



SATURDAY, NOVEMBER 9, 1929.

CONTENTS.

	PAGE
The Grant of Invalid Patents	713
Chemistry for Students and Others. By A. A. E.	715
The Vegetation of New Zealand. By V. S. S.	717
British Rainfall and Weather Reports	718
Archæology of Malta. By V. G. C.	719
Our Bookshelf	720
Letters to the Editor :	
Early Rhodesian Mining and Zimbabwe.—Prof. J. W. Gregory, F.R.S.	723
The Late Palæozoic Glaciation.—Dr. G. de P. Cotter	723
New Phenomena in a Sounding Dust Tube.—Prof. E. N. da C. Andrade and S. K. Lewer	724
Dew: Does it Rise or Fall?—Prof. J. B. Cohen, F.R.S.; Right Hon. Sir Herbert Maxwell, Bart., F.R.S.; Dr. G. C. Simpson, F.R.S.	725
Empirical Factors in Weather Forecasting.—J. S. Dines	726
The Motion of a Lorentz Electron as a Wave Phenomenon.—Prof. A. M. Mosharrafa	726
Magnetic Reaction of Carbon Filaments.—Cedric W. Marshall	727
Rearing Experiments with Starfish and Obstetric Toads.—Prof. E. W. MacBride, F.R.S.	727
Age of the Tahitian Coral Reefs.—Howel Williams	727
Science and Parliament.—J. H. Coste	728
Properties of the Electron.—R. D. Kleeman	728
Distribution of Medical Works.—William Heine- man (Medical Books), Ltd.	728
Imperial Mycology	729
Search for an Oil-Pool in Kent. By Henry B. Milner	730
Obituary :	
Mr. Frank E. Baxandall. By C. P. B.	732
News and Views	732
Our Astronomical Column	737
Research Items	738
Structural Steels of High Elastic Limit. By F. C. T.	741
Scientific Uses of Gramophone Records. By Dr. W. H. George	741
Marine Biology in Ceylon	742
Theoretical Investigations of Ocean Currents	742
University and Educational Intelligence	743
Calendar of Patent Records	744
Societies and Academies	744
Official Publications Received	746
Diary of Societies	747

Editorial and Publishing Offices :

MACMILLAN & CO., LTD.,
ST. MARTIN'S STREET, LONDON, W.C.2.

Editorial communications should be addressed to the Editor.
Advertisements and business letters to the Publishers.

Telephone Number : GERRARD 8830.
Telegraphic Address : PHUSIS, WESTRAND, LONDON.
No. 3132, VOL. 124]

The Grant of Invalid Patents.

BRITISH justice is a pearl of great price. More specifically it may be stated that in the case of patent actions in the High Court its price ranges from £600 to £1000 a day, and that such actions may last for a number of weeks. Dr. Levinstein has performed a public service in giving prominence, in his recent address to the Bristol section of the Society of Chemical Industry, to this costliness, which is a fundamental defect in the British patent system. Owing to the high cost of patent litigation, to which he referred in language warmed by bitter experience, the consideration for which patent rights may be enjoyed is nowadays not so much the introduction of a new invention as the possession of exceptional wealth. A genuine inventor cannot, unless he be supported by very large financial resources, prevent his invention from being freely copied: for his only remedy lies in an action for infringement, and this might cost him a fortune, even if he succeeded in winning it. On the other hand, a bogus invention, embodied in an invalid patent, can be used to hamper manufacturers or to extract royalties in a manner which is scarcely distinguishable from blackmail. "Thousands of unjustified monopolies are being legally granted," says Dr. Levinstein, "and sometimes the holders threaten the very existence of those invading their privilege."

Some time ago it was estimated that there existed in Great Britain about 105,000 live patents, of which 33 had been tested in the Courts and found valid, while an equal number of coeval patents had been found invalid. Of the remainder, a large proportion must certainly have been invalid. "Is it not an abominable restraint of trade", asks Dr. Levinstein, "that we are fettered annually by the State with this enormous number of monopolies which, if exercised, would be improperly exercised? Lying unexercised, each one is a latent danger to the merchant adventurer, an unnecessary peril of the sea of discovery."

