subject-matter of Letters Patent for Inventions, has treated the point in the manner which best approved itself to his mind.

Definition of term by judges.

Besides the expressed views of these well-known writers, there are various dicta of learned judges

scattered through the cases, all tending to show how much attention has been given to this fundamental point—the meaning of the term "manufactures" in the statute.

Since, then, it is herein intended to abstain from offering any exact definition, it must be observed that the foregoing writers, and the cases, are referred to as evidence of the real signification which does in point of fact attach to the term manufacture as it has been construed by the Courts.

Reason why term is not herein defined.

The reason for at present avoiding any exact definition is, that none is furnished by the statute, and none has been given with authority in such a form as to call for exclusive adoption. The precise etymological sense of the word manufacture has been departed from in such a manner as to show that there is no limit whatever intended to be placed upon its construction, to prevent it from including any state of perfection of the arts that is attainable.

Term sufficiently defined for practical purposes.

It is to be borne in mind that the term "manufacture" has, from time to time, received a construction from the Courts which is amply sufficient to guide persons conversant with the cases, and acquainted with the manufactures of the country, to an accurate determination of the applicability of the term in any given case. It is true, that persons who have not these qualifications find themselves unable to form a definite conclusion in the matter; but this is only what is experienced in any branch of human science,

and is no indication of particular uncertainty as attaching to the law of Patents.

Patentable invention, then, must consist in a manufacture. It does not signify of what sort; it may be "any manner" thereof, provided only it be "new." **Patentable invention a new manufacture.**

The word "new" is also to be understood in a technical sense: and it is my purpose to abstain from offering any settled definition of the word in its application to the present subject, but to refer again to the authorities generally and to the approved writers in illustration of the point, which will be herein stated broadly. I will also refer to the first three sections of my own work on the Specification, as, when written, they were intended to point out the general principles by which the alleged novelty of a patent is to be tried. It is not pretended that the subject is therein fully discussed; but that portion of the work is here referred to as containing my own views on the present question at much greater length and in a more practical form than is to be attempted herein. Neither is the allusion to my own work intended to imply anything like disparagement of the works of other writers; but it so happens that they have turned their attention to the subject of novelty of invention under an aspect which did not admit of its being treated in the same manner as when viewed in the light of its bearing upon the Specification; and this forms the argument in the part of my work referred to. **Meaning of word new not expressly defined.**

Any learned construction of novelty, with a **Nice verbal**

criticism of term not allowed.

view of excluding the idea of improvement only, is no longer admitted to prevail. A new manufacture may consist simply in an improvement upon an old one; *i. e.* on one already existing. But the change must involve real improvement in purpose of manufacture, not merely improved workmanship or greater skill of execution, while still retaining the old features of operation.

On the other hand, it is quite clear that should any one succeed in introducing to public notice what might be called a new manufacture, as distinguished from an improvement of an old one, he might have a patent for it.

But the law, as hitherto interpreted, seems to allow of silence as to the distinction between novelty and improvement in the terms of the title of the patent. This distinction is reserved for the Specification, from which it must be susceptible of accurate deduction.

Novelty and non-user.

Another aspect of novelty of invention is to be gathered from the terms in the statute, "which others at the time of making such letters patent and grant shall not use."

The spirit of this condition seems to be that the grantee of letters patent shall supply a *bonâ fide* consideration for the grant. He is to put the public in possession of some manufacture which they have not at the time, and is then himself entitled to the grant of exclusive use of the same for a term of years. This is easily understood to be quite equitable as between the patentee and the public.

But the terms of the statute, as quoted above,

do not preclude the discussion of the question as to the reproduction of manufactures which have ceased to be used in public. They do not say absolutely that no invention is patentable which has ever, in any period of time, been used in public; but the exclusion is confined to inventions in use by others at the time of making the grant. And we have authority for treating this as an open question. Lord Lyndhurst, L. C., in a case in the House of Lords on appeal from the Court of Session (*The Houschill Company* v. *Neilson*), made the following observations:—"It "must not be understood that your Lordships, in "the judgment you are about to pronounce, have "given any decision upon this state of facts, "namely, if an invention had been formerly used "and abandoned many years ago, and the whole "thing had been lost sight of. That is a state of "facts not now before us; therefore it must not "be understood that we have pronounced any "opinion whatever upon that state of things. It "is possible that an invention may have existed "fifty years ago, and may have been entirely lost "sight of and not known to the public. What "the effect of this state of things might be it is "not necessary for us to pronounce upon."

Non-user, an open question.

It cannot be said that the point of non-user has yet been determined in such a manner as to preclude further discussion; and the express reserve of the learned Chancellor is worthy of remark, as indicative of the importance which he attached to its consideration.

Non-user properly an open question.

In fact, the conditions affecting the whole question of patents are such as to make it necessary to reserve a point of this kind for adaptation to the particular case. For it must be borne in mind that the manufactures of the country are in a state of continual progress, and it might prove a source of injustice at some future time if the question of non-user were to be finally determined at the present period without taking this fact into consideration. Looking at the merits of the question, it is quite conceivable that cases may arise in which the public may be entirely without any practical knowledge of a manufacture, and yet such manufacture may have been publicly known and used at some former period. Supposing then a man succeeds in re-establishing the manufacture, in giving it new birth as it were by adapting it to the existing state of things—is it not consistent with the equity of the case that this should be regarded as a "new manufacture?" In strictness of fact it is old, as having been known and used at some former period; but has it not some title to be considered new according to the policy of patent law, as having received, so to speak, new life?

Amount of consideration for grant of Letters Patent not fixed.

The policy of patent law consists substantially in the requirement of a consideration for the grant of letters patent. The amount of consideration is not fixed, because the prospect of remuneration for the grantee is proportioned to that, and he is therefore interested in producing a valuable invention. It is thus quite reasonable to

grant a patent without requiring any specific amount of invention, this being a question for the patentee to determine with himself on commercial grounds.

New manufacture may mean revived manufacture.

But a revived manufacture may be of more public utility than a strictly new one, so that it seems the law is wise in not drawing the distinction between the two in any exclusive manner. A revived manufacture may not indeed become the subject of a patent, if it come within the excluding terms of the statute, as being "mischievous to the state by raising prices of commodities at home, or hurt of trade, or generally inconvenient."

Of course, this excluding provision applies equally to a strictly new manufacture; but at present it is desirable to show the equitable balance of interest still held by the law, even when it is extended so far as to include revived manufactures under the term "any manner of new manufactures."

Anomaly of three patents for a realm, one in reference to question of novelty.

The question of novelty of invention has, however, been greatly perplexed of late by a new construction of the words "within this realm" in the statute.

Why they should be understood in one sense in reference to the granting of patents, and in another in reference to novelty of invention, is by no means apparent. A plain person reading the words "any manner of new manufactures within this realm" as definitive of the subject of a patent, would be likely to conclude that the

manufacture must be new within the territory over which the patent extends; *i. e.* in the case of a patent for England, Wales, and the town of Berwick-on-Tweed, the manufacture must be new there: in the case of a patent for Scotland, it must be new in Scotland, &c. Accordingly this was the received opinion until recently in a case in the House of Lords, on appeal from the Court of Session (*Brown* v. *Annandale and Son*), wherein it seemed impossible any longer to regard England, Scotland, Ireland, and the Colonies in any other light than as together constituting one realm. When the case was put as to the effect of evidence of want of novelty in one of the colonies in its bearing upon a Patent for England, the Lord Chancellor said, "If for England only, and it was "not new in Jamaica, it would be equally void, "because Jamaica is part of the realm. The "question is, as to the power of the Crown there, "for it does not affect the words of the instru-"ment. *There is but one realm.*"

The one realm should be covered by one patent.

A very general feeling now prevails that in order to meet this view of the law, which has been recognised by the Courts, it is desirable that one grant from the Crown should extend over the whole realm—that inasmuch as "there is but one realm," it should be capable of being covered by one patent.

Patentable invention, a new manufacture in terms of statute.

From what has been said, I here remark that patentable invention according to the original statute is in terms confined to a "manufacture," and to a "new manufacture;" but these terms

having received an interpretation from the authorities, it may tend to elucidate the subject if I proceed now to state a theory in reference to patentable invention, which in my judgment embraces all patents, and is fully borne out by the authorities. And it will be convenient to consider the point under the form of the following proposition :—

PATENTABLE INVENTION, AS INTERPRETED BY THE AUTHORITIES, IS AN EMBODIED PRINCIPLE.

Patentable invention not other than a manufacture ;

Undoubtedly the primary legal idea of patentable invention is a manufacture. There is, therefore, no idea of principle included in it which is inconsistent with that which is authoritatively held to constitute a manufacture. An abstract physical principle is not patentable, because it is not in any sense a manufacture. The discovery of it may be useful and very meritorious, but it must be rewarded in some other way. Still a manufacture may embody a principle. And I affirm that it does so universally, that in point of fact no result comes out from its use except as an effect of the working of its essential principle.

nevertheless an embodied principle.

Meaning of word principle.

There may be differences of opinion as to the propriety of using the word principle in the sense in which it is here to be interpreted ; but it does not appear to me that there is any other word which is more eligible for the purpose, and it is convenient to make choice of some word in order to make the sense clear.

Let it however be observed, that patentable invention is not here said to be a principle of any kind, but only of a particular kind—an embodied principle. It must be one which actuates a body, existing in some material form, and constitutes, when thus embodied, a manufacture. Although it is possible to conceive separately of the principle and of the body in which it resides, yet the union of the two is complete. It is impossible to construct a piece of mechanism and set it to work without embodying a physical principle. And the same remark applies equally to a chemical process. In both cases the material parts form a body, actuated by a living physical principle within them.

Analogy of man's constitution to patentable invention.

Now the point to be herein asserted may be further illustrated by reference to the constitution of man. May it not be said that every individual man is an embodied principle of animal, intellectual and moral life? It is true, we see only his body so far as material form is concerned, but in looking at that body we cannot help being conscious of the presence of that principle of life within which enables the man to exercise all the faculties we see put forth by him.

It is also true, that a body is essential to the performance of the functions of human life, but our habitual impression of the individual man is not so much in reference to his body as to that part of his constitution which is herein called the principle of life. When this is withdrawn, the body is a mere corpse. Now this illustration

is referred to, simply to remark upon it that we are perfectly familiar with an instance, in the economy of the world, wherein the real actuating principle—that on which our mind rests when contemplating the individual specimen—is unseen: and yet we know how to realize its existence most fully by observing its actual operation through a body prepared for it. In other words, we know thoroughly what is meant by an embodied principle when we refer the expression to the constitution of man, and employ the word principle as meaning the individual soul of man. And it would not be considered unusual if, in speaking of a particular man, no mention whatever should be made of his body, although of course it would be regarded as a false mode of speaking, if anything were to be said of him which was inconsistent with the conditions of his bodily nature.

Embodied principle contained in every man.

Here, however, it must be admitted that the analogy of the human constitution to patentable invention holds good only to a limited extent. The soul of every human being is, at its fixed time, withdrawn from the body, and a palpable change at once comes over every part of that body. This is not the case with the elementary parts of matter, composing what may be termed the body of the invention as distinguished from its spirit. We have no reason for believing that the physical principle which has been made to reside in mechanical and chemical matter will be withdrawn, and such matter be rendered incapable of per-

Analogy herein set up not complete.

forming mechanical and chemical actions when placed by man in the circumstances to call them into exercise. On this account it is difficult for some minds to realize the fact, that every mechanical and chemical action of inert matter is produced by the physical principle residing therein, as the human body is animated by the presence and working of the soul within it. Again: because inert matter cannot of itself put forth evidence of life in the manner in which a human being does, the popular mind is unimpressed by the fact that it has a peculiar kind of actuating principle within it, which can at any time be developed by suitable direction from without.

Analogy although not complete yet instructive.

Although, therefore, it is not pretended that there is a complete analogy between the constitution of man and patentable invention, yet it is said that the former affords an illustration of the latter, so far as it indicates the fact of an embodied principle in which the essential part of each individual specimen—that part which addresses itself to the minds of others—is the actuating principle itself, seen and recognised in its effects upon the material body which it animates.

But another limit to the analogy will probably be suggested. It will be said that the human body is ordinarily composed of substantially the same parts, and therefore it is not sufficiently characteristic to distinguish individual persons in the same manner as machines and all things coming under the denomination of manufac-

tures, are palpably distinguishable one from another.

Now, for the purposes of the present argument, this point may be conceded: for the object of referring to the analogy is not to establish a correspondence between the human subject and the manufacture any further than in this single respect, *viz.*, that both when in action show themselves to be actuated by an unseen principle within—a principle different in its nature in each, but still equally real as the moving cause in both.

Extent of analogy.

The point here asserted is, that patentable invention is an embodied principle as really, although unlike in some respects, as is the human constitution; and, moreover, that its individual character in each specimen is seen by regarding it in this light.

Theory of patentable invention tested by illustrations.

It will be well now to try this theory by applying it to certain inventions, so as to afford the means of judging whether or no it is capable of including the subject-matters of all patents, and also how far it presents a key to their true construction.

Neilson's patent.

Let the first mentioned be the often quoted case of Neilson's patent, "for the improved appli- "cation of air to produce heat in fires, forges, "and furnaces, where bellows or other blowing "apparatus are required."

This patent for a manufacture;

The terms of this title clearly point to a manufacture; and the specification refers particularly to the manufacture of iron. The evidence, at the

trial of this patent, also had reference to this same manufacture, and showed the practical character of the invention, which introduced a considerable change into the usual mode of procedure. There is no difficulty in recognising the manufacture in this case; it is no mere suggestion, and rests upon a basis of fact, rather than upon any ingenious arrangement of words, in the specification.

but nevertheless for an embodied principle.

