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A NEW COMMISSIONER OF PATENTS.

The President has appointed as Commissioner of Patents Mr. Martin V. Montgomery, of Michigan, a well-known lawyer, a man of marked ability, vigor, and industry. He has always been noted for his thoroughness of research and for his success in accomplishing whatever he undertakes; but his undertakings of responsibilities have been rare; in fact, he is celebrated for his declinations of many proffered places of honor and profit, which ordinary people would have been only too glad to accept. Judging from his antecedents, the new Commissioner is not likely to allow the Patent Office to remain very long in its present unsatisfactory condition. All persons connected with the establishment will be expected to wake up to renewed exertions, and use every endeavor to put an end to the harassing delays of business which have for so long a time obstructed the usefulness of the bureau.

The new Commissioner has already entered upon his duties. We wish for him every possible success. The interests committed to his charge are of great magnitude, and we trust they may be wisely administered.

PATENT OFFICE EXAMINATIONS OF NOVELTY OF INVENTIONS.

The duties of the Commissioner of Patents are principally deducible from two sections of the Revised Statutes of the United States. In the interpretation of these enactments, the Commissioner, to a certain extent, is guided by the decisions of the courts. But notwithstanding all this, one great feature of the work of the Patent Office is that all of its staff are a law unto themselves. Each examiner acts for himself independently upon each application. His action may, and generally does, have reference to the law as laid down by the judges of the higher courts. That such reference may be omitted has very recently been proved in the practice followed in the registration of labels and trade marks. This special departure from the law, as laid down by the Supreme Court of the District of Columbia, has already been fully discussed in these columns.

Section 4,886 of the Revised Statutes states, as the necessary qualifications for a patentable device, that it shall be useful, new in this country, and shall not be described in any foreign printed publication, nor be patented abroad by another, nor be in public use for two years in this country. Furthermore, the patentee must be the first inventor. Such are the terms of patentability. In section 4,893 the Commissioner of Patents is directed to cause an examination of alleged new inventions to be made, to see if they are patentable under the law, and it is specially stated the patent shall be granted if such examination prove title to the privilege, and if it prove also "that the same" (invention) "is sufficiently useful and important." Thus it appears that the Commissioner of Patents has very arbitrary powers granted him. He is the judge of the utility of every device presented, and is at liberty to refuse a patent because the particular invention does not meet with his approval.

As it happens, a rigid application of this clause of usefulness is impracticable. The general utility of a device can seldom be correctly prophesied or foretold. There are so many patents, some of such restricted application, that only trade experts could form a judgment on many of them. Presumably for this reason, the question of utility is not very deeply gone into by the Office. It is sustained in this by the courts, it being usually held that the patented device is useful enough to come within the definition of the statute. But if the impracticability of this investigation of utility be urged, how much more impracticable does the search for novelty become. The invention must be new as far as all printed publications and patents are concerned. In patents alone this must give something like a million of references to be disposed of in one way or another. The American patents make up nearly one-third of the sum in question. To these must be added the Canadian, French, English, Belgian, and German patents as the most important. The field seems a vast one to cover, and is really such. No matter how accurately this great array of documents is arranged and indexed, a real search through it will always involve much labor and time. Then, the literature of the arts of all nations has to be studied. The search through the patents is comparatively insignificant compared to this examination. All the records of science in different languages, up to the latest dates, are the field to be gone over. Then, after literature and patent records have been exhausted, the novelty of the device is to be determined as affected by public use for over two years in this country. The other branches of the work are very much increased by this. The whole of the United States are to be traversed, and any anticipating device of two years' standing is to be found. Complaints of the delay of business of the Patent Office are frequent. Can such complaints be just, in view of the immense amount of work required before the granting of a patent?

Such complaints would be manifestly unjust, were the search above described really prosecuted to an end. But the truth is that it is not, and never will be. The

Patent Office does not begin to exhaust the subject of novelty. This is proved every year in a multitude of court cases. Anticipations without number are annually shown in infringement suits. And these anticipations are not confined to unpatented structures that might well have escaped the Office's attention. Frequently they are found among United States and English patents, the simplest of all the grounds of the search.

In view of the fact that the courts so often nullify the work of the Patent Office, and that the search made by the Commissioner under the statute counts for nothing, it appears very questionable whether such system should be continued. When a patent is applied for under the existing regime, a very considerable delay in its granting is the regular thing. Such a delay is supposed to be necessary for the purposes of the search. But when the routine of the Office has exhausted itself, and the patent has been granted, the latter has no particular standing in court. It amounts to very little more than a registration. The novelty of the thing patented is inquired into just as if the Patent Office had made no investigation of it. If anticipating devices are found, the patent is declared invalid for the purposes of the suit at issue. No blame is attached to the Commissioner; the declaration of invalidity of a patent is too common a thing in the circuit courts to attract any attention, except from those interested.

The state of the case may be thus summed up: The Commissioner of Patents attempts to perform an impracticable task in ascertaining the novelty of an invention. To perform it, however imperfectly, he feels authorized to delay the granting of patents sometimes for several months in some of the rooms. He recognizes to its full extent this evil, and seeks for an abatement of it by asking for more examiners. In all this he overlooks the fact that the work would not be properly done, even if he had an army of officials to help him.

An impossible task is assigned him. No search can be conclusive. He can only strive to make it measurably good, if he will not dispense with it entirely. As we have before stated, we believe that the search, such as it now is, could be done in much less time than is devoted to it. Even with the present force and present system of searching, we do not believe in the necessity of the delay of business. But if the Commissioner will not abandon the search altogether, he should make it commensurate with his staff. He should settle on a maximum period of delay, and not let more time be devoted to any application. The imperfect examination now accorded is valueless in the courts, and from the force of circumstances the Patent Office certification of novelty always will be. The plain duty of the Commissioner would seem to be to shorten operations, and measure the extent of his examination by the number of his subordinates. We believe that as a rule the presumptive novelty afforded by a patent is well worth the government fees. But in the case of an important patent, it is rarely worth the long delay to which so many patents are now subjected.

It will, of course, be understood that when we speak of the plenary power of the Commissioner in granting or withholding patents we do it without losing sight of the right of appeal from his decisions. But inside of the Office his control is absolute, and is only subject to the higher court.

THE WORKING POWER OF MAN.

I have been puzzled by the very various figures given in engineers' and mechanical hand-books for the force or working power of man.

I think that, as compared with the standard English horse power, 33,000 foot pounds per minute, they vary from $\frac{1}{4}$ to $\frac{1}{2}$. The experiments quoted as those from which engineers and physicists have derived these various data disagree curiously in their products and in the deductions made from them by their authors.

It is difficult to estimate the work done with spade, shovel, axe, or wheelbarrow. But there is one application or use of human strength which gives absolute and correct minute results which, it seems to me, should be exploited and published.

When a man or any human being ascends a stair of regular grade, he lifts his own weight. If he carries in his hand a watch with seconds hand, he can note the time occupied in the work of ascending one, two, or three stories, and this height multiplied by his weight will give the absolute quantity of work done—foot pounds lifted—and this result divided by the time or parts of the minute will give the work per minute; dividing this again by 33,000 ft. pounds, the work of one horse power per minute, we will have a fraction of a horse power as the comparative measure of the man's work or force. If he ascends a tower stair until compelled to stop for breath, he will thus ascertain his extreme and ultimate force, power, strength. If he ascends rapidly till exhausted, he will accomplish in shorter time than when moving deliberately the work of which he is capable. Moving slowly, his effort will be longer continued, but he will in time reach a limit. By a series of experiments in this line by men of different forms, weights, ages, and condition of health and training, very interesting results can be obtained for the