

1,352.—D. H. Dotterer, of Chicago, Ill. (formerly of Memphis, Tenn.), for Improvement in Journal Boxes. Patented May 7, 1861:

I claim, first, Providing in journal boxes an endless revolving band or ring, M, substantially as and for the purposes described.

Second, I claim the sheave, J, and axial pin, i, for supporting the upward thrust on the endless revolving band or ring, M, within the journal box, substantially as described.

Third, I claim the auxiliary end bearing, I, for the axle journal, substantially as described.

1,353.—J. C. Lefferts, of New York City, assignee of J. F. Martin and H. C. Nicholson, of Mount Washington, Ohio, for Improvement in Preserve Cans. Patented Feb. 15, 1859:

I claim, first, A fruit or provision can, to be hermetically sealed or tightly closed, constructed of metal, lined on the inside with a vitreous body to resist the action of acids contained in the substances to be preserved.

Second, A vitreously enameled iron provision can or jar, substantially as herein set forth.

Third, The combination of a vitreously lined metallic cover with a preserve jar, substantially as set forth.

## 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.....	\$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 Disclaimers.....	\$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 reference to 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 (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 services 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.

### The Examination of Inventions.

Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit it 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.

The vice 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 \$5, 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 is 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.

### Foreign Patents.

We are very extensively engaged in the preparation and securing of

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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.

### 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 mination 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 story of the case, inclosing the official letters, &c.

### 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.

### 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.



A. B., of Conn.—Your plan of a Broadway railroad is not new. If you will turn to the back files of the SCIENTIFIC AMERICAN you will find the same thing illustrated. Such a plan will never be carried out; it would destroy the street.

D. E. R., of Mich. & J. H. D., of Mass.—We do not now remember the address of the parties to whom you wish to communicate. We often answer inquiries through our columns to correspondents whose letters being of no further importance, are not preserved. You could doubtless, reach the parties by inserting a short advertisement in our columns.

F. A. St. P., of N. Y.—If you are convinced that your invention is capable of being successfully applied to destroy the rebel iron-clads, you should explain it to those who are in authority and who can assist you to apply it, before making it public. We have had a great number of plans proposed to us for destroying enemy's ships, some of which were plausible, others quite impracticable.

A. S., of Conn.—The sulphate of lime is employed to keep ciders sweet. One quarter of an ounce of it is used for each gallon of cider. You will find the method of applying it described on page 260, Vol. V. (new series) SCIENTIFIC AMERICAN, and the reaction which occur in its use are explained on page 281, same volume.

W. W. D., of Mass.—There is much room for speculation respecting the forces of nature and the cause of light, but such speculations, apart from experiments and long-continued observations, are very unsatisfactory. It is believed that the sun has a luminous atmosphere, and that it is an incandescent body. Its luminous atmosphere is due to its incandescence, just as the flame of a candle is the result of burning.

H. W., of Canada.—Wood when subjected to a high heat in a vacuum becomes charred, because it contains oxygen and hydrogen as well as carbon.

A. D. S., of Pa.—Experiments have been made with falling bodies, with reference to proving the axial motion of the earth. A bullet dropped from the top of St. Paul's in London has struck one inch east of the point described by a plumb line. It occupied 4½ seconds in its descent. This is due to the axial motion of the earth.

H. M. J., of Ohio.—Pencil marks on paper are simply portions of the black lead left by abrasion in writing, and india rubber removes these by mechanical action. You will find the cause of the falling of the mercury in a barometer before a storm described in any good book on natural philosophy.

H. E. C., of New Orleans.—The cheapest and best material for street side-walks known to us, is good Kingston stone flagging. We have seen composition pavements laid down in this city, all of which proved failures. Tin is the next best roofing material to slate. As you desire a fire and water-proof roofing material, suitable for your climate, of course we cannot recommend an inflammable composition made of asphalt and tar.