Various remedies have been proposed for this unfortunate state of things. The British Science Guild, in a report which has formed the basis of all recent discussions of patent law reform, made a number of proposals which would mitigate the evil to a certain limited extent. It suggested, for example, that the law with regard to unjustifiable threats should be strengthened, and that the Comptroller should be empowered to try infringement actions by consent of the parties. But the latter provision could not prevent the abuse of

wealth to which reference has been made. It is true that actions before the Comptroller are cheap: counsel accept lower fees, the procedure is more expeditious, less expert evidence is needed for explaining technicalities to the tribunal. A High Court action probably costs hundreds of times as much as an opposition before the Comptroller, and the latter form of proceedings is coming to be used as a cheap method of obtaining an official opinion on validity. But the trial of an infringement action before the Comptroller would not be either compulsory or free from the right to appeal, so that either of the parties could insist on going to the High Court if he wished to ruin his opponent.

The remaining remedies recommended by the British Science Guild aim at reducing the number of invalid patents granted annually by the Patent Office: it is suggested that that office should be empowered to enforce a stricter standard, at least in respect of novelty, before granting a patent. Such a provision would, to some extent, diminish the abuses which are founded on the high cost of patent litigation; but that result could be completed only if, after an adequate official scrutiny, the sealing of a patent were deemed to confer validity upon it as regards some specified issues. Alternatively, validation in respect of these issues might be conferred after a lapse of some years, as in certain foreign countries. Dr. Levinstein makes the converse proposal that the grant of a patent should confer the right to work it. This would necessitate an official search among the claims of all relevant live patents, acknowledgment of master patents, and recognition of third party rights when grants have been made in error.

From the legal profession such proposals could only meet with scandalised disapprobation. To deprive an Englishman (or a foreigner trading with Britain) of his inalienable right to embark upon ruinous litigation, or to inflict ruinous litigation on his neighbours, seems to be subversive of the natural rights of man. The justice dispensed by the High Court and the Lords of Appeal seems to be something which every citizen has a theoretical right to invoke, even if the recognition of that right tends to promote blackmail. Unfortunately, we have to choose between an ideal justice, accessible only to millionaires, and some more rough-and-ready form of that commodity, less infallible but more serviceable to the ordinary conduct of industry. Let us therefore examine some of the issues which have to be considered by the High Court when it determines the validity of a patent, and ask what would be the consequence of allowing

them to be settled administratively, after an adequate scrutiny, at the time when a patent is sealed or after the lapse of a given interval.

One of these issues is 'novelty' as determined by documentary evidence; prior user, which arises less frequently in modern litigation, would need to be discussed separately. Every patent agent and every examiner in the Patent Office construes hundreds of specifications in the course of a year. The number of documents relating to his special industry which he construes, and his familiarity with the technical details of that industry, far exceed the equipment in these respects of a High Court judge, who may never have turned his attention to the subject until it is explained to him by expert witnesses. The issue is one which requires technical understanding rather than profound legal knowledge. Provided, therefore, that the novelty of the inventions were first investigated as fully as might be practicable, more good than harm would be done if the sealing of a patent were deemed to confer, immediately or after an interval, immunity from attack on the issue of documentary anticipation. Mistakes would presumably be made by the Patent Office from time to time: but the evils arising from such mistakes would be far less serious than the evil arising from the uncertainty which prevails as to the validity of patents.

We come to the issue of 'subject-matter'. The *quale* of subject-matter is already handled by the Patent Office, which may grant patents only for inventions having the nature of a manufacture. *Quantum* of subject-matter, on the other hand, is an issue reserved entirely for the Courts: in order that a patent may be valid, the invention which it protects must differ from previous inventions, and from previous industrial practice, to such an extent that inventive ingenuity was necessary in the devising of it. Normally this issue is identical with that of novelty: only in border-line cases, where the inventive step is very small, does it become difficult to determine whether the required degree of inventive ingenuity is present or not.

