

respondents: 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.

The revised Patent Laws, enacted by Congress on the 24 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 to \$15. Other changes in the fees are also made as follows:—

On filing each caveat.....	\$10
On filing each application for a Patent, except for a design.....	\$15
On issuing 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 a 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, excepting natives of such countries as discriminate against citizens of the United States—thus allowing Austrian, French, Belgian, English, Russian, Spanish and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (but in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

During the last seventeen 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 at least TWENTY 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 services we have rendered them, and the wealth which has inured to the inventors whose patents were secured through this office, and afterwards 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 those 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.

REJECTED APPLICATIONS.

We are prepared to undertake the investigation and prosecution of rejected cases on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted, are invited to correspond with us on the subject, giving a brief history of the case, inclosing the official letters, &c.

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, printed in English and German, is 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 THREE-FOURTHS of all the European Patents secured to American citizens are procured through the Scientific American Patent Agency, No. 37 Park Row, New York.

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 Government Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park Row, New York, or any of our branch offices.

ASSIGNMENTS OF PATENTS.

Assignments of patents, and agreements between patentees and manufacturers are 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 inventors or patentees 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.

Binding the "Scientific American"

It is important that all works of reference should be well bound. The SCIENTIFIC AMERICAN being the only publication in the country which records the doings of the United States Patent Office, it is preserved by a large class of its patrons, lawyers and others, for reference. Some complaints have been made that our past mode of binding in cloth is not serviceable, and a wish has been expressed that we would adopt the style of binding used on the old series, *i. e.*, heavy board sides covered with marble paper, and morocco backs and corners.

Believing that the latter style of binding will better please a large portion of our readers, we commenced on the expiration of Volume VII. to bind the sheets sent to us for the purpose in heavy board sides, covered with marble paper and leather backs and corners.

The price of binding in the above style is 75 cents. We shall be unable hereafter to furnish covers to the trade, but will be happy to receive orders for binding at the publication office, No. 37 Park Row, New York.

TO OUR READERS.

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 inclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1833, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

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 are 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 pre-paid has expired.

RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a *bona-fide* acknowledgment of our reception of their funds.

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.

Back Numbers and Volumes of the Scientific American

VOLUMES I., II., III., IV., V., VII. AND VIII. (NEW SERIES) complete (bound) may be had at this office and from periodical dealers. Price, bound, \$2.25 per volume, by mail, \$3—which includes postage. Every mechanic, inventor or artisan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding. VOL. VI. is out of print and cannot be supplied.



J. T., of Pa.—Color-blindness is more common than many persons suppose. It is calculated by those who have given this subject attention, that one person out of every nineteen cannot distinguish colors accurately. Locomotive engineers, and the pilots of vessels, should all be examined with respect to their capacity for distinguishing colored signals.

H. Y., of Pa.—A very good cement, for the joints of stone flags and chimney caps, is made with linseed oil, red lead and whitening. Take equal parts of the two latter, and knead them with the oil, until a cement of the consistency of putty is made; when it may be applied with small trouble.

H. M. P., of N. Y.—A cubic foot of hydrogen gas in a balloon is capable of supporting about an ounce weight. Your proposed method of guiding balloons by light spiral fans is not new. Capt. J. Taggart, of Roxbury, Mass., made several ascents with balloons, about ten years ago, in which he used fan guides.

W. P. T., of N. J.—Scrap-iron may be converted into cast steel by placing it in a crucible with about one ounce of powdered charcoal to the pound of iron, and one-fourth of an ounce of the oxide of manganese, then covering the crucible and submitting it to a high heat in a furnace for several hours.

R. P. T., of Mass.—The colors on silk, to which you refer, are dyed with aniline oxides, without mordants. Cotton requires to be prepared with an infusion of sumac to take on aniline colors; but neither silk nor wool require such a preparation.

T. L. D., of Maine.—If any one has made you believe that an 18-pounder field-piece can be fired with a charge of grape shot, from a mules back, without disturbing the equanimity of the beast, you must be remarkably credulous. Common sense would teach you better.

