Scientific American.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT

NO. 37 PARK ROW, NEW YORK.

O. D. MUNN. A. E. BEACH.

TERMS.

One copy, one year..... $3 00
One copy, six months..... 1 50
CLUB RATES { Ten copies, one year, each $2 50..... 25 00
Over ten copies, same rate, each..... 2 50

VOL. XXIX., No. 1 . . [NEW SERIES.] *Twenty-eighth Year.*

NEW YORK, SATURDAY, JULY 5, 1873.

Contents.

(Illustrated articles are marked with an asterisk.)

AN IMPOSITION UPON THE PUBLIC.

That meritorious inventions should receive protection by patents is generally conceded. Such has been the practice during nearly the whole of our national existence, and rightly so. The great benefits resulting to the country urge a continuance of a liberal policy towards inventors. On the other hand, we must not be unmindful of the fact that the numerous industries of the nation have a claim for protection against the creation of oppressive and improper monopolies. By this we mean that the grant of patents for old devices which have, for many years, been made, sold, and used by the public upon the faith that a patent neither existed nor could be granted, is both oppressive and wrong. There is neither law nor warrant for depriving the public of vested right, created by lapse of time and *laches* and abandonment on the part of the alleged originator, nor for the placing of the device exclusively in the hands of such alleged originator and his assignees.

But this is virtually what has taken place by the grant of a patent, bearing date April 29, 1873, to Joseph P. Woodbury, of Boston, Mass., for an alleged improvement in planing machines, consisting, in brief, of the use of yielding pressure bars in planing machines. It will be interesting to our readers to learn something of the facts of this extraordinary case, since, as it appears by the records in the Patent Office, this application for the patent was made as early as June 3, 1848, nearly twenty-five years prior to date of issue of the patent. The device was not only in public but common and almost universal use, on planing, tonguing and grooving, molding, and veneer cutting machines, between the time the Patent Office refused to grant the patent and its present date of issue, and this with the knowledge and acquiescence (presumptively) of the said Woodbury himself. In fact, it was a device mainly originated to get around the Woodward patents, so many years in litigation, and held by the courts to be an equivalent of it.

As against the equities of the public in this matter, it is contended that Mr. Woodbury made repeated efforts to obtain a patent after so filing application in the year 1848, and that his case was withdrawn in October, 1852, and the government fee of $20 was then returned to his attorney without the applicant's knowledge. But, granting all this, it still appears that, from October, 1852, until December, 1872, nothing further was done by the inventor towards obtaining a patent. Section 11 of the act of 1839 provided him with an appeal to the District Court of the United States for the District of Columbia; and he did not choose to avail himself of the remedy, in order to test his right as against that of the public. Was there ever a clearer case of intentional abandonment?

The statute under which this case was resurrected is the 35th section of the act of 1870. It, in general terms, permitted the renewal of rejected or withdrawn cases for a period of six months after the date of the passage of said act. But few interested were probably aware of this questionable piece of legislation until after the period and privileges had alike passed away, except the initiated few, who got the bill passed to admit of just such cases as the one under discussion. Congress, in reviving expired patents, invariably provides for the unrestricted use of machines made after expiration of the grant sought to be revived, and in use at the time of seeking the aid of that body for renewal of the patent, by excepting them as being lawfully made and used. By this Woodbury grant, however, existing machines are claimed to be tributary from date of the patent.

We venture to state that Congress had no such intention in the passage of the general statute under color of which this gigantic monopoly has been granted. Such a grant ought not to be sustained against any machines, whether built before or after date of its issue, because of the uninterrupted making and using having been so long vested in the public with the full knowledge and acquiescence of the alleged inventor.

Congress may, under certain circumstances, with propriety appropriate from the public funds a sum of money to an inventor, if it appears that he is raised by his invention to the dignity of a public benefactor; but it scarcely would, while guarding the worthy and diligent inventor, take from the community that which has unquestionably vested in it by reason of lapse of time and other causes. Such was not the intention of that clause of the constitution giving Congress power to enact laws to promote the progress of the useful arts; and such is against the spirit and fair interpretation of the laws already enacted in pursuance thereof.

The patent is but *prima facie* evidence of an existing right, and the whole matter will no doubt be thoroughly ventilated in the courts should any attempt be made to enforce it by legal proceedings.