But the invention is likewise an embodied principle in the sense which has been ascribed to that expression. It consists of an application of air heated in its passage from the blowing apparatus to the furnace, by its being made to pass through a suitable heating vessel placed between the blowing apparatus and the furnace. It does not consist of an application of air in any other condition, or under any other circumstances. Neither is it confined to any particular form or size of heating vessel: these are conditions affecting the degree of benefit to be derived from the use of the invention in particular instances, but they do not constitute its essence. The principle of the invention is distinct from the necessary arrangements required to adapt it to a particular use. These would vary according to the different circumstances of application.

Principle of invention.

The invention in this case consists of the principle of applying heated air to furnaces, embodied in an arrangement of apparatus, consisting of an air-vessel capable of receiving the blast of air from the blowing apparatus, of heating the

air it has so received, and transmitting it as a hot blast into the furnace.

Whatever form of vessel is capable of performing these functions is included in the patent. On a statement to this effect being made before the Court of Exchequer, Baron Alderson said:—
"If you claim every shape, you claim a principle.
"There is no difference between a principle to
"be carried into effect in any way you will, and
"claiming the principle itself. You must detail
"some specific mode of doing it. Then the rest
"is a question for a jury."

In answer to this observation, may it not be said that a specific mode of carrying the principle into effect is supplied by the invention of placing between the blowing apparatus and the furnace a heating vessel such as is described in the specification of the patent; that is to say, not a heating vessel of any particular form or dimensions, but one capable of receiving the blast of air from the blowing apparatus, and transmitting it in a heated state to the furnace? Surely the intervention of this heating vessel in the manner described is no merely abstract principle! A man may have conceived the idea that it would be an improvement to apply heated instead of cold air to furnaces, without knowing how to do it in practice. That would be only a principle such as could not be patented; but here is an invention founded upon that knowledge and embodying it; here is an embodied principle.

The principle in this patent is an application of Principle of in-

vention re-stated.

air to certain purposes under particular conditions, and not a particular mode of treating the air thus applied. This requiring to be heated, the invention does not apply to the mode of heating it; but to its use in a heated state. So that the same invention may extend to various modes of heating the air, provided they come within the general description relating to the particular application of air as specified.

Scope of invention.

Any improvement in the mode of heating the air might constitute a subject-matter for another patent, but a license must be obtained from the patentee of the application of heated air, to allow the subsequent inventor to come upon his territory. In such case the patent would consist of the principle of heating air embodied in some particular form of apparatus, or carried into effect by some particular process. And such patent might involve a principle capable of still further sub-division to form subject-matters of other patents under suitable license.

I pass on now to notice another instance, showing patentable invention to consist in an embodied principle—albeit a manufacture. The present example is that of a patent which actually grew out of Neilson's—last referred to. It is Crane's patent for "an improvement in the manufacture of iron." This invention was shown to be a real manufacture, and not merely an alleged one, in the face of objections strongly urged. It was shown to have produced improvements in the manufacture of iron, which could not have resulted with-

Crane's patent.

out some real change in the process had been introduced.

This invention, however, consists in the principle of combining the use of anthracite, or stone-coal and culm, with the hot-air blast, embodied in the arrangement of apparatus and proportions and combinations of materials or ingredients described in the specification. Principle of invention.

Still, the essential feature or principle in this invention is the using of anthracite coal, combined with the using of the hot-air blast, in the manufacture of iron. This being established as the principle of the invention, any use of this combination without license becomes an infringement of the patent. It is no objection to the validity of such patent that a part of the said combination was derived from a previous patent, under license. The elementary portions of an invention may be derived from any lawful source; but, when put together, they become the property of him whose ingenuity led him to contrive their combination so as to produce a new manufacture. Whether the elements of an invention are separately new or old, patented or unpatented, is not material, provided that in combination they produce a beneficial change in the manufacture to which they are applied (*a*).

It has been supposed by many that, because a subject-matter of this kind may be described thus shortly in words, it cannot have been intended to Patents for combinations.

(*a*) See a note in Carpmael's Reports, vol. i. at the end of the case, *In re Derosne's Patent.*

include such within the provisions of the law relating to patents. But it may be observed, that there is a sense in which those which are admitted on all hands to be good subject-matters may be stated to consist in mere combinations. There does not seem, indeed, to have been any difficulty in men's minds as to the admission of a new combination of old raw materials as constituting a patentable invention; but the difficulty is conceived to arise as soon as it is proposed to throw manufactured matter into some form of new combination. Why this should be so remains for those who believe in it to point out.

I have thought it desirable to draw attention to these considerations in reference to Crane's patent, because it is an instance of a subject-matter which strikingly admits of statement in a short form; and yet, when such statement is expanded and explained by reference to the specification, it is found to express the conditions essential to a patentable invention.

Such patents alleged to be invalid;

This is the kind of invention concerning which it is usual for counsel opposed to the patent to address "*ad captandum*" arguments to the jury. Such an invention is characterized as consisting only in putting two things together, which it is open for any one to do. It is said there is no novelty in what is done, since the two things put together are both old, and the idea of mere combination is frequently spoken of as if beneath the notice of the Court.

but herein

But, notwithstanding all the rhetoric that is

occasionally employed in disparagement of such subject-matters of patents as the present one, I venture to affirm that it is quite consistent with what is understood to be patent law, to say that a combination of two existing things, as in the case of Crane's patent, forms a good subject-matter.

stated to be valid.

This question came directly before the Court of Common Pleas, in the trial of Crane's patent, which was held to be valid.

And in principle this view is clearly reconcilable with the policy on which the granting of patents is based. The combination of two or more things well known separately may, when brought together, constitute an improvement in some manufacture if duly applied thereto, and the manufacture may be so improved as to constitute a "new manufacture." For it is to be borne in mind that the essential feature of patentable invention consists not in extent, but in character, of alteration in a manufacture, and the introduction of another element may produce a substantive change. To regard Crane's patent under any other aspect than in its combination of the use of anthracite coal with the use of the hot-air blast (in the manufacture of iron), although this is to regard it as a combination of two confessedly old things, would be to look at some comparatively unessential part of the invention. And it is most important that the attention should always be fixed upon the central idea of the invention, when it is desired to determine the

nature of it as distinguished from all others that have preceded it. In the present instance, the physical principle giving individual life and character, as it were, to the invention, is the action, of the anthracite coal as a fuel stimulated by the hot-air blast, upon the iron in course of manufacture.

Principle of invention restated.

Whitehouse's patent.

But the theory suggested may be illustrated by reference to another case, Whitehouse's patent, which was the subject of the actions, *Russell* v. *Cowley* and *Russell* v. *Ledsam*. This patent was for "certain improvements in manufacturing tubes for gas and other purposes."

In this case a manufacture is clearly recognisable. Actual tubes are produced; the novelty of invention, however, lying in the mode of production rather than in the articles produced. This is an instance in which the important doctrine was held, that the whole specification being evidently based upon one essential idea, and consistent only with that, such idea must be taken to govern the whole and be regarded as the essence of the invention, although not so stated in express terms in the specification.

Principle of invention.

The present invention may be characterized as a principle of manufacturing tubes by external circumferential pressure *without* internal support, embodied in a process of first heating the piece of iron suitable to form the tube, then turning up the edges to prepare it for welding, and finally welding the tube after re-heating it, by withdrawing it from the furnace when upon the point

of fusion, by means of a chain attached to a draw-bench, and passing it through a pair of dies of the required size.

Lord Lyndhurst's view of specification.

The Lord Chief Baron, Lyndhurst, thus epitomized the patentee's description of the invention in his specification:—"I have described the apparatus "by which these prepared tubes of iron, *having* "*nothing in them*, are welded together; I have "described the particular apparatus by which "that is effected. I do not confine myself to "that precise description of apparatus; but these "previously prepared tubes of iron which I have "described may be heated to a welding heat, and "may by variations in this apparatus be drawn "through dies or holes, and formed in this way."

The learned Baron then adverted to the concluding part of the specification, as pointing out "advantages absolutely inconsistent with the use "of the mandril"—(previously in ordinary use, and considered indispensable). The invention was finally stated to be "an invention to manu-"facture tubes for gas and other purposes, by "welding them without the use of any mandril "or internal support, by which certain advan-"tages are produced."

Observations thereon.

Tubes had been welded with a mandril inside them. In this invention the mandril or internal support was dispensed with. And this was a substantive change in the manufacture, the mandril being an instrument of material use under the old system. From this change, too, certain advantages resulted. Thus, a patentable inven-

tion is herein to be recognised, notwithstanding that the real, essential, operative principle of the invention admits of statement in a few words.

But then, it is to be observed, this principle was really that which the evidence showed to constitute the basis of the invention, and it was held to be disclosed in the specification, although not claimed therein in express terms. Hence it is obvious that a statement of the principle of the invention may be adequate, without being always reduced to one conventional form. The circumstances of the case may sometimes call for the adoption of one form of statement in the specification, and sometimes for another: provided always, that the principle of the invention be really deducible from the description employed, when interpreted by the evidence in the cause.

Principle of invention must appear from specification.

A patent however will not be supported, unless the real principle of the invention be either expressly stated in terms capable of receiving support from competent evidence, or be made apparent by the entire description in the specification.

Saunders's patent.

Plaintiff, in *Saunders* v. *Aston*, failed in establishing the validity of his patent; not because the invention itself was not patentable, but because he did not in his specification claim the patentable part of it. Had this invention been contemplated under its proper aspect in the specification the patent would have been supported. The essential part of the invention, instead of being regarded as such, was treated merely as an acci-

dental portion of the same. The permanent idea of the invention was referred to indistinctly, as though it were changeable and not constant through all diversities of form. An instance of this kind accounts for the failure of a patentee in a court of justice, notwithstanding that his invention is really patentable. The decision against him in such a case is quite consistent with the other decisions to which reference has been made as favourable to patentees. The former patents stood upon the ground of their accurate specific claim, or other form of adequate description, in the specification: this falls for want of such necessary legal support. The true character of patentable invention is not altered by the difference between the two as regards success in a court of law: one (as Neilson, Crane, or Russell) succeeds, because he makes it appear that he has complied with the requirements of the law; the other (Saunders) fails, because he is shown not to have done so.

Patentable invention constant in principle:

Many instances might be brought forward to illustrate the proposition — that patentable invention is an embodied principle — in the manner in which it has been illustrated by the foregoing: but no important end would be answered by multiplying such instances, and the reader is referred to the reports of the cases, in which he may trace out for himself the applicability of the present suggested theory to the purpose assigned to it. A competent reader of the cases will find one uniform principle of con-

this seen by reference to reported cases.

struction running through them, to the recognition of which it seems to me that the present theory forms a key. It will therefore now be desirable to collect the view which has hitherto been presented, and to show somewhat more distinctly the precise bearing which it has upon the determination of questions relating to the subject-matters of patents.

Theory of patentable invention restated.

It has been admitted that patentable invention must be a manufacture, otherwise it does not come within the terms of the original statute relating to patents. But it has likewise been asserted that patentable invention is nevertheless an embodied principle, and that the true mode of recognising the individual character of a particular invention is to regard it as such. Then it became necessary to show what was meant by the expression "embodied principle" in its reference to a manufacture. The expression has been interpreted as referring to the physical principle, be it mechanical or chemical, which resides in, and can be made to actuate, the material forms which, in their combined state, constitute the body of the invention or manufacture. This principle is so intimately connected with that which has been called the body of the invention or manufacture that it can only be separated from it in idea, and it is the peculiar character of the former which determines that of the invention. And such character is capable of being recognised by any one who understands the nature of that scientific principle which a given combination of element-

ary parts, applied to effect a certain purpose in reference to a manufacture, will necessarily involve. The point however has been illustrated by reference to the analogy, so far as it holds, between a manufacture thus regarded and the human constitution.

Analogy of human constitution restated.

Although not pretending for one moment to be able to conceive of the exact mode in which the connection between the soul and body of any human being subsists, yet for practical purposes it may be taken for fact, since the body without the soul is dead—incapable of performing any of the functions of life. All the power which any man has of influencing others by contact with them is gone when his soul departs. Again, what any man thinks, or says, or does, in a manner characteristic of himself, as distinguished from all other men, depends upon the particular constitution of the animating power within him, controlled by the particular organization of his bodily frame. It is true, that the precise, distinctive character of each soul is not seen, and cannot be estimated by us: but this is no reason why we are to deny its existence. So far, indeed, as experience bears upon the point, it is favourable to such existence, and has led us habitually to regard the unseen but animating portion of the man as, in fact, the man. As a man thinks, and says, and does, *so* he is.

Test of extent of analogy.

Now how far does this illustrate the case of a "manufacture?" A manufacture is composed of an organization of inert matter ready to be actu-

ated by a physical principle residing within it, such principle being capable of development on the application of a suitable external agency.

Whatever direction is given to this organization of matter is produced by the operation of the otherwise hidden, although inherent, physical principle which has been called into action. The organization of inert matter is not itself the essential part of the manufacture, although a manufacture cannot exist without it. A manufacture is chiefly recognised by its effects in working, and these are due to the operation of that physical principle involved or embodied in the organization of matter. This being varied in form becomes a different thing, while that is to a certain extent independent of forms, and may preserve its essential character notwithstanding such change. All this shows that the principle is quite distinguishable from the organization of matter, and that it is the essential part of the manufacture—it is that which distinguishes one manufacture from another. Without this principle there is no idea of a manufacture, there is merely a collection of elementary parts. When however these are combined, in subservience to some principle applicable to a manufacture, a patentable invention is thereby constituted.

Principle, essential part of "manufacture."

But the applicability of this theory has been shown by reference to four different cases: 1st, a patent in which the claim to invention was broad and comprehensive; 2nd, a patent having a comparatively narrow and specific or exclusive claim;

Illustrations referred to.