I. S., of Ill.—Methylated spirits proper, are distilled from wood; but common spirits, to which are added a little creosote, are called methylated spirits, in England.

T. L. M., of Ohio.—You will find a table of the character you mention in the present number. The rules or rather sizes there laid down, will enable you to proceed without delay in the construction of your machine.

W. R., of Wis.—Coal tar is certainly a good preservative of wood placed in the ground; and, if you can obtain it conveniently, we advise you to coat the bottoms of your fence posts with it. We also advise you to season your fence timbers thoroughly, before you use it.

T. B. R., of N. Y.—The most convenient disinfectant for your cesspool and sink, is copperas (the sulphate of iron). Dissolve one pound weight of it, in five gallons of hot water; and pour it into your sink; the offensive odor will soon disappear.

L. F. G., of N. Y.—Cast-iron may be granulated by pouring it, while hot, among cold water, then reducing to fine powder, by grinding in an eccentric mill. The grindings of steel tools may be washed and freed from sand, and an impalpable steel powder thus obtained, which may be rendered magnetic. Pure soft iron cannot be rendered permanently magnetic, like steel and cast-iron.

R. L., of Mass.—Forcing pumps for fire engines were employed as long ago as the reign of the Roman Emperor Vitruvius. We do not decide bets. You can use the information as you please.

J. M., of Vt.—Water rams are still used in many places. You will find a full description of them in Silliman's Philosophy.

P. W. D., of Conn.—The machine you speak of has not been illustrated in the SCIENTIFIC AMERICAN.

B. B., of N. Y.—A forth-coming number will contain the information you desire.

G. R., of Conn.—Why brass castings assume different colors, after being turned, or planed, is a question we cannot answer positively. It is due probably to the chemical action of light upon the materials of which the brass is composed.

P. A. C., of Mass.—The sample of paper which you have sent us, made by your machine from basswood, appears to be suitable for many purposes. It is very soft, and similar to the common white blotting paper which we use.

L. J. O., of Minn.—The water upon the surface, and near the sides and bottoms of deep rivers, moves with less velocity than the current in the middle, at some distance below the surface. The air at the surface offers resistance to the water, and the sides and bottom obstruct its flow. Rafts and boats floating down in the middle of a deep river move faster than chips thrown upon the surface.

F. M., of Ill.—The alloy, for lining journal-boxes, called Babbitt metal, is composed of 24 parts, by weight, of copper, 24 of tin, and 8 of antimony. These metals are fused together in a crucible, and run into ingots; the alloy is then ready to be cast in the journal-boxes.

C. A. W., of Maine.—Your reasoning is correct as to what might cause the failure of the first Atlantic telegraph cable, in the breaking of the copper conductor, through the elongation of the outer spiral sheath of wire. But it is now known that the cable was indifferently constructed; and it had been injured before an attempt was made to lay it.

F. R. Van T., of Ohio.—Equal parts of the chlorate of potash, and the sulphuret of antimony, made into a paste, with a gum water; then formed into pellets and dried, may be employed for the percussion pellets of guns. But the common fulminating powder used in percussion caps, consists of fulminating mercury, nitrate of potash, sulphur, and a little ground glass. You will find a description of the manufacture of percussion caps on page 392, Vol. IV., current series of the SCIENTIFIC AMERICAN.