SCREW THREADS---ENGLISH AND AMERICAN PROPORTIONS.

A correspondent recently asked for the standard proportions of the Whitworth screw thread. They are given below, as communicated by Mr. Whitworth, to the Institution of Civil Engineers, in 1841. We have also added the standard American proportions, which were published some years ago, and may be acceptable to some of our readers. They were communicated to the Franklin Institute, by a committee appointed for that purpose, in 1864:

PROPORTIONS OF THE WHITWORTH THREAD.

Diameter in inches,	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
Threads per inch,	24	20	18	16	14	12	11	10	9	8
Diameter in inches,	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2
Threads per inch,	7	7	6	6	5	5	4 1/2	4 1/2	4	4
Diameter in inches,	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5
Threads per inch,	3 1/2	3 1/2	3 1/2	3 1/2	3	3	2 7/8	2 7/8	2 3/4	2 3/4
Diameter in inches,	5 1/4	5 1/2	5 3/4	6						
Threads per inch,	2 5/8	2 5/8	2 1/2	2 1/2						

Angle of threads = 55°. Depth of threads = pitch of screws. One sixth of the depth is rounded off at top and bottom. Number of threads to the inch in square threads = ½ number of those in angular threads.

STANDARD AMERICAN PROPORTIONS.

Diameter in inches,	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1
Threads per inch,	20	18	16	14	13	12	11	10	9	8
Diameter in inches,	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2
Threads per inch,	7	7	6	6	5 1/2	5	5	4 1/2	4 1/2	4
Diameter in inches,	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5
Threads per inch,	4	3 1/2	3 1/2	3 1/2	3	3	2 7/8	2 3/4	2 5/8	2 1/2
Diameter in inches,	5 1/4	5 1/2	5 3/4	6						
Threads per inch,	2 1/2	2 5/8	2 5/8	2 1/4						

Angle of threads = 60°. Flat surface at top and bottom = 1/8 of the pitch. For rough bolts, the distance betwen parallel sides of bolt head and nut = 1½ diameters of bolt + ⅛ of an inch. Thickness of head = ½ distance between parallel sides. Thickness of nut = diameter of bolt.

In finished bolts, thickness of head = thickness of nut. Distance between parallel sides of a bolt head and nut, and thickness of nut, are 1/16 of an inch less for finished work than for rough.

FIRE LADDERS.

Considerable attention has of late been directed to the subject of mechanical or folding ladders, and it is proposed to supply the fire department of this city with them. Of course the very best invention in this line is what is wanted; but if we may judge from the existing productions, there is still opportunity for ingenious people to work out new ideas. We are inclined to think that a steam machine of this kind, or a carbonic acid gas machine, might be devised and made to operate advantageously. At present the sliding ladders are all of them worked by hand power, by ropes and winches; and the aim has been, by diminishing weight, to render them easily operated; but this involves lack of stability. To be of real service, they must be made firm enough to resist danger of capsizing from ordinary causes, such, for example, as a blow of wind. In London they have been found defective in this respect.

During a recent trial in this city, another defect in stability was brought out. The ladders tried were those of the Uda pattern. It operated quite successfully in the facility with which it could be run up to a hight, bearing a man with hose pipe, mounted on the summit. But when the water was let suddenly on, the ladder began to straighten perpendicularly and was on the point of toppling over backward, when chief engineer Bates, of Boston, rushed forward and with a pocket knife opened the hose pipe, thus instantly reducing the water pressure and saving the fireman's life. It is evident that stability, under the force exerted by sudden application of a head of water to the hose pipe, is another quality that the coming fire ladder must possess.

The subject is an important one, and whoever can devise a first rate implement will render an important service to his fellow men.

PROGRESS OF WOMAN'S RIGHTS.

Miss Anna Nichols, of Massachusetts, has recently been appointed an assistant examiner in the Patent Office. The lady has for some time very creditably fulfilled the duties of clerk; and on the occasion of some vacancies in the examinerships, she was one of several ladies who competed for places. All of the candidates were subjected to a general scientific examination as to their capabilities for the position, and four ladies passed the ordeal with much credit. The Commissioner, however, concluded to appoint only one of them for the present, as a sort of experiment.