3rd, one in which the real claim was held to be contained in the specification, although not expressly so stated in terms; and, 4th, one which really contained a valid subject-matter, but it was not set forth in the specification. The three former were successful when tried in a court of law; the latter failed. The present suggested theory is illustrated by the three former instances, and not contradicted by the latter. In each of such three instances it will be seen that the invention involved an essential principle, which was capable of acting through the particular organization of matter in which it resided. This principle could produce its own effects through all suitable combinations of matter, and no other. The limit and the character, therefore, of the invention were to be found in this principle. Still, although distinguishable from the organization of matter, it would be but an abstract (not a patentable) principle without it. And yet the actuating physical principle, when embodied in the organization of matter, was indeed, in each of the three instances adduced, the very essential part of the invention or manufacture.

Patentable invention, really principle of invention.

Thus, it will be seen that every patentable invention is a manufacture, the substantive character of which is to be recognised by looking at the particular character of the physical principle embodied in the combination of parts constituting such manufacture.

Objections answered.

It may be said, however, that in some patents the invention refers only to a combination of ap-

paratus or machinery, the principle being either public property or patented by some one else previously. To this it may be answered that the apparatus is designed to subserve a given purpose in reference to a manufacture; and the physical principle on which it does this (being new) is the really patentable part of the invention. If the combination of machinery will not abide this test there is no adequate subject-matter for a patent.

Again, it may be urged, other patented inventions consist only of small articles, and are merely improvements in form, or otherwise, upon similar articles previously used for a similar purpose.

The same answer applies substantially in reference to this class of inventions; the test lying in the manner in which they serve their intended purpose.

But there is one great and important objection which it is necessary to meet, not for its value in principle, but because it has so extensive a hold upon the popular mind.

Important objection answered.

Many persons are under the impression that the mode of construing patents herein contended for has a tendency to stop improvement, by giving undue advantages to inventors of broad principles over inventors of improvements in details; and such persons are on this ground induced to deny that the law gives the inventor of an "embodied principle" a right to require a license from all persons to use an invention involving such principle if the mode of carry-

ing it into practice be considerably altered by them.

Stead's patent used as illustration.

In the case of *Stead* v. *Williams* it was contended that a man could not have a patent for so broad and comprehensive a subject-matter as wood-paving, because there are many different modes of paving with wood, and it would be unjust to the various patentees of different modes to give the original inventor the benefit of the broad construction which is herein said to be legal.

Upon the question, however, of wood-paving in the broad sense being a subject-matter for a patent, Mr. Justice Cresswell said:—"Upon that "question, it is simply a question of law, "whether it can be the subject-matter of a "patent. I propose to state, as my opinion "here, that it is so: and then, if it should be "necessary, the defendants may move the Court, "and take their opinion upon that ground." The opinion of the Court was not expressed in opposition to this view of the learned judge, although the ruling of the judge was reversed by the Court on other grounds, on the application of the defendants.

The plaintiff, in this case, did not establish his alleged right, simply because that which he claimed was public property; the public were already in possession of the principle of wood-paving embodied in a practical shape sufficient to constitute an actual road or way. For this reason the several patentees of the different

modes of paving with wood were at full liberty to practise their respective inventions. But supposing that Stead's claim had not been shown to be invalid on the score of want of novelty, there does not appear any reason why he should not have been in a position to require all those who came after him to take a license from him for the exercise of any invention of wood-paving.

Present law does not stop improvements in manufactures.

And how can it be said that this view of the law has a tendency to stop improvement in manufactures? The assertion here is, that the law affords a right of exclusive use to any man who has disclosed in a legal manner an invention of a new principle embodied in a practical form, constituting "a manner of new manufacture." It is said, this privilege is granted by Letters Patent without reference to the extent of any principle of manufacture that may be discovered and patented. According to the breadth or narrowness of the principle in each case, the patentee has a greater or less prospect of remuneration for his trouble and expense.

Patentee and public alike benefited by present law.

The wider his principle extends the greater addition there is to the public stock of information through his specification. It is, therefore, for the public benefit that he should have a sufficient inducement to produce an invention as comprehensive as possible, to make it, wherever it can be, of a character which embraces a great diversity of detail in its practical exercise. In this manner fresh channels of industry are opened. But then the originator of these ad-

vantages has a rightful claim to be duly protected from being superseded by others who merely improve upon his plan; and if this be not recognised the public will cease to enjoy the benefits of such inventions as really form the germs of extensive improvement. Let patents by all means be granted to inventors of substantive improvements upon original great plans; let the interests of such inventors be duly guarded, but not by any qualification which the authorities have not seen fit to apply to the subject-matter of a grant of letters patent—"*any manner* "of new manufactures."

Foregoing principle of construction not contradicted by authorities.

And I confidently make the assertion that the authorities do not warrant any qualification of the words "any manner of new manufactures," on the ground of the wide extent of principle to which the words may apply in any particular case.

Illustration. Electric telegraph patent.

The electric telegraph is an instance of an invention which may be adverted to in illustration of the view which I am desirous of advancing. I say, supposing it to be the fact that the physical principle on which the electric telegraph depends was known (however accurately, still) only in an abstract form up to a certain date, a patent could be taken out at such date for an electric telegraph simply. But then it would be incumbent upon the patentee to show that he had for the first time embodied the previously known principle in the practical form of a working telegraph.

Inasmuch, however, as working telegraphs admit of great improvement, and it is desirable on public grounds to promote instead of to check such improvement, all inventors of substantive improvements may have patents for the same, and use them subject to the license of the original inventor of a working telegraph. On the other hand, if he be desirous of using any of the subsequent improvements it must be under license from the inventor thereof (*b*).

Growth of invention dependent upon maintenance of said principle of construction;

Now, this question, on the construction of patents, is one of far wider public interest than would be involved in the mere matter of a rivalry of claim between patentees of broad principles and patentees of improvements in detail. It has reference to the rise and growth of invention, applied to the improvement of the manufactures of the country. This is fostered by the law as hitherto construed by the Courts; the concurrent decisions in which show that patentable invention (which refers to "any manner of new manufactures,") is determined by looking to the physical principle embodied in the organization of matter adapted for carrying the purpose of the invention into effect. This uniform principle of construction will, I submit, be found to run through the cases, and applies to all patents, whether in themselves containing broad ideas

which appears to be uniformly supported by authorities.

(*b*) The electric telegraph case is thus put hypothetically for the sake of illustrating the point contended for; but without any intention of alluding to the merits of the case as between the parties who have long been at issue.

forming the germ of future inventions, or others constituting as it were the trunk from which dependent inventions branch out, or others for mere improvements in detail.

Inventions admit of classification.

In estimating the patentable character of an invention, notice must be taken of its rise and growth with a view of determining to which class the principle embodied in it belongs, so that the patentee may have assigned to him the extended or the circumscribed territory according to the facts of his case.

Evil consequences not attributable to present law;

If, in any instances, this mode of construction has seemed to stop improvement in manufactures, the cause of the impediment has been not the law itself, but the practice of patentees and others who have sought more than is their due under the law.

nevertheless to be guarded against by due regulation of scientific evidence.

Now, one most important mode of guarding against the evil of improper practice under the law as stated above, is to provide a proper check to any sophisticated statements that may be offered to the Court and jury by scientific witnesses in patent causes. Accordingly, it will be advisable now to consider the nature of the scientific evidence given by such partics, both in principle and in practice.

SCIENTIFIC EVIDENCE.

Reason for trying present practice.

It has been observed at the outset, that the conflicting character of the scientific evidence on either side in patent causes has been the subject of frequent remark from the Bench. For this reason I think it important to test the present usual practice by referring it to some recognised standard: and then to suggest a mode of remedying some of the defects which will appear on such comparison of existing practice with acknowledged principle. Of course the question thus stated involves many important considerations. I propose however to leave many of them untouched, and to advert merely to certain points which strike me as prominent features in the law and practice relating to scientific evidence in patent causes.

Heads under which subject considered.

Now it will be convenient to arrange my remarks under the four following heads:

1. Nature of the inquiry in patent causes.
2. Brief statement of the law as to the admissibility of scientific evidence.
3. Comparison of present practice with such statement of the law.
4. Suggestions of improvement in practice.

1st head.—Nature of inquiry in patent causes.

1. The nature of the inquiry in patent causes, so far as relates merely to the question of patentable invention, is usually resolved into two

branches, which may be termed exclusive and inclusive.

Exclusive form of inquiry.

What I mean by the inquiry termed exclusive is that which relates to the distinction of the subject-matter of the patent from all preceding patents, public users, or published descriptions: and the inquiry termed inclusive relates to the scope of the patent with reference to the question of infringement.

The fundamental question in each patent cause is,—What is the subject-matter of the patent? In what does it differ from that which previously existed?

Every manufacture has its rise and its several stages of progressive improvement. These are more palpable in some cases than in others, and the inquiry is the easier in proportion to the greater distinctness of the various periods of growth in the manufacture. All cases however have to be dealt with according to their particular merits as involving questions of manufacture, on one uniform principle of law. Whatever be the varieties of circumstances attending the manufacture to which the invention relates, the law of evidence adapts itself to the case.

Still it is manifest that the investigation in patent causes, although conducted according to legal forms, must relate in substance to questions of manufacture. The point to be determined as to what a patent is, necessarily involves two questions:—1st, What room is there for such a patent, *i. e.* is it new? 2nd, How far is the al-

Substantial questions under such form of inquiry.

leged invention accurately described in the specification?

"Novelty." Now the inquiry as to the novelty of a patented invention is one of so wide a nature that it has been found absolutely necessary to control with great strictness the offering of evidence against patents on the ground of alleged want of novelty. And my experience tells me that this is a most important point to guard. I shall therefore here draw attention to authorities on the point. In *Walton* v. *Bateman and others*, Mr. Justice Cresswell made the following pointed observations to the jury, in reference to defendant's plea, "that the alleged invention was not "nor is a new invention as to the public use and "exercise thereof."

Cresswell, J., on notice of objections. Cresswell, J.—"It is right I should direct "your attention now to a subsequent statute, "which was passed for the *protection of patentees*, "because it was found that when actions were "brought for infringements of patents, objections "were frequently started *by surprise* upon the "party; which he might have been prepared to "meet if he had had due notice of it, but which, "not having had that notice, he could not meet; "and so it was supposed injustice was sometimes "done to patentees, and an Act of Parliament "was accordingly passed, which provided that a "defendant intending to avail himself of objec-"tions to the patent, should, at the time of "pleading, give a notice of the nature of his "objections: and I cannot help thinking, after

" reading carefully the notice of objections given
" in this case, that it would be a very good rule
" to establish that with the notice the party
" should be compelled to say under which plea he
" means to bring forward the different objections ;
" for I protest, looking as carefully as I can at
" these objections, I have had very great diffi-
" culty in knowing how the defendants mean to
" apply them, and I fear that in this case, and in
" others, objections so drawn, without any such
" specific statement as to the plea under which
" they are to be given in evidence, instead of
" serving to help us in the due administration of
" justice, may serve as traps and pitfalls for
" judges and juries to be caught in. Gentlemen
" at the bar will do the best for their clients,
" but I think it would assist the administration
" of justice if the parties had distinct notice how
" the objections were to be applied" (*c*).

Tindal, C. J., on notice of objections.

Again, in *Fisher* v. *Dewick*, Tindal, C. J., says : —" The object of the statute was not indeed to
" limit the defence, but to limit the expense
" to the parties, and more particularly to prevent
" the patentee from being upset by some unex-
" pected turn of the evidence. Under the fifth
" section therefore, it was intended that the de-
" fendant should give an honest statement of
" the objections on which he means to rely."

Coltman, J., on notice of objections.

In the same case, Coltman, J., remarks :— " The defendant is not precluded from bringing

(*c*) See Webster's Reports, p. 616.

" forward any number of objections, but he must " state with precision what they are" (*d*).

Notice of objections properly required.

Without the salutary control which the Courts exercise over the tendering of evidence against the novelty of a patent, patentees would be liable to continual surprise, and a fair inquiry would be impossible. At present, however, it is possible to frame a case for trial in such a manner as to insure the discussion of its real merits, without giving undue advantage to either party.

The question of novelty, at this advanced period of manufacturing development, is one which requires great care in its treatment, in order to avoid doing an injury to patentees by allowing too much to be made of evidence of previous use, as alleged against a patent. And a similar remark applies to evidence of published descriptions in printed books, and of enrolled specifications, now that their number is so perplexingly great.

"Novelty" a question to be determined upon merits of case.

It is quite clear that there is a great difference in the facilities which the public possess as to their means of understanding particular inventions, when their results are communicated to them; and this fact deserves attention on behalf of the patentee who has it brought in evidence against him, that the subject-matter of his patent has been previously known to individuals.

Gibbs, C. J., on "novelty."

In *Wood* v. *Zimmer*, Lord Chief Justice Gibbs

(*d*) See Webster's Reports, pp. 267, 268.

noticed this fact in his remarks to the jury on the question of novelty, wherein he said:—
"Some things are obvious as soon as they
"are made public. Of others, the *scientific*
"*world* may possess itself by analysis. Some
"inventions *almost baffle discovery*. But to
"entitle a man to a patent, the invention must
"be new to the world" (*e*).

Here are three classes of inventions adverted to:—those which are obvious at once; those which may be found out and understood by scientific persons; and those which "almost "baffle discovery." It is plain, then, that in any inquiry as to the novelty of an invention, the particular character of the same is an important element in the consideration as to whether it has been anticipated by what has been previously known, inasmuch as the same amount of publication may be sufficient to invalidate a claim to a patent in one case and not in another.

Pollock, C. B., on "novelty."

In the recent case, *Edwards and others* v. *Da Costa and others*, Lord Chief Baron Pollock says:—"If a patent is to be met by a publi-
"cation, it must be a something at least which
"puts forth and describes *just that* which the
"patentee does. But even then it ought to be
"shown, that that gentleman, as well as the
"public indeed, could obtain the ordinary means
"of access to the particular publication wherein
"it was contained" (*f*).

(*e*) See Hindmarch on the Law of Patents, p. 113.
(*f*) See Rep. Pat. Inven. vol. xvi. enlarged series, p. 120.