The matter has been rendered mysterious by a legal fiction to the effect that inventive ingenuity is something which must be either present or absent: that it can be ascertained qualitatively and not quantitatively. As a matter of fact there are infinite gradations of ingenuity: a sparrow exercises a scintilla of ingenuity when it fits a nest into a hole of new and unfamiliar shape. Since the quantitative standard of ingenuity necessary for a valid patent is thought of as qualitative, each judge and each expert witness refers unconsciously

to his own arbitrary and independent standard. The problem is stated by asking whether a skilled workman, possessed of the knowledge which was common at the date of a given invention, could have devised the latter without exercising ingenuity. The conundrum to be solved by the learned Court is almost as difficult as that scholastic one, *utrum chimæra, bombinans in vacuo, comedere possit secundas intentiones?* The Court has to ascertain what might have been done a long time ago by a fictitious workman, in circumstances which never occurred, with the aid of an abstraction called 'common knowledge' the limits of which nobody can any longer remember, and subject to an undefined quantitative restriction which is erroneously apprehended as qualitative.

As might be expected, the judicial decisions in these matters are uncertain and conflicting. In *Bonnard v. L.G.O.C.*, for example, the three judges of the Appeal Court were just as unanimous in attributing ingenuity to the invention as the five Law Lords were in denying it. Such issues could be settled more inexpensively by the tossing of a coin; and as they arise when the invention is of small extent and therefore of small merit, no great injustice could be done if they were settled adversely before the sealing of a patent. Administrative settlement of the issue would be particularly suitable if the present standards of 'subject-matter' were to be raised, and if inventions which did not reach the new standard could be made the subject of short-term patents. Mistakes would be made, inevitably: some deserving inventors would have to content themselves with short-term patents having the disadvantage of very narrow claims. But the injustice done in this way would be negligible in comparison with that which arises from the issue of floods of paper patents the validity of which is uncertain. "I am convinced", says Dr. Levinstein, "that the time to determine the state of common knowledge is before the grant of a patent, not years later: the place the Patent Office, not the Law Courts." Moreover, if mistakes are to be made, let them be made at an early stage, before a man has risked his capital on a perilous venture.

Another issue frequently fought out in Court is that technically known as 'utility': the Court has to decide whether the invention, in so far as it is described in the specification, is practicable.

In the case of mechanical and electrical inventions it is very often possible to determine, without experimental trial, whether these inventions are in principle practicable or not: but this is not always possible, and in the case of chemical inven-

tions it is rarely possible. It was suggested, however, by the late Dr. Ehrhardt that upon an inventor's furnishing the Patent Office with satisfactory evidence of the sufficiency of his description and the practicability of his invention, his patent should be relieved from the risk of subsequent invalidation on those issues. The proposal is by no means free from objection, but even so, it is possible that the evils arising from an attempt to settle 'utility' at an early stage might be less than the evils which actually arise from uncertainty as to the validity of the 20,000 patents which are so light-heartedly granted every year by the Crown.

The above proposals will seem to members of the legal profession to merit nothing but contempt. But it must be remembered that—apart from the question how far technical inventions can be really understood by a non-technical court—the judicial system is only valuable in so far as it is available for use. Its high cost prevents it from being available to any but the very wealthiest litigants, and makes it possible for them to defeat the ends of justice. What is needed is some more rough-and-ready method of weighing the validity of patents, some method which should be cheap enough to be generally useful even though it be not infallibly just. A miscarriage of justice early in the life of a patent may be of minor consequence, whereas at a later stage it may involve the loss of enormous capital outlay. If the issues of documentary anticipation and subject-matter, and possibly also utility, could be summarily settled, after an adequate investigation, at an early stage in the life of a patent, the advantage gained by the change would outweigh the disadvantage of occasional miscarriages of justice. A long step would have been taken in the direction of restoring the patent system to its legitimate function in the national economy of Britain.

Chemistry for Students and Others.

Everyday Chemistry. By Prof. J. R. Partington. Pp. viii + 668 + xiii. (London: Macmillan and Co., Ltd., 1929.) Pt. 1, 3s.; Pt. 2, 3s.; Pt. 3, 2s. 6d. Complete, 7s. 6d.

AMONG the easiest tasks to conceive, and yet one of the hardest adequately to perform, is the production of an introductory text-book of chemistry such as shall faithfully expound the unchanging, but always fashionably dressed, principles of the science, shall include what is necessary of formal instruction concerning material facts and observations, and at the same time shall have