

combination of those cocks, or their equivalent, with the channels and the stacks, or with the stacks directly.

Third, I claim the equalizer.

Fourth, I claim the combination of the splash pump with the cisterns by pipes and valves, substantially as above.

Fifth, I claim the combination of an air pump with a tightly covered vessel or vessels, to draw air from the vessels and contents during freezing, by intervening pipes or connections.

Sixth, I claim the peculiar mode of connecting the stacks with the channels, and channels with the cocks, or other-pieces, as shown and described.

3,015.—William Van Anden, of Poughkeepsie, N. Y., for an Improvement in Harvesters:

I claim, first, The combination of the adjustable bolts, O O, with the adjustable bars, B, and with the main frame and axle, for the purpose and in the manner described.

Second, The combination and arrangement of the adjustable cutter bar holder, U, and cutter, V, with the finger bar, E, substantially described, and for the purpose set forth.

3,016.—J. H. Wells, of Brooklyn, N. Y., for an Improvement in Automatic Primer for Firearms:

I claim, first, The combination with a firearm of a hopper and a slide or its equivalent, which is operated by the cocking and letting go the hammer of the gun, and by other manipulation of the arm to bring and deliver the priming pills to and at the point of explosion, said parts being so constructed and arranged, as described, as to receive the said pills from the mass, without any previous arrangement in order being necessary, and to deliver them single in succession, as set forth.

Second, The combination of the slide, 4, vibrating arm or catch, 7, or other catch performing its functions, catch, 8, and spring, 10, substantially as described for the purpose of attaching the slide to and detaching it from the hammer, so as to make it operative, or otherwise, as desired, for the purpose set forth.

Third, The construction, as described, of the chamber or reservoir for containing the pills or priming material in two compartments so formed and arranged with reference to each other that the smaller compartment of the one which is over the opening in the slide, will receive the pills freely from the other compartments, and have a tendency to retain them, substantially as set forth.

3,017.—John Wilson, of Chicago, Ill., for an Improved Manufacture of Fibrous Waterproof Fabrics:

I claim the new article of manufacture described, constituting a waterproof fabric, having both surfaces capable of securing a cloth finish.

3,018.—Joseph Wood, of Red Bank, N. J., for Improvement in Frogs for Railroads:

I claim the combination of rails, h and l, connected together and supported from the rails, e and b, with the frogpoint, n, in the manner and for the purposes specified.

3,019.—James S. Yerck and G. H. Heming, of Tiffin, Ohio, for Improvement in Bridges:

I claim, first, The use of longitudinally-described tubes in the construction of truss frames, substantially as described.

Second, Casting or molding the panels of truss frames in longitudinal sections, each section embracing half of the upper chord and cross braces, and a portion of the shoe or heel post, as set forth.

Third, The manner above described of connecting the sections of one panel to those of another in truss frames when the said connections embrace within themselves the shoes or heel posts, as stated.

PATENTS FOR SEVENTEEN YEARS.



The new Patent Laws enacted by Congress on the 2d of March, 1861, are now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

The duration of patents granted under the new act is prolonged to SEVENTEEN years, and the government fee required on filing an application for a patent is reduced from \$30 down to \$15. Other changes in the fees are also made as follows:—

On filing each Caveat.....	\$30
On filing each application for a Patent, except for a design.....	\$15
On filing each original Patent.....	\$20
On appeal to Commissioner of Patents.....	\$20
On application for Re-issue.....	\$30
On application for Extension of Patent.....	\$50
On granting the Extension.....	\$50
On filing Disclaimer.....	\$10
On filing application for Design, three and a half years.....	\$10
On filing application for Design, seven years.....	\$15
On filing application for Design, fourteen years.....	\$30

The law abolishes discrimination in fees required of foreigners, except on reference to such countries as discriminate against citizens of the United States—thus allowing English, French, Belgian, Austrian, Russian, Spanish, and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (except in cases of designs) on the above terms.