Again, in the same case, the same judge says: —"There have been many cases perfectly fami- "liar in courts of justice where the *least thing* "in the world has made the *whole difference* be- "tween failure and success; and it is to protect "success that a patent is granted" (*g*).

Without multiplying authorities, it is clearly established that the inquiry in patent causes, as to the novelty of the invention, is one which is intended to be conducted with every allowance for the difficulty in which the patentee is placed, by reason of the vast accumulation of evidence of "public user" and of publication, which at this advanced period of manufacturing growth and of scientific research may be brought against him.

But I proceed now to notice the second question stated to be involved in what I have termed the exclusive part of the inquiry in patent causes, *viz.*, How far is the alleged invention accurately described in the specification? It is not intended here to make any allusion to the various criteria of sufficiency of description in the specification which the practice of the Courts has established: these are attempted to be elucidated in my work on the Specification, before referred to.

Inquiry as to invention described in specification.

The point to be mentioned here, is simply that the specification being the document which furnishes the patentee's statement of his invention, its contents are sure to be sifted in every patent cause. It is important however to observe the

(*g*) See Rep. Pat. Inven. vol. xvi. enlarged series, p. 161.

improved feeling of the Courts respecting patents, as appears from the following extracts from Chief Baron Pollock's judgment in the case just referred to:—"Some half-century since, it was "considered that a patent for a discovery was "an odious monopoly, against which every one "was to make war; * * * * * but, in modern "days, a very different and a far more liberal "view has been taken of what is a patent right, "and of the individual to whom such a patent "right ought to be given" (*h*).

Pollock, C. B., on improved feeling of Court towards inventors.

It may be thus taken for granted that the inquiry into the nature of the patent, as disclosed in the specification, is one in which the law, as interpreted by the above-named learned Judge, sanctions nothing but a fair investigation of all points just as they tell in favour of or adverse to the patentee. Any hypercritical view of the exact terms employed by him in his general description is excluded by this authorized view of the law, but still it subjects his language to trial by those tests which the circumstances of the specification, as a legal document of a particular nature, show to be applicable in the case.

Criteria applicable to specification.

Nothing can be received in evidence as forming part of the patent unless it be included in the specification, either expressly or impliedly: and, on the other hand, the statements in the specification are to be tried only by the existing state of public knowledge, as indicated generally by the

(*h*) See Rep. Pat. Inven. vol. xvi. enlarged series, 117.

knowledge of men of average skill in the particular manufacture to which the specification refers.

Standard of public knowledge difficult to be known.

It is indeed often found in practice a matter of great difficulty to determine exactly what is the right standard of public knowledge to apply to the terms of the specification, especially when the inquiry takes place some years after the date of the patent, and when in the interval some considerable improvement has been made in the manufacture to which the invention relates.

The Courts are becoming more alive than formerly to the necessity of trying the question as to what the specification declares the patent to be, as distinguished from what preceded it, by letting in evidence relative to the technicalities which have to be resorted to in describing the manufacture. The notion which may be formed by a Judge of the statements in a specification may be very erroneous, unless aided by such evidence: and it is a point of great importance to secure permanently the practice of allowing extrinsic evidence to be applied to the specification, in order to assist the Court and jury in determining the law and facts in each case.

Court requires aid from scientific evidence.

The specification is peculiarly a document entitled to such treatment.

"Inclusive" form of inquiry.

From what has been said, I think a general idea may be formed as to the nature of the inquiry in patent causes which I have termed exclusive, or that which relates to the distinction of the patent from all that preceded it. I now

proceed to speak of the inquiry termed inclusive, and relative to the scope of the patent.

Some persons, unacquainted with patent questions, seem very much at a loss to understand how it is possible for a subject-matter to be capable at once of nice distinction from all other things existing before it, and also of covering a wide extent of manufacturing ground. And yet I rejoice to say this fact has been satisfactorily demonstrated, not long ago, in the case of a patent which has survived the ordinarily destructive process of trial under writ of *scire facias*.

Lowe's patent.

I refer to Lowe's patent, an excellent report of the proceedings relating to which is given in the Repertory of Patent Inventions. This case is well known to have received a most thorough investigation, the opponents of the patent having been strongly impelled by interest to defeat the exclusive right, and having been also well fortified in means of carrying on the warfare.

Result of *scire facias*, trial.

Towards the close of the proceedings the counsel for the prosecution said :—"It has been a "very interesting inquiry; but, under all the cir- "cumstances, I think there is quite sufficient "cause for me to exercise my discretion on the "subject, and therefore, without wishing to "interfere further with the rights which Mr. "Lowe may have acquired under his patent, I "am disposed upon the present occasion to with- "draw from the case, and to allow the jury to "pronounce a verdict of Not Guilty upon all the "issues."

Reason why Lowe's patent instanced.

It is true, that the aspect under which it is right to regard a patent when under trial by *scire facias* has reference more particularly to its precise distinction from all others than to its legitimate scope as against infringers; but still Lowe's patent is referred to, because the reason why it was so stoutly contested is that it covers a wide ground as a practical propeller of vessels, while in principle, according to patent law, it consists only in a new combination of old elements.

The kind of inquiry at present under consideration would relate in this case to the extent of the new principle of propelling vessels involved in the new combination of parts.

This inquiry, termed inclusive, is one which requires guarding from abuse. It is true, that the patentee is entitled to a fair construction of his alleged rights, so as to protect him from invasion within his prescribed territory; but then, on behalf of the public, it is also to be remembered that the patentee must be kept within his proper limits. It is easy to say this in language, but it is difficult to secure the administration of justice to both parties in this respect; at least it requires great attention on the part of the Courts to maintain an uniform course of practice founded upon correctness of principle.

Lowe's patent a practical invention as described.

For instance, in the case of Lowe's patent, unless the new combination had really produced a substantive improvement in the screw propeller —unless it had supplied a desideratum which all

former plans of screw propelling left unsupplied—the patentee would not have maintained his exclusive right to such combination. The point that the comparative success of the invention, when reduced to practice, was owing to the new combination, was matter of evidence at the trial, which all the array of scientific ability opposed to the patent was not able to controvert. If the engineers of eminence, who came forward to deny the patentee's right, could have shown that the success of the invention was due to some accident instead of to the essence of the combination, they would have defeated his claim. And then the strong point for him against infringers was, that he had said nothing in his specification to interfere with the due breadth of his claim.

He made the combination to appear in its simplest, most essential (albeit practical) form, divested of all accidents, and therefore inclusive of them.

An invention so stated and described is not indeed confined to the detail which may be employed to illustrate its practical nature; but it becomes a nice point of inquiry, to determine how far the capability of the invention for successful adoption in practice is dependent upon, and how far independent of, the detail as described. The scope of the patent is involved in this question.

Specified inventions not necessarily confined to detail described.

In cases wherein the description of detail may be regarded as merely carrying on the mind of the reader from the principle in the abstract

to the same in the concrete, as embodying a manufacture, then the invention may be said to be not at all confined to such detail, but to include any other that would answer the purpose. This is not the case, however, supposing any portions of the detail to be essential to the realization of the principle described as constituting the invention. Points of this kind have to be carefully noted, either expressly or impliedly, in the specification, since they are determined by reference to its language interpreted by the evidence in the cause.

Importance of present inquiry.

From all this, it may be seen that the inquiry relative to the scope of a patent is one which is, in its very nature, of such vital interest to both parties in a patent cause, that it ought to be conducted on such principles as to inspire confidence in the mode of administering public justice.

2nd head.—Statement of law.

I may now go on to the second head proposed for consideration in the present section, *viz.*,—A brief statement of the law as to the admissibility of scientific evidence.

What is considered under this head.

Under this head I propose to regard the specification as the document, the contents of which form the basis of the investigation in every patent cause, and hence to treat the scientific evidence mainly as supplying material facts in reference to the particular manufacture described in the specification.

And for this purpose my plan will be to cite the statements of some of the leading text writers on evidence: and all I shall be responsible

for in this statement of the law will be the application of such statements to patent law.

Phillips on Evidence.

In Phillips and Amos, under the head—Admissibility of parol evidence to assist in the construction of written instruments—there are among others the following rules mentioned (*i*): 1. "It is an inflexible rule, that whatever evidence may be called in aid by a Court of law to assist it in its judgment, the only purpose for which it can be admitted, is to enable the Court to determine what is the instrument itself"(*j*).

2. "Sense of words in an instrument.—To make the decision of the Judge in expounding an instrument, independent of the accidents of his greater or less knowledge of the sense of the words used by the writer, and of the facts to which they may be applicable, it is evidently necessary that parol evidence should be admitted, to show what is the sense of the words used, and what are the facts to which they may be applicable. With this view evidence must be admissible, of all the circumstances surrounding the author of the instrument"(*k*).

3. "Evidence of intention.—The rule being that evidence to construe an instrument is admitted only for the purpose of ascertaining the meaning of the instrument itself, it follows that evidence *cannot* be received for the purpose of

(*i*) In all these extracts from writers on Evidence the italics are those of the writers themselves.

(*j*) Phillips and Amos on Evidence, 8th ed. p. 710.

(*k*) *Ib.* p. 731.

showing, not what is the effect of the words actually inserted in the instrument, but what the party intended to insert" (*l*).

Then Starkie, under the head—Indirect Evidence,—says, in reference to questions of skill:—

"Of the class of facts which require proof by means of indirect evidence, there are some of so peculiar a nature that juries cannot without other aid come to a correct conclusion on the subject. In such instances, where the inference requires the judgment of persons of peculiar skill and knowledge on the particular subject, the testimony of such as to their *opinion and judgment upon the facts, is admissible evidence* to enable the jury to come to a correct conclusion" (*m*).

Analogy between will and specification.

I shall here leave these two well-known and approved writers on Evidence for the present, and refer to them again hereafter. In the mean time I propose to deal with the case of the will as a document somewhat analogous to the specification, at least so far as concerns the general principles on which its contents are to be construed, and to cite passages from the works

Wigram on Extrinsic Evidence.

of Wigram on Extrinsic Evidence and Jarman on Wills by way of showing the law on this point. And it will be convenient to give the passages as they stand with my additions in parentheses. In making so copious a use of Sir James Wigram's work as is hereinafter made, perhaps some apology is due, but there is so

(*l*) Phillips and Amos on Evidence, 8th edit. p. 740.
(*m*) Starkie on Evidence, vol. i. p. 69.

much in the work in a small compass adapted for my purpose that I found a difficulty in knowing what to reject. Apology is also due on another ground, *viz.*, that the passages cited are separated from their context, and therefore do not present the same logical unfolding of the important subject treated by the writer, as they do in their respective places in this able work.

The title of the work is "An Examination of the Rules of Law respecting the Admission of Extrinsic Evidence in Aid of the Interpretation of Wills."

The following are certain passages selected in succession from the work, but without further arrangement :—

1. "Any evidence is admissible, which in its "nature and effect, simply explains what the tes- "tator (patentee) *has* written (or delineated) : "but no evidence can be admissible, which in its "nature and effect, is applicable to the purpose "of showing merely what he *intended* to have "written (or delineated). In other words the "question in expounding a will (specification) is "not—What the testator (patentee) meant? as "distinguished from—What his words (and draw- "ings) express? but simply—What is the mean- "ing of his words? (or representations by draw- "ings referred to by words). And extrinsic "evidence, in aid of the exposition of his will "(specification), must be admissible or inadmis-

" sible with reference to its bearing upon the " issue which this question raises" (*n*).

2. " Where there is nothing in the context of " a will (specification) from which it is apparent " that the testator (patentee) has used the words " in which he has expressed himself in any other " than their strict and primary sense, but his " words, so interpreted, are *insensible with refer-* " *ence to extrinsic circumstances*, a Court of law " may look into the extrinsic circumstances of " the case, to see whether the meaning of the " words be sensible in any popular or secondary " sense, of which, *with reference to these circum-* " *stances*, they are capable" (*o*).

3. " If a testator (patentee) express himself " in terms, with which, as a member of a par- " ticular trade or calling he is familiar, the evi- " dence of persons acquainted with the proper " meaning of such terms is admissible to inter- " pret them" (*p*).

4. " Where the person or thing (new manu- " facture) intended by the testator (patentee) is " the point of contention, the office of the Court " is simply to declare what person or thing (new " manufacture) is described in the will (specifica- " tion)" (*q*).

5. " The *most* accurate description possible " must require some development of extrinsic

(*n*) Wigram on Extrinsic Evidence, p. 8.
(*o*) *Ib.* p. 42. (*p*) *Ib.* p. 49.
(*q*) *Ib.* p. 52.

" circumstances to enable a Court to decide upon
" its sufficiency; and the *least* accurate descrip-
" tion, which is sufficient to satisfy the mind of
" a judge or jury as to a testator's (patentee's)
" meaning, must be within the same princi-
" ple" (*r*).

6. " As a knowledge of the nature, name,
" &c., of the subject intended by the testator
" (patentee) is necessary for the purpose of ena-
" bling a Court to identify it: so a knowledge
" of the circumstances by which a testator (pa-
" tentee) was surrounded at the time of making
" (preparing) his will (specification); the situa-
" tion in which he stood with respect to the
" objects to which his will (specification) refers,
" *may* be necessary for the same purpose" (*s*).

7. " The decision (in certain cases referred to)
" would be, not that the testator (patentee) *in-*
" *tended* merely to express this or that purpose
" (of invention); but that he *had*—perhaps in-
" accurately—expressed it" (*t*).

8. " No principle or rule of law would, it is
" conceived, preclude a Court from acting upon
" the evidence of facts by which the meaning of an
" *apparently ambiguous* will (specification) would
" in such a case (a supposed case) be reduced to
" certainty. It is the form of expression only,
" and not the intention, which is ambiguous"(*u*).

9. " Upon the principle that all writings tacitly

(*r*) Wigram on Extrinsic Evidence, p. 56.
(*s*) *Ib.* p. 57. (*t*) *Ib.* p. 65.
(*u*) *Ib.* p. 66.