R. C., of C. W.—You say you sent us a slip in March last cut from a British paper in reference to the cost of the Russian war and desire us to return it, that you may paste it into your scrap-book. We should be most happy to comply with your request, but we have no such paper in our possession. You will readily see that we cannot take to preserve and return such contributions.

E. L., of N. J.—It is scarcely possible to become a good chemist at the present day, without going through a regular course of instruction, combined with study and personal experimenting. "Well's Chemistry" and "Miller's Elements of Chemistry" are good works for you to study.

### Money Received

At the Scientific American Office on account of Patent Office business, from Wednesday, November 5, to Wednesday, November 12, 1862:—

J. M. R., of N. J., \$20; E. B., of Cuba, \$20; J. L. B., of R. I., \$20; J. L. B., of Mass., \$20; A. C., of N. Y., \$45; N. A. B., of N. Y., \$45; E. V. L., of N. Y., \$20; D. M. J., of N. Y., \$20; W. J., of Minn., \$45; N. F. S., of Ill., \$20; P. D., of Minn., \$20; J. M. M., of Conn., \$45; C. E. S., of Wis., \$20; C. & McF., of Mass., \$20; H. K., of N. Y., \$20; D. D. P., of N. Y., \$70; G. C., of Mich., \$20; U. D. & B., of Conn., \$20; F. W. H., of Mass., \$20; D. K., of Pa., \$15; J. E. S., of Maine, \$25; J. E. Van W., of N. J., \$15; I. C., of Ill., \$25; I. G., of R. I., \$130; G. H. F., of N. Y., \$15; E. E., of Ill., \$22; B. R., of Mass., \$250; T. C. F., of N. Y., \$25; H. M., of Wis., \$15; A. L., of N. Y., \$25; R. H. W., of N. Y., \$25; G. C., of N. Y., \$12; M. L. G., of Wis., \$25; H. P., of Maine, \$22; J. D., of Ky., \$15; P. H., of N. Y., \$25; A. C. C., of Mass., \$15; L. D. B., of N. J., \$22; W. P., of N. Y., \$15; G. E., of Ohio, \$25; C. R., of Mich., \$15; J. U. M., of Mich., \$15; C. D., of Ill., \$20; S. F., of N. Y., \$15; Van W. and McF., of N. Y., \$175; J. W. B., of Mich., \$45; G. C., of N. Y., \$15; W. G., of N. Y., \$20; N. & D., of N. Y., \$20; S. L., Jr., of N. Y., \$25; M. H. F., of N. Y., \$25; G. G. of N. J., \$25; H. S. B., of La., \$30; C. H. M., of N. Y., \$25; G. G. C., of N. Y., \$12.

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 November 5, to Wednesday, November 12, 1862:—

G. G. G., of N. Y.; C. H. M., of N. Y.; J. R. A., of Pa.; I. C., Jr. of Ill.; J. E. S., of Maine; P. S., of N. Y.; G. C., of N. Y.; H. S. B. of La. (2 cases); M. L. G., of Wis.; G. G., of N. J.; A. L., of N. Y.; R. H. W., of N. Y.; J. A. De B., of N. Y.; M. H. F., of N. Y.; N. & D., of N. Y.; S. L., Jr., of N. Y.; D. D. P., of N. Y.

### TO OUR READERS.

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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 a 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.

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.

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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Consultation may be had with the firm between NINE and FOUR o'clock, daily, at their PRINCIPAL OFFICE, No. 37 PARK ROW, NEW YORK. We have also established a BRANCH OFFICE in the CITY OF WASHINGTON, on the CORNER OF F AND SEVENTH STREETS, opposite the United States Patent Office. This office is under the general superintendence of one of the firm, and is in daily communication with the Principal Office in New York, and personal attention will be given a Patent Office in all such cases as may require it. Inventors and others who may visit Washington, having business at the Patent Office are cordially invited to call at their office.

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Immediately after the appointment of Mr. Holt to the office of Postmaster General of the United States, he addressed to us the subjoined very grateful testimonial:—

MESSRS. MUNN & Co.—It affords me much pleasure to be testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and I doubt not, justly deserved) the reputation of energy, marked ability, and uncompromising fidelity in performing your professional engagements. Very respectfully, Your obedient servant, J. HOLT.

