get at the real facts of the case, and if there is any proof that gas can be made of such quality, at so low a rate, we shall be much gratified at an opportunity of laying it before our readers. It will be seen by Mr. Seely's report, that he thinks the matter might be determined in half an hour at any time, with the apparatus in use at the Girard House, by simply turning a stop-cock and observing the gasometer and the burner.

PATENT OFFICE DECISIONS.

We have for several weeks intended to notice some of the recent decisions of the Patent Office which we deem of special importance and interest to our readers. We now propose to commence the execution of that design by a review of the case of H. Muller, for a patent for sewing machine shuttles.

The application was rejected by the Examiner, merely on a reference to "a spindle stop, as built by Rodgers, "Ketchum & Grosvenor, of Paterson, N. J., in the year "1838, and before then." The case was then carried, before the Board of Appeals, who recommended "that "a patent be allowed unless a specific reference can "be pointed out by the Examiner, in which the device is "to be found in the same or an analogous use."

The Examiner then entered a formal protest against the issue of a patent under such circumstances, for the reason that "a rule requiring more precision than now "used would prevent the exercise of the knowledge of the "Office though familiarly remembered in the conduct of "examinations, unless that knowledge was absolutely "precise as to every particular that could enter into the "state of the arts to which the application related." To this protest the Board of Appeals made a very able and conclusive reply, and the Commissioner, after full deliberation, adopted their view of the matter, and ordered the patent to issue, which was accordingly done.

This construction of the act of 1836 is so clearly correct that we wonder how it could have been doubted by any intelligent and impartial Examiner. Whenever an application is rejected the law requires the Office to give the applicant "briefly such information and references as may be useful in judging of the propriety of renewing his application, or of altering his specification to embrace only that part of the invention or discovery which is new" It is not sufficient for the Office to say to the applicant *ex cathedra*, "Your contrivance is not new." If the Examiner knows the fact, the grounds of that knowledge can be given by him, so that the applicant can test the correctness of the opinion of the Office for himself. Peradventure the Examiner may have made a mistake; and if such is not the case, there may be shades of difference between the old contrivance and the new which may serve as the foundation for a valuable patent. And if even this is not the case, the feverish anxiety of an inventor may justly claim a liberal construction of that law which not only protects his substantial interests, but even respects those which are often only imaginary. When, therefore, an application is made for a patent, it is a safe and just rule always to allow it to issue, unless some specific reference can be given showing the same thing to have been previously in existence.

We do not say that the Office cannot properly reject an application in any case without a specific reference. If an applicant were to ask a patent for a contrivance substantially the same as any well-known article which is in general use, it would be sufficient for the Examiner to state the fact, and reject the application accordingly, without further reference.

But if the rejection is made on the ground that the same article exists or has existed in one single instance, or in a limited number of places, a specific reference should be given, and an opportunity allowed to test the correctness of the opinion of the Examiner or the accuracy of his recollection. It is not enough for the Examiner to state that he has known a contrivance of the same kind before, or that he once saw it in a particular place, provided it is no longer to be found there. If it is in common use, it is enough to say so, and the applicant may deny the fact, if he believes it untrue. But how can he deny the fact that the same thing was once seen twenty years since at a particular place; or how can he test the correctness of the reference or amend his specification and claims so as to avoid what is old, and embrace only what is new, which the law intends he shall have the right to do.

The distinction above stated is not capricious. A similar distinction is recognised among the established rules of law. To discredit the testimony of a witness by showing his general bad reputation for truth and veracity, is always permitted, but it is not permissible to show any specific instance of falsehood on his part. The purpose is different in the two cases, but the principle is analogous. Each allows of a general reference to facts of public notoriety and rejects (in the one case absolutely and in the other conditionally) proof of, or reference to, specific facts.

The recent decision of his Honor, Judge Morsell, in the case of Fassmair, is in harmony with these views. It was held in that case that it was competent for the Examiners to reject an application on the ground "that "it is within their own knowledge that the device in "literal or exact formation throughout, is a very com-"mon one in a great variety of analogous uses." Doubtless, if the applicant had denied the fact, and called for more definite information, it would have been given him; but we see no objection to a rejection in the first instance for such a reason. It refers to a contrivance then existing *in common use*, and does not therefore militate in any degree against the rule above laid down.

The reason for requiring a specific reference to some existing contrivance of substantially the same character is well set forth in the argument of the Board of Appeals.

After a full statement of the case they proceed as follows:—

1. Granting that the memory of the Examiner is infallible as to the device remembered, is a reference to a firm having existence "in the year 1838, and before then," at Paterson, New Jersey, such precise information as may *be useful* to the applicant *in judging* of the propriety of renewing his application?