" refer to the existing circumstances under which " they are made, Courts of law admit evidence of " particular customs and usages in aid of the " interpretation of written instruments, when- " ever, from the nature of the case, a knowledge " of such customs and usages is necessary to " a right understanding of the instrument. The " law is not so unreasonable as to deny to the " reader of any instrument the same light which " the writer enjoyed" (*x*).

10. " The test to be applied in each particular " case is this—Do the words (and delineations if " any) of the will (specification), when all the " circumstances of the case are known, express " the intention which is ascribed to the testator " (patentee) ?" (*y*).

11. " The evidence only determines what sub- " ject *was known to the testator* (patentee) by the " name or other description he used" (*z*).

12. " Statute law is necessarily of a less flexi- " ble and accommodating nature than the rules " of common law " (*a*).

13. " To define that which is indefinite, is to " make a material addition to the will (specifica- " tion) " (*b*).

(*x*) Wigram on Extrinsic Evidence, p. 74.
(*y*) *Ib.* p. 98. (*z*) *Ib.* p. 116.

(*a*) *Ib.* p. 116. The rules of common law let in extrinsic evidence more freely than statute law, and this is an important consideration in reference to a document like the specification of a patent, wherein the subject-matter relates to a "manufacture," the precise limits of which term is not settled by statute. (*b*) *Ib.* p. 121.

14. "There is a wide difference between the "evidence which is simply explanatory of the "proper meaning of the words, and that which, "admitting that no certain intention is expressed "in the will (specification), is resorted to only "for the purpose of proving what it was the tes- "tator (patentee) *intended* to have expressed" (*c*).

15. Extract from quotation from Baron Parke in *Doe d. Gord* v. *Needs* :—

"The proof of extrinsic facts is always allowed "in order to enable the Court to place itself in "the situation of the devisor (patentee) and to "construe his will (specification)" (*d*).

16. Extract from judgment of the Court in *Hiscocks* v. *Hiscocks*, quoted—

"All the facts and circumstances respecting "persons or property (the manufacture) to which "the will (specification) relates, are undoubtedly "legitimate and often necessary evidence, to "enable us to understand the meaning and ap- "plication of his (patentee's) words" (*e*).

17. "With respect to the particular evidence "which is admissible for the purpose of deter- "mining which of several subjects was intended "by the testator (patentee)—where the descrip- "tion in the will (specification) is applicable to "more than one subject—as the question, in such "cases, is, what the testator (patentee) *intended* "to have expressed; any evidence, which *upon*

(*c*) Wigram on Extrinsic Evidence, p. 122.
(*d*) *Ib.* p. 147. (*e*) *Ib.* p. 153.

"*general principles* is relevant and material to "that inquiry, will be admissible" (*f*).

18. "In point of principle it is submitted, "that a description which is so imperfect as "to be *useless as it stands: i. e.*, useless unless "it be aided *by evidence of intention*, is not dis- "tinguishable from one which is wholly incor- "rect" (*g*).

19. "A written instrument is not ambiguous "because an ignorant and uninformed person is "unable to interpret it. It is ambiguous only "if it be found to be of uncertain meaning when "persons of *competent skill and information* are "unable to do so" (*h*).

20. "Words cannot be ambiguous because "they are unintelligible to a man who cannot "read: nor can they be ambiguous merely be- "cause the Court which is called upon to ex- "plain them may be ignorant of a particular "fact, art, or science, which was familiar to "the person who used the words, and a know- "ledge of which is therefore necessary to a right "understanding of the words he has used. If "this be not a just conclusion it must follow— "that the question whether a will (specification) "is ambiguous, might be dependent—not upon "the propriety of the language the testator "(patentee) has used, but upon the degree of "knowledge, general or even local, which a "particular judge might happen to possess; nay,

(*f*) Wigram on Extrinsic Evidence, p. 16.
(*g*) *Ib.* p. 167. (*h*) *Ib.* p. 174.

" the technical precision and accuracy of a scien-
" tific man might occasion his intestacy (the in-
" validity of his patent)—a proposition too ab-
" surd for an argument " (*i*).

21. " Language may be inaccurate without
" being ambiguous, and it may be ambiguous,
" although perfectly accurate " (*k*).

22. " The circumstance that the inaccuracy is
" *apparent upon the face of the instrument*, can-
" not, in principle, alter the case " (*l*).

23. " The language may be *inaccurate:* but if
" the Court can determine the meaning of this
" inaccurate language, without any other guide
" than a knowledge of the simple facts, upon
" which—from the very nature of language in
" general—its meaning depends, the language,
" though inaccurate, cannot be ambiguous " (*m*).

24. " It follows that, in all cases, the applica-
" tion of the extrinsic evidence, to which the
" Fifth Proposition refers, (*i. e.*, extrinsic evi-
" dence relative to every material fact in the
" case,) must precede any declaration which a
" Court can have a right to make, that a will
" (specification) is ambiguous " (*n*).

25. " It is the incongruity or want of cor-
" respondence between the language and the
" facts, which raises a *latent* ambiguity in the
" common acceptation of the term " (*o*).

26. " As the meaning of inaccurate language

(*i*) Wigram on Extrinsic Evidence, p. 174.
(*k*) *Ib.* p. 175. (*l*) *Ib.* p. 177. (*m*) *Ib.* p. 176.
(*n*) *Ib.* p. 176. (*o*) *Ib.* p. 178.

" may be unambiguous, it is impossible to predi-
" cate of a will (specification) in such cases (cases
" of 'patent' inaccuracy) or in any case, that it
" is ambiguous, until the effect of bringing the
" language into contact with the facts to which
" it refers, shall first have been tried" (*p*).

27. " An instrument, the words of which are
" sensible in more senses than one, is properly
" speaking an ambiguous instrument. But an
" instrument which points at no certain inten-
" tion is (in the language of the Courts) *insen-*
" *sible*, and not merely ambiguous" (*q*).

28. General conclusions with which the work closes.

1. " That evidence of material facts is, in all
" cases, admissible in aid of the exposition of
" a will (specification).

2. " That the legitimate purposes to which—
" *in succession*—such evidence is applicable, are
" two: *viz.*, *first*, to determine whether the words
" of the will (specification), with reference to the
" facts, admit of being construed in their primary
" sense; and *secondly*, if the facts of the case
" *exclude* the primary meaning of the words, to
" determine whether the intention of the testator
" (patentee) is certain in any other sense, of
" which the words, with reference to the facts,
" are capable. And,

3. " That intention cannot be averred in sup-
" port of a will (specification) except in the

(*p*) Wigram on Extrinsic Evidence, p. 178.
(*q*) *Ib.* p. 180.

" special cases which are stated under the 7th " Proposition—(in special cases) " (*r*).

" The writer then, whilst he admits and insists " upon the rule stated in an early page—' That " the judgment of a Court in expounding a will " (specification) should be simply *declaratory* of " what is *in* the instrument'—hopes that he " may in this place, without fear of correction, " add that, *consistently with that rule*—

1. " Every claimant under a will (every person " interested in the contents of a specification) has " a right to require that a court of construction, " in the execution of its office, shall—by means of " extrinsic evidence—place itself in the situation " of the testator (patentee), the meaning of whose " language it is called upon to declare. And " that,

2. " The only cases in which *evidence to prove* " *intention* is admissible, are those in which the " description in the will (specification) is *mam-*

(*r*) The proposition referred to is as follows: "Notwithstanding the Rule of Law which makes a will void for uncertainty, where the words, aided by evidence of the material facts of the case, are insufficient to determine the testator's meaning—Courts of Law, in certain special cases, admit extrinsic evidence *of intention* to make certain the *person* or *thing* intended, where the description in the will is insufficient for the purpose. These cases may be thus defined:—where the object of the testator's bounty, or the subject of disposition, (*i. e.*, the *person* or *thing* intended,) is described in terms which are applicable indifferently to more than one *person* or *thing*, evidence is admissible to prove which of the persons or things so described was intended by the testator."

" *biguous* in its application to each of several " subjects " (*s*).

Jarman on Wills.

I now submit the following passages from Jarman's Treatise on Wills, in which I shall as before insert parentheses pointing to the analogy between wills and specifications.

1. " The law has not made requisite to the validity of a will (specification), that it should assume any particular form, or be couched in language technically appropriate to its testamentary (peculiar) character (as a legal document relating to a manufacture). It is sufficient that the instrument, however irregular in form or inartificial in expression, discloses the intention of the maker (patentee) respecting the posthumous destination of his property (respecting ' the nature of his invention and the manner in which the same is to be performed '); and if this appear to be the nature of its contents, any contrary title or designation which he may have given to it will be disregarded " (*t*).

2. " If the context of the will (specification) presents an obstacle to the construing of the terms of description in their strict and most appropriate sense, a foundation is thereby laid for the admission of evidence showing that they are susceptible of some more popular interpretation, which will reconcile them with, and give full

(*s*) Wigram on Extrinsic Evidence, pp. 183, 184.
(*t*) Jarman's Treatise on Wills, vol. i. p. 11.

scope and effect to, such seemingly repugnant context" (*u*).

3. "Though it is the will (specification) itself—and not the intention as elsewhere collected—which constitutes the real and only subject to be *expounded;* yet, in performing this office, a court of construction is not bound to shut its eyes to the state of facts under which the will (specification) was made (prepared), on the contrary an investigation of such facts often materially aids in elucidating the scheme of disposition (the precise character of the manufacture) which occupied the mind of the testator (patentee). To this end it is obviously essential that the judicial expositor should place himself as fully as possible in the situation of the person whose language he has to interpret" (*x*).

4. "Of course parol evidence is admissible in order to ascertain what is comprehended in the terms of a given description, referring to an extrinsic fact" (*y*).

5. "Extrinsic evidence is not admissible to alter, detract from, or add to, the terms of a will (specification), though it may be used to remove a latent ambiguity; nor to vary the meaning of words; and therefore in order to attach a strained and extraordinary sense to a particular word, an instrument executed by the testator (patentee), in which the same word occurs in that sense, is not admissible: but

(*u*) Jarman's Treatise on Wills, p. 361.
(*x*) *Ib.* p. 363. (*y*) *Ib.* p. 367.

the Courts will look at the circumstances under which the devisor (patentee) makes (prepares) his will (specification)" (*z*).

Analogy between will and specification.

It may be well here just to advert briefly to the analogy which seems to subsist between a will and a specification, so far as is needful for our present purpose.

They are both documents prepared under circumstances which call for the aid of extrinsic evidence in their construction. They refer to manifold subjects unconnected with statute law and are incapable of being adequately interpreted by means of any hard, inflexible rules, without reference to particular facts probably not detailed in the instrument itself.

They are alike as being both written instruments required by law, but unlike in their respective relations to the parties interested in their contents, the will containing a scheme for the distribution of property at the disposal of the testator, the specification setting forth an invention as the subject-matter of a contract between the patentee and the public.

In their main features then these two documents have considerable points of analogy so far as regards the principles on which they are to be construed by the light of evidence external to the instrument: and it appears to me that the various passages quoted above, being read according to the alterations suggested by the words

(*z*) Jarman's Treatise on Wills, vol. ii. p. 742.

in the parentheses, will be found to contain statements in reference to the specification which persons versed in patent law will recognise as falling in with their views on the subject.

Phillips—Starkie—on Evidence.

It will be useful now to refer again to the two well-known text-writers on Evidence—Phillips and Starkie—by quoting from them certain passages relating to the "examination of witnesses."

1. "Opinion of witnesses.—The opinion of a witness in general is not evidence: the witness must speak to facts. But on questions of science or trade, or others of the same kind, persons of skill may speak not only as to facts, but they are allowed also to give their *opinions* in evidence. The opinion of medical men is evidence as to the state of a patient whom they have seen. Even in cases where they have not themselves seen the patient, but have heard the symptoms and particulars of his state, *detailed by other witnesses at the trial*, their *opinion* on the nature of such symptoms has been properly admitted" (*a*).

2. "Ship-builders have been admitted to state their *opinion* on the sea-worthiness of a ship, from examining a survey, which had been taken by others, and at which they were not present" (*b*).

3. "In an action of trespass, alleged to have been committed in making an embankment, which was said to have gradually choked up a harbour,

(*a*) Phillips and Amos on Evidence, 8th ed. p. 899.
(*b*) *Ib.* p. 900.

an engineer was permitted to prove, *from his own experiments*, what were the effects of natural causes upon that particular harbour, and on other harbours similarly situated on the same coast, and that the removal of the bank would not, in his opinion, restore the harbour."

"Where the question is, whether a seal has been forged, seal-engravers may be called to show a difference between a genuine impression and that supposed to be false. And the *opinion* of an artist in painting is evidence as to the genuineness of a picture" (*c*).

4. "Cross-examination.—The power of cross-examination is generally acknowledged to afford one of the best securities against incomplete, garbled, or false evidence" (*d*).

5. "In ordinary cases the witness ought to be examined as to facts only, and not as to any opinion or conclusion which he may have drawn from facts, for those are to be formed by a jury, except indeed where the conclusion is an inference of skill and judgment. * * * * * His (witness's) means of knowledge may be fully investigated, and if he has not had sufficient and adequate means of knowledge, his evidence will be struck out" (*e*).

6. "Questions of skill.—The general distinction is this, that the jury must judge of the facts for themselves, but that wherever the question

(*c*) Phillips and Amos on Evidence, 8th ed. p. 901.
(*d*) *Ib.* p. 907.
(*e*) Starkie on Evidence, vol. i. 3rd ed. p. 173.

depends on the exercise of *peculiar* skill and knowledge that may be made available, it is not a decision by the witness on a fact to the exclusion of the jury, but the establishment of a new fact, relation, or connection, which would otherwise remain unproved.

Not to admit such evidence, would be to reject what was essential to the investigation of truth" (*f*).