R. A. B., of Mass.—Send us the drawing and description and we can proceed forthwith.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, Aug. 5, to Wednesday, August 12, 1863:—

A. H. G., of N. J., \$16; D. H. P., of Cal., \$25; J. K., of Iowa, \$25; E. C. C. K., of Conn., \$60; W. C., of Ill., \$16; C. C. A., of N. Y., \$787.50; G. McG., of Ohio, \$25; T. J. K., of Ohio, \$16; L. E. R., of Ill., \$16; P. & H., of Ohio, \$16; A. M., of N. Y., \$16; J. B. B., of C. W., \$16; W. & C., of N. Y., \$25; N. & N., of Ill., \$25; B. & B., of N. Y., \$100; C. R., of Vt., \$16; H. A., of N. Y., \$15; H. & C., of Conn., \$10; S. D. L., of Mass., \$41; W. B. H., of N. Y., \$16; I. M. M., of Conn., \$16; R. & B., of N. J., \$100; J. of Pa., \$25; S. & P., of N. Y., \$15; S. M., of N. Y., \$25; B. H., of Kansas, \$25; G. M., of Ill., \$20; L. D. B., of Pa., \$20; B. & L., of N. Y., \$20; W. G., of Pa., \$26; J. P. Jr., of Cal., \$20; A. S., of N. Y., \$20; J. W. K., of Mass., \$20; H. B. S., of Ill., \$20; J. H. R., of Mich., \$20; R. D. N., of N. H., \$20; H. P., of Pa., \$20; E. B. R., of N. Y., \$16; G. M. L., of N. Y., \$10; E. C., of N. Y., \$20; C. C. of N. Y., \$16; F. R., of N. Y., \$20; T. R., of N. Y., \$20; B. F. H., of Wis., \$20; S. A., & W. H. P., of N. Y., \$20; R. M. P., of Wis., \$20; M. & S., of Pa., \$20; R. R., of N. Y., \$20; N. B. H., of N. Y., \$16; G. L. W., of N. Y., \$16; J. A. V. R., of N. Y., \$20; R. H. J., of Ill., \$65; H. G., of N. Y., \$25; P. T., of N. Y., \$25; W. P. P., of Conn., \$12; E. B. R., of N. Y., \$25; D. L. D., of N. Y., \$28; P. E., of N. Y., \$28; M. B. W., of Conn., \$16; J. T., of Wis., \$20; S. W. N., of N. Y., \$25; D. C. M., of N. Y., \$20; M. F. G., of N. J., \$25; G. W. L., of Ohio, \$15.

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and inform us the amount, and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Wednesday, August 5, to Wednesday, August 12, 1863:—W. F. P., of Conn.; L. M., of N. Y.; L. D. L., of Mass.; G. H. L., of Ill.; F. M., of C. W.; J. M., of N. Y.; L. B. D., of N. Y.; L. D. C., of Mich.; G. McG., of Ohio; P. W. & S., of Cal.; C. J. P., of Ill.; J. K., of Iowa; P. E., of N. Y.; D. P. P., of Cal.; J. N., of Ill.; B. R. & V., of Ohio; D. L. D., of N. Y.; W. & C., of N. Y.; C. B., of Iowa; H. G., of N. Y.; P. T., of N. Y.; J. F. B., of Mich.; E. C. C. K., of Conn.

RATES OF ADVERTISING.

Twenty-five Cents per line for each and every insertion, payable in advance. To enable all to understand how to calculate the amount they must send when they wish advertisements published, we will explain that ten words average one line. Engravings will not be admitted into our advertising columns, and, as heretofore, the publishers reserve to themselves the right to reject any advertisement they may deem objectionable.

TO INVENTORS WHO HAVE INVENTIONS OF practical value, either patented or not, and who have not sufficient capital to bring the same out, by addressing the subscriber may be assisted in so doing, or the right to manufacture be purchased. Describe the article in full, with simple drawings, if convenient, mentioning advantages, &c. Address, by mail, D. B. WHIPPLE, New Haven, Conn.

250 RARE RECEIPTS—FOR MECHANICS AND their wives—tells what to do and how to do it. The book sent free for fifteen cents. HUTCHINSON & CO., Publishers, 442 Broadway, New York.

TO PRACTICAL BOLT AND NUT-MAKERS.—WANT- ED, a steady, reliable man who has had practical experience in making preased bolts and nuts. A good situation, with prospect of advancement, will be assured. Address, stating terms and full particulars, B. D. H., Box 447, Pittsburgh, Pa.