During the last sixteen years, the business of procuring Patents for new inventions in the United States and all foreign countries has been conducted by Messrs. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN; and as an evidence of the confidence reposed in our Agency by the Inventors throughout the country, we would state that we have acted as agents for more than FIFTEEN THOUSAND Inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of Inventors and Patentees at home and abroad. Thousands of Inventors for whom we have taken out Patents have addressed to us most flattering testimonials for the service we have rendered them, and the wealth which has inured to the Inventors whose Patents were secured through this Office, and afterward illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! We would state that we never had a more efficient corps of Draughtsmen and Specification Writers than are employed at present in our extensive Offices, and we are prepared to attend to Patent business of all kinds in the quickest time and on the most liberal terms.

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Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit to us, with a full description, for advice. The points of novelty are carefully examined, and a reply written corresponding with the facts, free of charge. Address MUNN & CO., No. 37 Park-row, New York.

Preliminary Examinations at the Patent Office, for the advice we render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there, but is an opinion based upon what knowledge we may acquire of a similar invention from the records in our Home Office. But for a fee of \$6, accompanied with a model or drawing and

description, we have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a Patent &c., made up and mailed to the Inventor, with a pamphlet, giving Instructions for further proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh-streets, Washington, by experienced and competent persons. More than 5,000 such examinations have been made through this office during the past three years. Address MUNN & CO., No. 37 Park-row, N. Y.

How to Make an Application for a Patent.

Every applicant for a Patent must furnish a model of his invention, if susceptible of one; or if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the government fees by express. The express charge should be prepaid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to the order of Munn & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but, if not convenient to do so, there is but little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & Co., No. 37 Park-row, New York.

Caveats.

Persons desiring to file a Caveat can have the papers prepared in the shortest time by sending a sketch and description of the invention. The government fee for a Caveat, under the new law, is \$10. A pamphlet of advice regarding applications for Patents and Caveats, in English and German, furnished gratis on application by mail. Address MUNN & CO., No. 37 Park-row, New York.

Foreign Patents.

We are very extensively engaged in the preparation and securing of Patents in the various European countries. For the transaction of this business, we have offices at Nos. 66 Chancery-lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that trans-roverses of all the European Patents secured to American citizens are procured through our Agency.

Inventors will do well to bear in mind that the English law does not limit the issue of Patents to Inventors. Any one can take out a Patent there.

Circulars of Information concerning the proper course to be pursued in obtaining Patents in foreign countries through our Agency, the requirements of different Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park-row, New York, or either of our Branch Offices.

Assignments of Patents.

The assignment of Patents, and agreements between Patentees and manufacturers, carefully prepared and placed upon the records at the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park-row, New York.

It would require many columns to detail all the ways in which the Inventor or Patentee may be served at our offices. We cordially invite all who have anything to do with Patent property or inventions to call at our extensive offices, No. 37 Park-row, New York, where any questions regarding the rights of Patentees, will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 Park-row, New York.

TO OUR READERS.

Models are required to accompany applications for Patents under the new law, the same as formerly, except on Design Patents, when two good drawings are all that is required to accompany the petition, specification and oath, except the government fee.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was prepaid has expired.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known, and including \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1853, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of *Instructions to Inventors*, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application at this office. Address MUNN & CO., No. 37 Park-row, New York.

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Answers to Queries.

J. J. B.—You do not give sufficient data for calculating the power of the water in your race. We have very little doubt, however, that you will find it impossible to turn it to any practical use.

F. B., of N. J.—We are not familiar with the terms upon which engineers are admitted into the revenue service of the country. This branch of the services is under the direction of the Secretary of the Treasury, to whom we refer you.

T. A. H., of Ill.—If you have any doubt about the practicability of your invention, the only way to settle it will be by actual trial. If you have not the means yourself, you must try to get some one to aid you. Inventors frequently do this.

J. H., of Mass.—We do not know the exact number of the present clerical force of the Patent Office. Business is conducted with considerable alacrity, but cases are not disposed of as rapidly as they ought to be.

"Improvement," of N. Y.—On page 113 of the last volume you will find an illustration of the machine used in rifling cannon for the United States army. It is as simple and efficient as any that we have seen described.