N. B.—This is followed by the mention of instances of persons of particular trades and professions being qualified to give testimony, each one in reference to subjects with which he is especially brought in contact in the usual discharge of his business.

Starkie on Evidence.

The following quotation, also from Starkie, refers to a comparison between a permanent official person, and the occasional juror chosen from the country, as to their respective capabilities of ascertaining facts from evidence.

"Were the decision of facts to be constantly referred to the same individual, the frequent recurrence of similar combinations of facts would tempt him to frame general and artificial rules, which when they were applicable, would save mental exertion in particular instances; and perhaps a laudable wish to decide consistently, and that fondness for generalizing which is incident to every reflecting mind, would tend to the same point, and would lead to the introduction of

(*f*) Starkie on Evidence, vol. i. 3rd ed. p. 174.

refined and subtle distinctions. A juror, on the contrary, called on to discharge his duty but seldom, possesses neither inclination nor opportunity to generalize and refine: unfettered therefore by technicalities he decides according to the natural weight and force of the evidence" (*g*).

Observations on foregoing statements of writers on evidence.

It may thus be observed, in reference to the foregoing statements of the law relating to the admissibility of scientific evidence, that the fundamental principle on which the whole rests is that of securing the testimony of persons, who, from the particular circumstances in which they have been placed, have had the best means of knowing the facts which they attest; the testimony of such persons being employed to furnish all facts material to the case. And this observation applies alike to any form in which the testimony may be given, whether orally or by written statements. The point is to allow no construction to be put upon a case which does not in some way—either immediately or remotely—refer to all the material facts in such case. These must be produced in evidence, and they must be obtained from the best possible source; otherwise the case is not fairly tried.

Having now considered the nature of the inquiry in patent causes, and having submitted the statements of received text-writers on the law relating to the admissibility of scientific evidence, we may go on to try the existing practice by the

(*g*) Starkie on Evidence, vol. i. 3rd ed. p. 539.

test thus supplied. It may be stated shortly that the course of inquiry in patent causes is to ascertain—what is the invention as distinguished from all that preceded it and what is its scope as against infringers? It may also be stated concisely that the law admits evidence of all facts material to such points of inquiry through the medium of those persons who are better able than all others to speak with accuracy to such facts.

3rd head.—Defects in present practice.

What then is the purpose answered by the scientific evidence in patent causes? It helps the Court to determine, whether what is in the specification is, or is not anticipated by any previous user or other publication; and also to determine as to the extent and validity, on other grounds, of the patentee's claim. It does not supersede the province either of the judge or of the jury, but informs the minds of both as to the scientific facts material to the case. It lays a foundation of facts to which the Court is to apply the law, and upon which the jury are to build their conclusion as to the rights of the parties in the action. Such is, so far, the theory of scientific evidence.

Scientific evidence to be carefully received.

It is clear however, to all persons acquainted with patent causes, that the facts generally brought in issue before the Courts are of such a nature as to call for great care in receiving the evidence. And the instances are frequent in which a judge finds himself far less assisted by the evidence than he had reasonable grounds for

expecting to be. He sees occasionally much exaggeration on the part of the witnesses, and lack of power to cope with them on scientific points on the part of the counsel examining them. This is not necessarily owing to the system as it exists in theory, for that supposes a witness unwilling to be led into exaggeration by any circumstances of party feeling, and a counsel capable of bringing out the real points that are in the witness's mind; also of reducing his testimony to its proper limits by cross-examination.

But a material cause of the imperfection referred to will become apparent, if we consider in how many cases a class of persons different from that intended by the law are called to give their testimony to the facts in question. The law, it would appear from the text-writers quoted, allows in certain cases the opinions and judgment of scientific witnesses to be received in evidence. But what do those writers plainly mean by scientific witnesses; and what are the cases in which their opinions and judgments are said to be receivable in evidence?

Phillips on Evidence.

Let Phillips answer:—"The opinion of medical men is evidence as to the state of a patient whom they have seen. Even in cases where they have not themselves seen the patient, but have heard the symptoms and particulars of his state, *detailed by other witnesses at the trial*, their *opinion* on the nature of such symptoms has been properly admitted."

"Ship-builders have been admitted to state their *opinion* on the sea-worthiness of a ship," &c.

An engineer also might be called to give his opinion in a strictly engineering case, so far as his opinion had reference to points that had come within his knowledge "*from his own experiments.*"

Seal-engravers also and artists might be called to speak to facts relating to seals and paintings (*h*).

Indeed, a scientific witness, as understood by this writer, seems to signify a person devoted to a particular branch of study, and giving evidence on points that have exclusive relation thereto.

Starkie on Evidence.

And Starkie observes:—"His (witness's) means of knowledge may be fully investigated, and if he has not had sufficient and adequate means of knowledge, his evidence will be struck out" (*i*).

"Scientific witness" not fully conversant with every branch of manufacture;

There is evidently nothing in the principle of law, as stated by these writers, to warrant the interpretation of the term "scientific witness" as meaning an individual claiming to be possessed of general scientific attainments, and in this capacity capable of guiding the Courts in actions relating to all branches of manufacture in succession. Anybody at all acquainted with the wide range of subject included within the scope of the term "manufacture," as understood

(*h*) See pages 63—64.

(*i*) See page 64.

so as to supersede practical witnesses.

in reference to patent law, will know that it involves no very serious imputation upon any man's intelligence to say that, as a generally scientific man, he is an inferior witness, on a point of detail in a particular branch of manufacture, to a person whose familiarity with the subject is the result of the exclusive practice of many years.

Woodcroft's evidence before Committee on Signet and Privy Seal Offices.

Mr. Woodcroft, a very well-known scientific witness, in his evidence before the Committee on the Signet and Privy Seal Offices, alludes to the point of the present range of existing patents not being within the grasp of any patent agent's knowledge, in terms of very decided import. This will appear from the following answers given by him to questions put by the Committee :—

Q. "Are not the patent agents practically acquainted with most of the previous patents?—A. Not one of them. I do not think any of them are acquainted with a tithe of the patents that have been granted."

Q. "Is it the fact that a person who seeks to obtain a patent generally takes no steps to ascertain whether or not a patent is already in existence for the same invention?—A. I think most inventors are of opinion that it is quite a hopeless task."

Q. "And they leave it to chance?—A. They ask the patent agent whether he knows anything of it; and I have no doubt he speaks very con-

scientiously when he says that he does not know of any such invention" (*k*).

Woodcroft's evidence worth attention.

Mr. Woodcroft is quite familiar with the difficulty of making a search among existing patents relating to a particular subject, so that such search may be relied upon as complete. He knows something also of the labour and intelligence required to form an adequate index of patents. Let his testimony, then on the point to which he speaks, have its proper weight.

But there is a great deal more knowledge than that merely of existing patents, that a man must possess in order to qualify him to give scientific evidence on any branch of manufacture that may arise, and to be a competent legal witness, while any one is to be found who has received a special training in the particular branch of manufacture brought under the notice of the Court.

Now here I may paraphrase the statement of Mr. Starkie before referred to (*l*), and it will be found (when read as follows) to bear upon the present point.

Starkie on Evidence paraphrased.

Were the scientific facts in patent causes to be constantly attested by the same individual, "the "frequent recurrence of similar combinations of "facts would tempt him to frame general and "artificial rules, which, when they were appli-"cable, would save mental exertion in particular "instances; and perhaps a laudable wish to" bear

(*k*) See Report of the Committee on the Signet and Privy Seal Offices, p. 65.

(*l*) See page 63.

consistent testimony, "and that fondness for "generalizing which is incident to every reflect- "ing mind, would tend to the same point, and "would lead to the introduction of refined and "subtle distinctions." A witness, "on the con- trary, called on to discharge his duty but seldom, possesses neither inclination nor opportunity to generalize and refine: unfettered therefore by technicalities he" gives evidence "according to the natural weight and force" of the facts within his knowledge.

Observations on Starkie.

This writer, it will be seen, philosophically refers to the particular natural constitution of the learned and practised mind, as in some circumstances operating as a bar to the full consideration of facts submitted to it, and being for practical purposes so far less suited for dealing with simple facts than the less learned and less practised mind. The comparison is not instituted with a view of determining which description of mind is available in the greater number of instances, but which of the two in a particular instance is the freer to receive impressions from facts to be given by him in evidence. There are undoubtedly instances in which the learned and practised mind is indispensable, but they are not universal: and there is a particular province assignable to the exerciseof this description of mind, but it has its limit—it is not usefully applied out of its sphere—it cannot do the work that properly belongs to another sort of mind. It has pleased our Creator to make the

particular quality and bias of our individual minds assumed in their growth, dependent upon the particular training, external and internal, which they receive in the course of life.

Now the present much-esteemed writer has appealed to the natural fact that a "fondness for generalizing is incident to every reflecting mind," but he treats it as a fact which although in some instances it may yield facilities in aid of the judgment, yet in others it presents obstacles to the formation of a right conclusion inasmuch as the mind is, in such cases, addressed on a particular point to which it does not naturally respond.

There is more in the fact thus referred to than is popularly appreciated. Two witnesses may utter the same words and yet their testimony may be of very different value, the difference consisting in their respective means of forming a right judgment upon the precise point submitted to them. And this remark applies not only to the amount of knowledge possessed by an individual, but also to the quality and bias of his mind produced by the circumstances in which he has been placed. What has thus been shown from received text-writers on evidence, as to the kind of persons whose testimony is admissible on scientific points, may serve also to account in some measure for the imperfection so often complained of from the bench (during the progress of patent causes) as attaching to this kind of testimony.

Defects in present practice partly accounted for.

But something may be noticed as to the order Order of

scientific evidence.

in which scientific evidence is to be received in Court.

Observations on Phillips.

In the passage from Phillips quoted at page 63, it is said that medical men, who have not seen a patient, but who have heard the case "*detailed by other witnesses at the trial*," may give their "*opinion* on the nature of the symptoms" described, and that such opinion "has been properly admitted" as good evidence. This is to say, that after the facts of a case involving scientific points have been duly laid before the Court, then a scientific man, familiar with cases analogous to that referred to, may give evidence in the form of an opinion as to the philosophical bearing of the facts already given in evidence by witnesses who could speak accurately to the facts, but not to the philosophy or science involved in them.

Instance of defect arising from improper order of scientific evidence.

Now my memory tells me of one case (a *scire facias* patent cause) in which there was manifest imperfection in the evidence as given, simply because the witness who could speak well to the facts (the work performed by the machine), but could not tell upon what scientific principle the machine accomplished its work, was called after the witness who, as a generally scientific man, could speak intelligently on the latter point. He was not examined as thoroughly as he might have been, had the Court been in previous possession of the practical facts of the case, and the witness who came after him could not speak on the theory established by such facts.

The mere allusion to such a case as this, will suggest to the minds of persons conversant with patent causes many instances of a similar nature.

Another cause of imperfection has been mentioned: *viz.*, the occasional lack of power on the part of the counsel examining the scientific witness to cope with him on scientific points.

Phillips on Evidence.

Phillips (quoted at page 64) says :—"The "power of cross-examination is generally ac- "knowledged to afford one of the best securities "against incomplete, garbled, or false evidence."

Observations on Phillips.

But this supposes a power in the examiner to elicit the whole truth from the witness. If he is unable to put a question that goes home to the real point in issue, so as to cut off all refuge in statements of half-truths, his cross-examination is not to be depended on.

The discovery is often made by the judge in proceeding to sum up the evidence, that the scientific witnesses have pledged their judgments to statements the most conflicting and perplexing. And the reason of this sometimes is, that the direct answer to the questions put to such witnesses has admitted statements which did not exclude error. The witnesses in such cases gave answers to the questions that were true considered affirmatively, but they contained no necessary denial of error: so that the witnesses, being respectively questioned as to facts or truths which they could attest, gave their testimony

accordingly, but did no more: hence the discrepancy alluded to.

It is scarcely to be expected that scientific witnesses are likely to lead counsel in such a manner as to suggest the most pertinent form of question required to elicit the most complete statement; and it is to be borne in mind, that the common injunction to ordinary witnesses to give direct answers to the questions of counsel can be readily and perplexingly complied with by scientific witnesses, who, from frequent practice in the witness-box, have acquired a degree of skill that is proof against the efforts of the cross-examining counsel, should he be at all weak on the scientific points raised at the trial.

It will hence appear that apparent misstatements on the part of scientific witnesses are not always real; at any rate so as to involve acts of falsehood committed by them: at the same time party feeling is very likely to produce exaggeration, and of course this is not to be justified in any degree.

The observations that have been made apply equally to witnesses called on behalf of plaintiffs and of defendants—of patentees and of infringers of patents; but it is well-known that there is a kind of scientific witness that is most adapted for the plaintiff, and another for the defendant, in a patent cause. The man skilled in the power of expanding narrow points suits the plaintiff, and he who can multiply plausible

Scientific witnesses divisible into classes.

objections to the invention as a substantive thing suits the defendant. Now the state of things which fosters the growth of two rival theories systematically called into exercise has a tendency to substitute an art or science of giving evidence for a plain disclosure of facts.

Scientific evidence become an art or science.

All this may be said without imputation upon the persons accustomed to the practice of giving evidence; the fault lies rather with those who employ them in the manner calculated to produce the state of things complained of.

What has thus been said as to the existing class of scientific witnesses will show in some measure to what kind of tests the specification of a patent is likely to be subjected. It will show that the present practice inadequately carries out the law as ascertained by reference to received text-writers on evidence.

Remarks how limited.

It will be seen that my remarks relative to the existing practice, as it respects the mode of receiving scientific evidence, have had reference solely to the quality of the witnesses. This is not because there is nothing to be said as to the nature of the facts brought in evidence in patent causes; but because it appears to me that lawyers already know how to take care of points of this kind; their chief difficulty being with the persons whom they of necessity call in to their aid when investigating scientific points.