Improved Stamp Canceler.

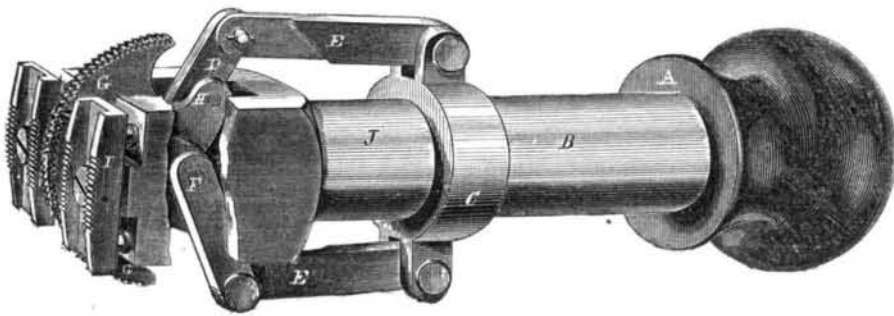
The annexed engraving represents one of a class of instruments which have been needed lately, in the transaction of public and private business. It is a well known fact that all stamps required by the Internal Revenue department, and also those on letters, must be defaced, so that they cannot be used a second time, thus defrauding the Government of its revenue. The canceler herewith illustrated is intended more particularly for the Post Office Department; and, though apparently complex in its outward appearance, is in reality a very simple contrivance, as will be seen by reference to the following description. The wooden handle, A, is securely fast-

tion of the canceler is shown in Fig. 2, where the address of the inventor, and the defaced stamp are well shown. For further information address Dr. Samuel W. Francis, Newport, R. I., Box 240.

Window Flowers.

When the windows and balconies are filled with a selection of plants according to taste, and these are planted into moderately large pots sufficient to last them through the growing season, they will require little other attention besides watering, which must be very regularly and constantly done. Plants in this situation, from the position they occupy, are extremely liable to suffer from drought, if there is

Fig. 1

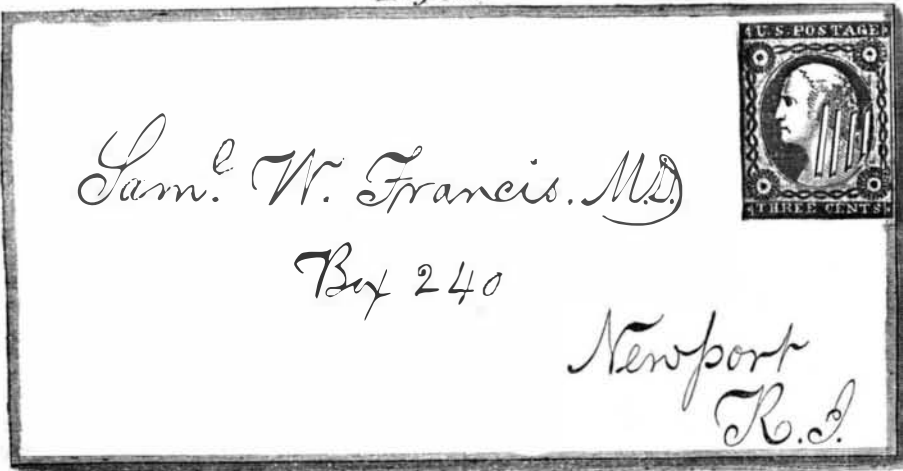


FRANCIS'S STAMP CANCELER.