2. May not the Examiner be mistaken? The Report (No. 2599) says, the Examiner verbally admits that this firm no longer exists. If the firm no longer exists, then what becomes of the reference? Paterson contained in 1844, fifteen thousand inhabitants; now, perhaps, there may be near twenty thousand. Is it incumbent upon Mr. Muller to grope his way through a city of that population in the uncertain endeavor to find a device which the Examiner only "remembers" to have seen "in the year 1838, and before then," in the manufactory of a defunct firm? The maxim of the law is, that a man shall not be required to do a vain thing; but here Mr. Muller is required to hunt up a firm which has no existence, and which, by the terms of the instructions to make a search, leaves him in doubt whether it has existed for the last twenty years; or else take the assertion of the Examiner as conclusive. What we mean to say is, that such a reference is vague, uncertain, not specific. It does not, we submit with all due deference, accord with the spirit of that law which requires certainty and tangibility to be a characteristic of its reasons for the refusal of a patent. An applicant has a right to know *what* the thing is which the Office says anticipates his invention, and the means by which he may with *certainty* arrive at a knowledge of its existence. He is not to be put upon an uncertain investigation, and required by his own efforts to find by searching for it, something which, if found, might only in the end be productive of no further or further result, than as furnishing an additional example of the treachery of human memory, or the fallibility of human judgment. It is quite enough that an applicant should be advised how he may without uncertain search inform himself of that, which, when found, too often proves an error of the Office.

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Your honor is told in the protest, that "a reference more specific than the one on which this application was refused by the Examiner," if required, "would lead to the necessity of granting a patent in all cases where a specific reference as understood" by your decision of the 25th ult. "could not be given." And so to remedy the fancied evil of an inability to tell the applicant how, when, and where, he was anticipated, the memory of the Office must suffice. That for your Honor to return an application for a more specific reference than shadowed forth by the recollection of a device "built" twenty-two years ago by a firm which the Examiner admits is no longer in existence, is invading the "sound approved practice" of this office, and introducing into its administration a "dangerous innovation!"

The Commissioner, in approving the views of the Board of Appeals, very justly remarks that, "in a reference like the present, existing solely in the knowledge or memory of the Examiner, the party would have no means of forming a judgment except by an examination of the machine or device referred to, and he is therefore entitled to be furnished with such information in regard to its whereabouts as will enable him to begin his search for it with a reasonable prospect of success." In other words, he should be told *not where it was, but where it is to be found;* for if it really was manufactured more than twenty years ago, and was then of sufficient importance to entitle it to the protection of a patent, the legal presumption is that it would now be in general use, and hence the means of access to it could, necessarily be readily pointed out by the Office. This view clearly corresponds with the decisions and practice of the Office as cited in the foregoing paper.

The decisions of the Office thus referred to abundantly show that the rule which has for many years been observed is in full accordance with the final decision in the present case; and yet it is a little remarkable that one of the most experienced, and, by some, thought the ablest of the Examiners, should pertinaciously insist upon the observance of a rule, which is not only in opposition to that uniform practice, but also to the plain principles of law and justice, as applied to such cases, and that he should even go beyond the beaten track of ordinary official practice for the purpose of defending and causing the adoption of his errors. The explanation is to be sought for in the fact, that some of the older Examiners were educated under the old *regime*, and like the Bourbons have never accommodated their notions to the new order of things. They seem to regard it as the business of the Office to prevent, if possible, the granting of a patent, and are ingenious, prompt and eager in devising the reasons for rejection. It is said that the most difficult part of learning is to unlearn our errors, and we feel satisfied that some of the Examiners in the Patent Office have not overcome that difficulty.

ILLUSTRATIONS OF THE PATENT OFFICE REPORTS.

We have received from Messrs. E. R. Jewett & Co., of Buffalo, N. Y., a set of their engravings of the illustrations to accompany the report of the Commissioner of Patents for 1859, which are neatly printed on one side of the paper by the engravers, in advance, and bound in two elegant volumes of 370 pages each. On comparing these engravings with those of former years, we are very much gratified to see so marked an improvement; and when contrasted with the first that were engraved in 1853, the difference is wonderful.

These illustrations increase the value of the Commissioner's report many fold. A person will get a better idea of a machine from a single glance at a good drawing of it, than he will from reading a very long description in words; indeed, in many cases a man might read whole volumes of letter press description and still have a very vague conception of the invention, when a brief inspection of an illustration would make it clear to him at once. We therefore trust that these engravings will continue to receive the increased attention from the Commissioner which their importance demands, and that they will never be allowed to fall in quality below the standard established by E. R. Jewett & Co.

BRADFIELD'S MODE OF HANGING VEHICLES.—On page 152 of the present volume of the SCIENTIFIC AMERICAN, we published an illustration of Bradfield's improved mode of hanging wagons, and last week we saw one of these carriages in the street. It will be remembered that there is no axletree passing across the carriage, the axle being simply a short spur secured to vertical slides on the side of the carriage, which rest upon spiral or other springs. It enables the carriage to be hung much lower than ordinary vehicles, thus making it more convenient for a great many purposes, such as plumbers' and express wagons, and far more safe against being overturned. The inventor also claims for it many advantages in constructing pleasure carriages, but we think it more specially adapted to the lighter truck uses, which renders it convenient to load from the storehouse or sidewalk.

BOILER EXPLOSIONS—FACTS WANTED.

MESSRS. EDITORS:—For the purpose of publishing some statistics in connection with steam boiler explosions, we wish to be informed of as many casualties of this character as we can obtain. What we wish to know particularly is, if the explosion took place at the time of starting the engine, and where said boiler was located. Can you aid us through the medium of the SCIENTIFIC AMERICAN? HOARD & WIGGIN.

Providence, R. I., Oct. 31, 1860.