It has been shown that the will is a document in many respetsc analogous to the specification,

and the former has been referred to because the practice with respect to the mode of construing its contents with the aid of extrinsic evidence is governed by approved principles which experience has developed. And yet there is no such system in this department of practice as that of a class of professed witnesses called to give evidence on the contents of will after will—their peculiar skill in dealing with this particular kind of document constituting them qualified to guide the Court by their judgment on the facts of each several case.

In bringing my remarks on the present head to a conclusion it may be well just to say a few words as to the evil of allowing the specification to be exposed to the liability of inadequate construction, through the application of imperfect or sophisticated scientific evidence to its contents.

Bearing of defective scientific evidence on specification.

Considering the range of subject to which the specification is to be adapted, it becomes most important to preserve it from arbitrary rules, either as to form of expression or form in any sense, that may be likely at any time to interfere with the necessary freedom as to the adoption of such language and mode of illustration as may be in the judgment of the patentee the best suited for rendering his precise meaning intelligible (*m*).

(*m*) Nothing is meant to be here asserted which is inconsistent with the point, dwelt upon at length in my work on the specification, that it is desirable as a general rule to preserve a distinct order in the development of the subject-matter of the specification, setting out, 1st, the object of the invention; 2nd, its essence; 3rd, the description of the detail; and 4th, the

Any mode of admitting evidence then, which does not afford the Court sufficient information relative to the manufacture described, does so far leave the specification exposed to the danger of being construed drily—according to its simple grammatical sense—without reference to the particular circumstances to which the patentee meant to refer, in the language employed by him. On the other hand, if the scientific witnesses be allowed to import any new features respecting the invention, there is some likelihood of the Court reading the specification under the suggested aspect, and probably of assigning to it a scope unwarranted by its language.

4th head.—Suggestions of improvement.

But it is time now to draw attention to the last head proposed for consideration; *viz.*, some suggestions for improving the present practice as to the mode of receiving scientific evidence in patent causes.

Suggestions how limited.

And it will be advisable to state at once, that the suggestions for improvement now to be offered refer simply to the adaptation of the existing law to the present advanced and advancing state of manufactures in this country—the advancement being due both to the natural growth of our manufactures by the talent and industry of our practical men, and also to the importation of inventions from abroad.

Two points

Now this point will be sought to be made out

claim. What is contended for here is the necessity of avoiding arbitrary rules as to form, not orderly development of subject; this it is desirable to retain.

considered under present head.

by a brief notice of the essentials of the law as stated above, recognised in a form of practice; and then a short review of the imperfection attaching to the system, (suggested in some quarters,) of the substitution of a scientific board for the present legal tribunal for patent causes.

1st point.—Suggestions of improvement in existing mode of receiving scientific evidence.

It is abundantly clear that the law admits scientific evidence relating to all material facts in every patent cause.

What are material facts needs not to be here discussed any further than to point out who are the persons qualified to speak to such facts; for it must always be remembered that the law in principle admits only the evidence of those persons who are better qualified than all others to attest the particular facts in question in any suit or cause.

Material facts.

What then are the material facts to which scientific witnesses have to speak? In form they consist of whatever scientific points bear upon the question of previous publication of the invention described in the specification, and also of the nature of the invention as described therein.

The material facts involved in these two questions relate to the particular manufacture described in the specification. And this is a point of essential moment to be borne in mind, especially since the progress of improvement in manufactures leads to the increasingly greater division of human agency, both as respects labour and the direction of operations. Indeed it may

be conceived that there are instances in which ten or fifteen years ago one man was habitually brought in contact with the entire mode of production of a manufactured article which now cannot be produced except by the aid of processes superintended by several men. And considerable improvement of manufacture may be found to result from this change. But then it involves the fact that, whereas formerly one man, from his habitual practice, would be qualified to give competent legal evidence as to the whole manufacture, now on the same principle he could only speak to facts relating to a manufacture within a narrower limit.

Witnesses of material facts.

That man is the most competent to speak on the material facts relating to a particular "manufacture" who has had the most intimate practical connexion with it, at the same time being an intelligent man. And it is important to be observed, that the ability to give good evidence on a real point of practical science, is compatible with general simplicity (*i. e.* unlearnedness) of mind, the test of ability in the witness here lying not in the scope of mental calibre to be found in him, but in his means of knowledge.

Two classes of scientific witnesses.

Now it appears that two classes of persons are admitted by law to give evidence on scientific or technical points: one class consisting of those who have come in actual contact with the matters or things forming the subject of investigation; the other of those who, not having done so, but being generally acquainted with similar cases

from practical observation (experiment or otherwise) are able to understand the case when described to them. And without drawing the line rigidly, it may be said, that the former class generally speak only to facts, the latter give scientific opinions. It is to be remarked however, that both classes of witnesses are confined within certain limits, the range of which is determined by the same legal principle. The competent witness is he who, up to the period of his examination has possessed the best means of knowledge.

Test of evidence.

It matters not whether the point to be elicited be one of simple fact or one of scientific opinion; the principle on which evidence is received is the same—means of knowledge is the test. This supplies the only legal reason why one man is chosen rather than another, in some instances rather than all others.

Observations on writers referred to.

And this point is illustrated by the writers above referred to, by showing that in a medical case, the scientific evidence is to be received from medical men; either such as have seen the patient, or such as are able from their admitted medical knowledge to understand the symptoms of the case when described to them. But no other class of persons would be admitted to give scientific evidence on medical cases. And this is an illustration of the general law applicable to every branch of science. It may also be further remarked, that the legal principle now spoken of, follows the practical sciences into all their sub-

divisions. For instance, it recognises the distinction between medicine and surgery; and again, their respective different acknowledged lines of practice. Again, it determines that evidence is to be received from the oculist, the aurist or the dentist, on cases relating to the eye, the ear, or the teeth. In medicine too, the practitioner whose study and experience had been devoted to one particular branch—*e. g.*, diseases of the vital organs (heart or lungs) could give best legal scientific evidence on cases relating to affections of those organs. And if we advert to the science known under the generic term "civil engineering," cases will at once arise in the mind of the reader, in which it would be utterly absurd to receive the evidence of a man on a particular point merely because he was a civil engineer.

Deductions from such writers' statements of principles.

The branches of practice in this profession, are so distinct and manifold, that many different sorts of scientific minds may be said to be produced thereby; each respective branch tending to mould the minds of its practitioners into its own form. This of course supposes that men do really have practice and throw their energies into it.

From these illustrations then it is submitted, that the law respecting the admission of scientific evidence contemplates two things; 1st, that although a man may be in form a good witness, because he is of a certain class, yet this is not to be understood as in any way ignoring the practical consequences of the division of labour above

Law on receiving scientific evidence.

referred to; 2nd, that the best witness to speak to a practical scientific point in any particular "manufacture," is he who has enjoyed the best means of attaining knowledge by reason of his most direct connexion with the order of practice in such manufacture.

Such then being the general law, (deducible from what has been shown) so far as relates to the broad principle on which scientific evidence is admissible, it may now be useful to draw attention somewhat more particularly to the distinction between the province of witnesses as to facts, and that of those who give evidence in the form of an opinion on the case as described to them. And this point will now be confined to patent causes.

Witnesses of facts and witnesses of opinions.

1. Witnesses of facts.

It has been seen that the Court looks for statements of material facts, to persons who have come in actual contact with the subject under investigation. In a patent cause then, where the main question to be tried is, 1st, what is there new in the patent? 2nd, what is its substantive character and scope? the persons usually required to supply the material facts on which the case depends, are either workmen or directors of work who have been long engaged in the particular manufacture. Their judgment is the more valuable than that of others, because, when spoken to on a particular point in connexion with the manufacture with which they are familar, their mind at once reverts to the order of practice in such manufacture; and they can

compare the alleged invention with what has preceded it, provided the questions are put to them in a practical form. This of course supposes the examining counsel to have been made thoroughly acquainted with the practical points in the case before going into Court. Such witnesses being properly examined, can say whether a competent workman would be able to follow the directions contained in the specification, and in doing so would carry the invention into practice, or whether he would thereby produce something different from the invention claimed as new. It would be easy to multiply authorities to show that the practicability of the directions in the specification is a question addressed to persons of ordinary skill. One only shall suffice; it is from Baron *Parke*, in the case *Neilson* v. *Harford*.

Form of examination of practical witnesses as to specification.

Parke, B., to the jury. "It is to be a person "only of ordinary skill and ordinary knowledge. "You are not to ask yourselves the question, "whether persons of great skill—a first-rate en- "gineer, or a second-class engineer, as described "by Mr. Farey—whether they would do it; be- "cause generally those persons are men of great "science and philosophical knowledge, and they "would upon a mere hint in the specification "probably invent a machine which should answer "the purpose extremely well; but that is not the "description of persons to whom this specifica- "tion may be supposed to be addressed—it is "supposed to be addressed to a practical work- "man, who brings the ordinary degree of know-

Parke, B., on practical witnesses.

" ledge and the ordinary degree of capacity to the " subject (*o*)."

Observations on Parke, B.

The kind of witness spoken of is a man who may be said to know his business, but is not possessed of any particular genius or scientific knowledge distinguishing him from his class. The word " workman," as used by the learned Judge, may also include a director of work, whose habitual occupation leads him to become " practical," or conversant with the details of practice.

Such witnesses would be able also to supply material facts on which the novelty of the invention might be tested; they could show in what its practical character really consisted in such a manner as to aid the Court in determining how far it had or had not been anticipated by alleged " public user," or other mode of publication. The facts elicited from these witnesses would likewise assist the Court in assigning the due legal scope to the language used by the patentee in his specification.

Witnesses supposed to speak truth.

Of course it is here supposed that witnesses are willing to speak the truth, as they are bound on oath to do. And it is not to be lost sight of that patentees are greatly exposed to difficulty from the occasionally unscrupulous statements of " practical" men, particularly those whose work seems likely to become displaced by the new invention. But no system is independent of the ordinary passions of men; it must deal with men as they are.

(*o*) See Webster's Reports, p. 314.

Notwithstanding the difficulties however which, it must be confessed, are presented by the tendency of the men spoken of to speak unfairly, yet it is to be borne in mind that there are powerful checks provided by the law in the practice of cross-examination. Counsel assisted by the more learned scientific witnesses are likely to be able to reduce the testimony of these less learned and unpractised witnesses to its proper dimensions.

But it may be time now to turn to the consideration of the class of scientific witnesses who are admitted to give evidence in the form of an opinion on the case as described to them. It is manifest that there is a great practical difference between the practical facts of the case reaching such men out of Court, and coming before their attention in Court. The evidence as to facts of a sanguine witness frequently turns out on the day of trial to be very different from what he by his assertions professed it would be. Now this is a point of great importance in its bearing upon the value of the opinion to be afterwards given as evidence. We all know that a conclusion may be very sound from given premises, but the real point in the case may lie in the accuracy of the premises. A scientific man may be entrapped into the formation and utterance of an opinion correct in itself, scientifically considered, but wrong because founded on a wrong statement of facts.

Witnesses of opinions.

Importance of right knowledge of facts to scientific witnesses

Counsel too examining this higher class of scientific witness will be the better able to elicit a valuable opinion from him in proportion as

and to counsel.

they are themselves fortified by a knowledge of practical facts. It is indeed their present want of knowledge of these facts which, in a great measure, prevents them from being able adequately to examine the scientific witness. The difficulty does not arise from a want of intellectual power in the counsel. It is no unusual occurrence for the Court and jury to witness the display of great ability on the part of counsel as to ingenuity of cross-examination, while at the same time the fundamental facts in the case are untouched, or at any rate do not occupy their proper position in the investigation. Counsel, then, are interested in having the practical facts of the case brought before them in a more trustworthy shape than as they frequently appear in the instructions which they receive out of Court. In fact, an accurate starting on a true foundation of facts is indispensable in all trials.

Counsel, why sometimes unable to cross-examine thoroughly.

Particular class of present witnesses.

On the question of novelty some members of the class of witnesses now being considered can speak to facts different from those attested by the class of witnesses before spoken of. They can give evidence as to publications in printed books, and as to the contents of enrolled specifications anterior to the date of the patent. Being accustomed to these documents, and having greater means than others for making searches, they can assist the Court more effectually in exhausting the objections alleged against the patent on the score of want of novelty. And, as to their comments upon the contents of specifi-

Particular services of such witnesses.

cations, there is no doubt the Courts have at times been more led by them than perhaps it would be consistent with their dignity to acknowledge. It is due to these witnesses to say that they have in this manner materially aided the Judges, who in many instances have acknowledged their services, and sometimes have adopted their compendious expressions as those most characteristic of the peculiar features of the invention under trial.

Although therefore scientific witnesses of this higher class are not to be expected to supply the fundamental facts in patent causes, yet they can aid the Court most materially in resolving those facts, and referring them to their proper heads in the inquiry proposed for judicial determination.

Scientific witnesses how far disqualified by having drawn specification.

There is still a class of these witnesses, concerning whom it may be right to draw attention to one point, viz., the question as to whether the fact of their having drawn the specification is any reason why they should not be called to give scientific evidence upon it. Expressions of opinion more vehement than intelligent are common on this point. To my mind the question admits of discussion. At any rate it appears to me that the fact of a man being familiar with the reasons why a particular phrase has been adopted in the specification, (and perhaps himself the author of that phrase) is undoubtedly calculated to bias his mind in favour of such phrase. Such a man is in danger of exaggerating the importance of the particular expression. At the same time there

may chance to exist reasons why his very knowledge in this way may render him highly serviceable to the Court, provided he is adequately examined.

And now it may seem that my observations as to the inability of counsel in some instances to deal adequately with scientific witnesses, have suggested that counsel are not the persons to be employed for this purpose.

Counsel more competent than others to examine witnesses.

My opinion on this point is far otherwise. In my judgment no class of persons are so well calculated to conduct investigations as lawyers. The legal mind is pre-eminently a sifting mind. The abstract method of examination is understood well by lawyers, but in cases relating to patents, they require assistance in the concrete subject under trial to prevent them from sacrificing the merits of the case to accuracy of legal form. It has been usual to concede so much to counsel, that it has appeared to me necessary to point out the limit in this direction, which an observation of their proceedings in patent causes has led me to assign.