A. W. B.—Asks the following questions:—"Suppose that A obtained Letters Patent on improvements in corn planters claiming 'check-rotary corn by means of the dropping slides' &c., to do which, at every cross mark he raised or depressed the handles; and five months subsequent to that, B patented improvements on the same kind of machinery. Several years after that B reissues, and then claims 'operating the seed dropping mechanism by hand or by an attendant in contradistinction to automatic dropping,' at the same time ante-dating six months, does B's re-issue and ante-dating prevent A from ante-dating and re-issuing now?" Ans.—No. "Is not B's claim referred to, invalid?" Ans.—Yes, unless he was really the prior inventor. "Could not A secure same claim now by showing the originality of invention?" Ans.—Probably he could. "Are not antedated claims inoperative as against other claims patented within the time covered by the ante-dated claim?" Ans.—Not necessarily. It depends on whether or not the ante-dator was in fact the prior inventor. "In re-issues are the new claims additional to the original ones, or are they the only claims then, on the invention?" Ans.—Sometimes the re-issued patent contains the original claims with new ones added, and sometimes the claims are all new. "Can an original inventor prevent subsequent inventor from manufacturing his invention, if an infringement, however trifling that infringement may be, and thereby monopolize the whole to the public detriment, or can the subsequent inventor, by offering or paying proper tariffs, manufacture and sell against the will of the original inventor?" Ans.—No person has a right to infringe in any degree. The exclusive privilege of sale or use belongs to the patentee. "By such monopoly all subsequent improvements, involving any infringement of original patents, however trifling the infringement, are lost to the inventor and public, if the first inventor objects to their use by others; whilst, if for a fair compensation, he would grant to others the right to use, he, they and the public would be alike benefited." Ans.—We have yet to see the first inventor who was unwilling to receive compensation for the right to use his improvement. "If the law allows such exclusive monopoly it is wrong, because all subsequent improvements are at the mercy of the original inventor, and inventors become discouraged because their own inventions become useless in their hands after being patented." Ans.—Practical experience shows that your views wrong, and the law right.

O. B., of Ohio, asks the following questions:—"From among the well known principles of mechanism, as for instance the gearwheel, the crank, the spring, the joint, the pinion, &c., can any one, by applying these to new and useful uses in machinery, be said to have invented anything but an arrangement or combination?" Ans.—Yes. Something more than a mere arrangement might, under certain circumstances, be claimed. "Can a motion, simply considered be a patentable idea, or must a patent attach to something material, or pertain to the device that causes motion?" Ans.—It depends upon the result produced by the motion. "If motion in itself is not patentable, then can a similar motion be produced but by a different device, without infringement upon a former patent, provided, always, it is useful, and a better arrangement than the former?" Ans.—If the claim rested upon the production of a motion in a given way, and some other mechanism produced it in a different way the use of the latter machine would not be an infringement.

P. H. W., of N. Y.—You can obtain all the information you require about the picking machines by addressing a letter to the Lowell Machine Works, Mass.

H. G., of Mo.—There was never a more favorable time for you to apply for a patent, and to bring your invention before the public than the present. The administration of the Patent Office is liberal in its construction of what is patentable. Patents which were granted in 1848, must be extended in 1862 if demanded.

A. A. A., of Pa.—We thank you for sending us the description of the boat, and we should publish it if we had any means of learning that it is reliable.

E. A. S., of N. Y.—Your idea that the ocean is the deepest parts reaches to the liquid interior of the earth we do not regard as probable.

A. J. B., of Colorado Ter.—The patentees of the alloy for making dies and stamps, described on page 236, Vol. V. new series SCIENTIFIC AMERICAN, can give you all the information you desire respecting its nature and composition.

C. A. H., of Ill.—We are not acquainted with any substance or composition but India rubber that is capable of rendering muslin water-proof, elastic, and capable of withstanding the heat of summer without becoming sticky. The discovery of a new cheap compound of this character capable of being applied in solution would be invaluable and could not be purchased for a hundred times the sum (\$30) you have offered for it.