There are few duties connected with the operation of the Patent Office but may be efficiently performed by intelligent women. It is all indoor work, mostly of a fixed, clerical nature, for which petticoats are admirably adapted; and if the Commissioner would make a more general use of them, he would set free a large number of pantaloons to be usefully employed in developing the more direct outdoor industries of the country, for which men are, by nature, so especially prepared.

At Canandaigua, in this State, Miss Susan B. Anthony, who insisted that she had as good a right to vote as any other man, and who did vote at the last election, has been tried and, we regret to say, found guilty, and fined for violating the law. Judge Hunt decided that, although women were entitled to the general rights of citizens, there were certain special privileges which the law of New York, as it stands, did not give them, one of which was the privilege of voting. The law must, in the opinion of Judge Hunt, be changed before our feminine fellow citizens can enjoy themselves at the ballot box.

In the meantime, the Commissioner of Patents having wisely decided in favor of the eligibility of women as patent examiners, we shall hope to see his decision sustained and ratified by the appointment of Miss Anthony as his successor when he shall retire—and that day, we understand, is not far distant. The lady in question is a female steamboat, so far as untiring energy and useful capacity are concerned. She is, undoubtedly, competent to manage a dozen or two of sleepy institutions like the Patent Office. We nominate, for Commissioner of Patents, Miss Susan B. Anthony, of New York, and Miss Anna Nichols for Assistant Commissioner.

A PATENT CONGRESS.

It will be remembered that, when the prospectus for the present exposition at Vienna was announced, the Austrian government appealed to the United States, requesting that a full display of the new and ingenious productions of this country might be supplied.

We took occasion to point out the hindrances to a compliance with the Austrian request, and showed that, owing to the illiberal nature of the Austrian patent laws, American inventors could not obtain proper protection for their new improvements in that empire; and that unless better security could be immediately assured to our citizens, they would be likely to take but little share or interest in the exposition.

The result has fully justified our interpretation of the feelings of American inventors and manufacturers. The exhibit from this country, though good in quality, is scanty as compared with what it undoubtedly would have been, had the Austrian government been a little more compliant in respect to inventive protection. Instead of granting protection to Americans, all that the Austrians could be induced to do was to agree to favoring the assembling of an International Congress for the purpose of talking over the subject of patent laws in general, and the propriety of promoting the enacting of uniform patent laws in all European states.

This Congress is to meet in Vienna during the present summer, and the President has recently appointed, as a special delegate from this country, the Hon. J. M. Thacher, now Assistant Commissioner of Patents. This appointment is an excellent one. Mr. Thacher is a gentleman of ability, and his extended official experience will enable him to present the clearest explanations of the working of our patent system, and the needs of our inventors in respect to patents in foreign countries.

The Department of State, in officially notifying us of the appointment of Mr. Thacher, requests our views upon the points accompanying the following letter:

{ DEPARTMENT OF STATE,
{ WASHINGTON, June 17, 1873.

Messrs. Munn & Co., New York city.

SIRS:—An International Patent Congress is about to be held in Vienna, at which it is proposed that the United States be represented. In order that the interests of American inventors and manufacturers may be properly represented thereat, information is desired on the subjects of inquiry subjoined hereto.

Will you have the goodness to answer the several inquiries, or such of them as you may think proper to reply to, and return your answer to Hon. J. M. Thacher, Acting Commissioner of Patents, Patent Office, Washington?

As it is understood that the Congress will convene early in August next, it is very desirable that your answer may be received by Mr. Thacher before the first of July. I have the honor to be, Very respectfully yours,

HAMILTON FISH.

SUBJECTS OF INQUIRY.

1. Is the protection of inventions by patents just and expedient, and, if so, on what grounds?
2. To whom and for what should patents be granted?
3. Should the grant depend on preliminary official examination?
4. What limitations are proper, if any, as to manufacture of the patented article, or payment of additional fees?
5. Should a distinction be made between home and foreign applicants, and, if so, what?
6. What has been the influence of patents on manufacturing interests in this country? Examples.
7. If a manufacturer, how is your special branch affected by patents?

Statistical, as well as general information is desired, and also suggestions in relation to any other matter connected therewith.

REMARKS BY THE EDITOR.—Each of these questions would form the subject of an elaborate essay, which at present we cannot undertake. We shall leave their extended discussion to our various readers. The Secretary of State is desirous of drawing out as general an expression of views as possible.