ened to the metallic tube, B, which has a collar, C, upon it. The ends of the levers, D, are jointed to the lugs on the collar, by links, E; these levers work on a small shaft, F, which passes clear through the body of the instrument, and is there fixed in its place by a pin and washer. In the extreme end of the instrument, opposite the knob, is the defacing device, consisting of two serrated steel quadrants, G, which work on the shaft, F, previously mentioned; (one side of the jaw of the instrument is removed to show the arrangement), and have lugs, H, by which they are connected with the levers, D. The quadrants work in a slot in the instrument, on each side of which there are serrated plates, I, slightly oval on their faces, which are secured to the bottom by screws, and can be set out, or depressed, in order to

the least neglect in administering their supply of water. This applies equally to all kinds of plants cultivated in these situations. In order to protect the plants from injury in consequence of the powerful rays of the sun striking directly on the side of the pots, often very thin and forming a mere shell around the roots, it is advantageous to set the pots containing the plants within others just large enough to contain them; the double sides of the pots, together with the small open cavity all around between the two, prevent the evil to a very great extent; and it may be still further prevented by choosing the exterior pot still larger, and filling the cavity between the two with moss, which is to be kept damped. Where moss is easily procured, a bed of it may be formed on the window-ledge, in which the

Fig. 2.



make the defacing gear cut to a greater or less depth, as may be desired. The tube carrying the collar, C, slides upon another tube, J, and by pressing down with the wooden knob, A, the plates, I, holds the instrument from slipping, while the quadrants, actuated by the levers, through the motion of the upper tube, work in opposite directions, and saw, or scratch the face of the stamp so that it is irremovable in a sound condition; a concealed spring in the upper tube pushes the lower tube out again, and readjusts the instrument for use. This is in brief the whole of the invention, and it is most satisfactory in its workings. We think, for a mechanical defacer, it is the best one we ever saw; as it is very strong, cannot get out of order with any kind of decent usage, and will do the work effectually, while it does no injury to the letter itself, or its contents. It is now in use we believe in the office at Newport, R. I., where we are told it is much liked. The ac-

pots could be plunged, the moss being kept damp.—*Cottage Gardener.*

A Capital Idea.

A pleasure carriage passed our office, yesterday, the black top of which had been entirely covered with white muslin. The purpose of thus changing the color was no doubt to avoid the heat that a black surface, exposed to the rays of a burning sun, is known to absorb so much more than a white one. Any one who rides under a black covering, in a sun like that of the past two days, may know, by putting his hand against it, that it becomes as hot as a boiler plate with a full head of steam up, to the great discomfort of the occupant: while the old farmer, under the white linen cover of his market wagon, jogs along comparatively cool. The cost of making the change from black to white is, in such cases, trifling; and the advantage is great, to those

who ride much in the sun. The man who put it in practice, in the instance mentioned, is an observer and a philanthropist, whose example should command universal favor.—*Philadelphia Ledger.*

SOUND REGISTERING MACHINE.—M. Koenig, of Prussia, recently invented a machine by which sound points its own undulations and vibrations. A glass cylinder is coated with fine lamp-black, and applied turning to a tuning key, when the latter vibrates. From impressions left on the lamp black, all the different vibrations of sound, from A to G, are registered, and from the records a beautiful series of acoustic charts have been drawn out.



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The SCIENTIFIC AMERICAN has the reputation, at home and abroad, of being the best weekly journal devoted to mechanical and industrial pursuits now published; and the proprietors are determined to keep up the reputation they have earned during the eighteen years they have been connected with its publication.

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The SCIENTIFIC AMERICAN is indispensable to every inventor, as it not only contains illustrated descriptions of nearly all the best inventions as they come, but each number contains an Official List of the Claims of all the Patents issued from the United States Patent Office during the week previous; thus giving a correct history of the progress of inventions in this country. We are also receiving, every week, the best scientific journals of Great Britain, France and Germany; thus placing in our possession all that is transpiring in mechanical science and art in those old countries. From those journals we shall continue to transfer to our columnoscopic extracts of whatever we may deem of interest to our readers.

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No person engaged in any of the mechanical pursuits should think of doing without the SCIENTIFIC AMERICAN. It costs but six cents per week; every number contains from six to ten engravings of new machines and inventions which cannot be found in any other publication. It is an established rule of the publishers to insert none but original engravings, and those of the first class in the art, drawn and engraved by experienced artists, under their own supervision, expressly for this paper.

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