But notwithstanding what has been said, I repeat my conviction that the well-trained lawyer is the man to conduct a searching investigation of facts and principles, but he must be content to take instruction on particular subjects, and it becomes him to pay due respect to the judgment of those who are competent to direct him in scientific points. The lawyer whose faculties have been developed by a thorough training in a

course of reading in exact science, followed by practice in all the varied subjects brought successively into Courts of law, is likely to acquire a mental adaptation for the work of examination into facts, and also of examination of persons.

It is time now to bring these suggestions of amendment to a close by saying what is intended by them.

Statement of points under present head.

The leading point advanced under this head has been based upon two assumptions, 1st. That the development of manufactures has outgrown the capabilities of the usually adopted mode of receiving scientific evidence in patent causes. 2nd. That the law as it stands affords adequate scope for a due reformation of the practice.

Witnesses of facts.

On this foundation it has been asserted that scientific evidence may be brought to bear advantageously in patent causes, by first examining those witnesses who can best speak to the practical facts of the case, and thereby laying a ground whereon to build the theory of the case to be supplied by scientific witnesses of a higher grade.

Witnesses of opinions.

It has been shown that the most highly scientific witness may be at fault as to giving valuable evidence, if he be examined hypothetically instead of practically: but it has also been submitted that he can effectually aid the Court if adequately examined.

Witnesses who have drawn specification.

A question however, has been slightly adverted to which is of considerable importance respecting this latter class of scientific witness:—viz., whether he is to be excluded who has drawn the

specification. Be this point determined as it may, it is clear that the person who has been rightly judged capable of drawing the specification, is a man who may furnish instructions for

Employment of such witnesses as instructors of counsel rather than as witnesses.

counsel. And it would be well if persons competent to the task of drawing specifications, and confining themselves to the study of patent questions were consulted more generally upon the form in which the substantial points of the case should be placed before the Court. I am not alluding to points of legal form applying to law cases generally, but points of patent law as distinguished from other law, and as connected more or less with points of physical science, and relating to manufactures. It may indeed be questioned whether the witness-box is in all cases a legitimate field for the exercise of this man of science in trials of patents, but there can be no doubt of the value of his assistance in shaping the case for Court, and probably of suggesting scientific questions to counsel during the progress of the cause.

Counsel.

Then as to counsel; a strong conviction has been expressed that they are from their special training, peculiarly adapted to examine witnesses and present cases to the Courts: but then in order that they may be able adequately to deal with subjects like patents, they must be content to receive and act upon competent scientific instruction in the case.

Comparison of suggested practice with that existing.

And this system of improved practice is suggested in place of that now existing, wherein

scientific evidence consists mainly of an array of scientific opinions on one side, set against conflicting opinions on the other side, these opinions frequently resting upon mere hypotheses, instead of upon practical facts. The opinions thus constituting the ordinary scientific evidence are those, in many instances, of a class of witnesses who have long been in the habit of giving scientific evidence successively on each branch of manufacture involved in patent causes, and thereby skilled in the art of giving evidence so as to baffle the power of the examining counsel. And the counsel under this system have not that trustworthy foundation in practical facts which is necessary to enable them to test the opinions of the witnesses, and therefore are so far unqualified to elicit an accurately defined opinion from them.

2nd point under present head. Imperfection of "scientific" tribunal.

The present head of our subject may now be concluded by a brief reference to the imperfection necessarily attaching to a scientific, in place of a legal, tribunal.

And this point will be treated by citing and remarking upon a passage from the evidence of a well-known scientific witness, before the Committee already referred to. The witness is Mr. Carpmael. The passage alluded to is towards the end of his evidence, and is as follows:—

Carpmael's evidence before Committee on Signet and Privy Seal Offices.

"There is one thing that I would state generally, "and it is this; that ever since I have been ac- "quainted with the business I have heard it "urged that the Attorney-General is an exceed- "ingly improper man to decide these matters,

" and that judges and juries are exceedingly bad
" tribunals. I can only say this, that I should
" be sorry to see the day when scientific men
" should be made judges in place of witnesses.
" I am a scientific man myself, and I have been
" engaged, I believe with only one or two excep-
" tions, in all the cases that have taken place
" during the last fifteen years, and I should be
" sorry to find myself applied to as a judge to
" decide; first, whether a patent should be taken
" out; and secondly, whether, a patent being
" taken out, that *A.*, *B.* or *C.*, was an infringe-
" ment upon it or not. I am quite sure that
" there is a predisposition in the minds of scien-
" tific men in the particular manufacture in which
" they have been engaged that prevents them
" from judging fairly when they hear the evidence
" of other scientific men. But when we come
" before a judge, particularly one who has had
" the opportunity that I have before spoken of,
" with reference to the Attorney and Solicitor
" General, and a jury totally unacquainted with
" the matter, and we have witnesses both for and
" against examined, a judge and jury will in
" every case decide well: such certainly has been
" the result heretofore. I can say this, that if
" there are defects in the decisions of judges and
" juries, there would be greater if scientific or
" legal commissioners were resorted to. I think,
" if the present Committee were to inquire of the
" Attorneys-General that have been, such men
" as Lord Campbell, the present Lord Chief

" Baron, and the two Lord Chief Justices, that
" they would bear me out in the view that I have
" taken upon it. They are all men who have
" been Attorneys-General, and they are men who
" thoroughly appreciate the position in which a
" judge is placed with regard to patent causes"(*p*).

Observations on Carpmael's evidence.

Now it is needless for me to prove Mr. Carpmael to be an especially good witness on the points to which he speaks. It will be admitted that he is so. His means of knowledge are unquestionable. What then does he say? He tells us that ever since he has been acquainted with the business of patent agency, the assertion has been reiterated, "that judges and juries are ex-
" ceedingly bad tribunals" for patent questions, and that he should be sorry to see scientific men
" made judges in place of witnesses." Mr. Carpmael had been twenty-seven years in practice, and had been engaged in nearly "all the cases that
" have taken place during the last fifteen years" when he said this.

Objections to existing tribunals, nothing new.

Notwithstanding the repeated attacks, extending over a long series of years, upon the constitution of the existing tribunal for patent causes, no better tribunal has yet been found, and I am deeply sensible of the truth of Mr. Carpmael's allusion, in a former part of his evidence, to "the
" admirable decisions we have in the books upon
" patent cases, and which are cited in all parts of
" the world."

Excellence of existing judgments.

(*p*) See Minutes of Evidence before the Committee on the Signet and Privy Seal Offices, p. 33.

Let the advocates for scientific judges point to any documents containing the judgments of scientific men expressed in due form, that when laid side by side with those to which Mr. Carpmael refers, will convict the latter of imperfection.

Disqualification of "scientific" judge.

By scientific judge, as distinguished from legal judge, I understand a man whose training has been in physical science instead of in law. And those who contend for the merits of the scientific judge base them upon his practical knowledge of manufactures. But to become practically acquainted with manufactures involves a devotion of time and study to them, to the exclusion of other subjects of study. This exercise, while it opens the mind to practical points, tends to unfit it for the practice of resolving those points according to the established principles of abstract science. This is an important intellectual disqualification in a judge. But Mr. Carpmael speaks of another. "I am quite sure, (he says,) "that there is a predisposition in the minds of "scientific men in the particular manufacture in "which they have been engaged that prevents "them from judging fairly when they hear the "evidence of other scientific men."

2nd disqualification.

Mr. Carpmael does not, I apprehend, here impute more than is due to the constitution of human nature. He does not mean to say that these men are less truthful than other men; but that the circumstances in which they have been placed have a tendency to produce the result of which he speaks. Still what he says does raise a

point of judicial disqualification as attaching to scientific judges.

Those judges who have passed through the office of Attorney-General are spoken of by Mr. Carpmael as being peculiarly qualified to try patent causes. They have, by their practice in relation to patents during their holding of this office, gone through a kind of special training for their subsequent duties as judges in such causes. Having had to try points of identity between different inventions, they become thereby prepared to deal with other points arising in patent causes.

Training for judge in patent causes supplied by practice of Attorney-General.

But it will be readily seen why this sort of practice tends to train the mind for the higher judicial exercise. Patent questions do essentially resolve themselves into questions of comparison of the invention in the patent with what is alleged to have been previously known to the public on the one hand, and with that which has been done in alleged violation of the patent on the other. If, then, an Attorney-General acquire an aptitude for skilfully determining the questions of identity between inventions in the comparatively simple form in which these questions arise at oppositions to his granting reports, he has been so far learning the business of a judge, and to deal with questions of a more deeply involved nature. It is true, they are generally short points that come before him at the hearings referred to; but the mental exercise for him is of

the same character as that called out by the more expanded form of trial in Court.

Present head concluded.

It does not appear to me desirable to extend my remarks on the natural insufficiency of scientific tribunals, as compared with those at present existing; enough having been said to express my own strong conviction of the truth of Mr. Carpmael's assertion, "that if there are defects in the "decisions of judges and juries, there would be "greater if scientific or legal commissioners were "resorted to." And here the present head relating to suggestions of improvement in practice may be concluded, by submitting that they are untouched by any suggestion of a scientific, in place of the existing legal, tribunal.

Conclusion.

It will be useful now, in conclusion, to advert briefly to the main purport of this work as disclosed in the foregoing pages.

Object of work stated.

Its chief object has been to exhibit the constant principle of the law as it has come down to us, unbroken by occasional defects in practice; and that inasmuch as considerable imperfections have arisen in the mode of receiving evidence, owing in great measure to the great development of manufactures, real practical reform will consist in amending the practice in such a manner

as to restore it to greater consistency with the acknowledged law.

Patentable invention

In furtherance of this design, the nature of patentable invention as to first principles has been stated. It has been spoken of in this way, both in relation to the exact terms by which it is characterized in the Statute of Monopolies, and also to the general features respecting its nature which may be recognised in the statements of the authorities. Under the one relation it has been shown to be a new manufacture, and under the other an embodied principle.

a new manufacture.

In adverting to the condition of novelty of manufacture allusion has been made to the existing anomaly of practice in requiring separate patents for protecting inventions in each separate part of the realm; while the inventions to be considered new in any one part have to be new all over the realm.

On this subject, it may be worth while here to notice a recommendation of the Committee on the Signet and Privy Seal Offices.

"It appears (say the Committee) that, previously to the passing of the Acts of Union, patents extending over the three kingdoms were sometimes passed under the Great Seal of England alone; and we see no real practical inconvenience which would arise from permitting such a course to be pursued at the present time."

Patentable invention an embodied principle.

Respecting the theory proposed by which to try the patentable character of inventions, it rests upon the assertion that there is in each in-

vention what may be called a spirit or principle, which constitutes its essential nature, just as there is in each man an individual soul, which is, in the most real sense, himself. The analogy is referred to, of course, purely for the sake of illustration; but it does seem to make clear the point that, in both instances, that part of the entire constitution (of the person or thing) which is unseen, but still existent and susceptible of being recognised, is just that which gives individual character to the person or thing.

And lest the point so put should seem too abstract for practical utility, some instances were given of its reference to patents that have undergone legal investigation, and from the reasoning on these instances was deduced the inference, that the principle is applicable to all patents. In submitting this point it became necessary to answer some objections which may be conceived to arise in the minds of persons to whom the point may seem a novelty.

Still it was admitted that the point requires guarding from sophisticated treatment, and with this view the tendency of the present mode of receiving scientific evidence in patent causes was examined.

Scientific evidence.

When the nature of the inquiry in patent causes had been seen, and the principle of law respecting the admission of scientific evidence ascertained from esteemed writers, then it appeared that there were serious defects in the existing practice. It appeared that the progress

Defects in practice.

of manufactures had entirely outgrown the limits of any individual's knowledge, and therefore that the system of treating a man as thoroughly knowing each manufacture in succession is a system based in error. Besides this, an evil was noticed as inseparable from the very nature of the present mode of receiving scientific evidence from practised witnesses; viz., that it tends to the elaboration of an art or science of giving evidence to which the special facts of the case have to bend. The remarks that were made however were confined to the system, and did not reflect upon the men whose services have been, by the force of habit, thus employed. Indeed, testimony was borne to their intelligence in directing the Courts to the adoption of appropriate terms in which to characterize inventions.

Scientific evidence—remedy proposed.

Then came the suggestions of a remedy for such of the defects as are to be met by any general arrangements applicable to all cases.

The remedy proposed consists of a plan of examining first those witnesses called "practical," who can, by their testimony as to *facts*, lay a foundation upon which may be built the superstructure of theoretical *opinion* derived from the higher class of scientific witnesses. In this manner, it is conceived, that the judge will be much more effectually assisted than at present in obtaining materials for forming an accurate judgment upon the points in issue before him. Thi plan is also likely to obviate, in a great measure, the chance of the recurrence of such conflicting

scientific testimony as has been frequent, by enabling counsel to test the opinions of the scientific men in a much more searching manner.

A suggestion has also been thrown out, that it would be advisable to adopt more extensively the practice of consulting persons conversant with the details of patent law, before determining in what form of substantial statement the case is to be laid before the Court. Such persons can go straight to the essential points in the case, and separate therefrom all things that are merely incidental to the main idea. They can do this, not as lawyers, not as scientific men, but as persons knowing the rationale of patent cases (*o*).

It needs scarcely to be added, that the above suggested scheme was cleared from interference with, by that proposal which does not seem to acquire strength from its age and constant repetition; viz., the substitution of a scientific, for the present legal, tribunal.

(*o*) It was also suggested, in reference to these persons, that they might be more usefully employed in this capacity than as witnesses; and this reason may be assigned for this view, viz., that their knowledge of the details of each case, as it arises (exhibited by them in Court), is mainly due to the special instructions which they have received.

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