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**On Shoeing Horses.**

The following are some extracts from a letter in the *Prairie Farmer* by G. H. Dadd, veterinary surgeon. He says :—

One of the principal objects in applying a shoe is to protect the foot; next, we must aim to preserve the natural action and tread of the foot. With this object in view the shoe should be made concave on the ground surface. An unshod horse, or one in an aboriginal condition, has a concave sole surface to the foot, and wisely is it so ordained; were it otherwise, the animal would be unable to obtain secure foothold when climbing eminences or traveling over level surfaces.

The action of concave feet may be compared to that of the claws of a cat or the nails on the fingers and toes of man; the nails and toes are the fulcrums; they grasp, as it were, the bodies with which they come in contact, and thus they secure a fulcrum of resistance when traveling or grasping. Now in order to preserve the natural, mechanical actions of the horn and sole, the ground surface of the shoe must correspond exactly with the ground surface of the foot; that is to say, the ground surface of the shoe must be beveled, cup fashion, its outer edge being prominent, corresponds to the lower and outer rim of the hoof; while the shoe being hollow, it resembles the natural concavity of the sole of the foot.

No matter what may be the form of the foot, whether it be high or low heeled, contracted at the heels, lengthened or shortened at the toe, or having a concave or convex sole, it matters not, the ground surface of the shoe must be concave. In every other part of the shoe alterations and deviations from any given rule or form are often needed in consequence of the ever-varying form of the foot, and the condition of the same both as regards health and disease; but the sole of the foot being concave presents a pattern for the ground surface of the shoe, which the smith with all his skill cannot improve on, and if all such craftsmen were to follow this pattern more closely than they do, there would be fewer accidents in falling and a less number of lame horses.

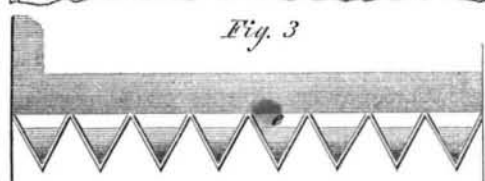
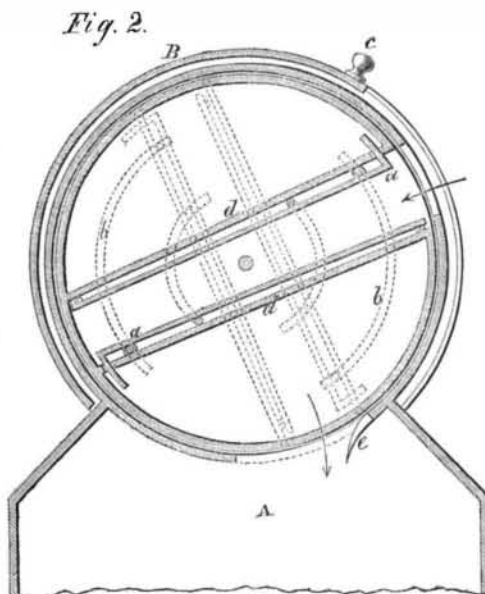
**BROWN'S PATENT AUTOMATIC LETTER-BOX.**

The postal necessities of large cities involve the provision of proper facilities for mailing and collecting the letters which it is desirable to dispatch without going to the General Office. This end has been, in a measure, attained by the street letter-boxes which are affixed to the lamp posts, or placed in stores. In the former there are many objections, some of which are that only letters can be deposited in them, that they are not absolutely safe, and that the openings are too narrow to admit anything but an ordinary letter. These faults have been met and overcome, we think, by Mr. J. W. Brown of this city, an engraving of whose invention we herewith present. It consists of an ornamental case—of any desired shape, having a slotted cylinder on top. Outwardly the case is perfectly plain in appearance, but by taking hold of the knob or button, and rotating the outer cylinder upon its axis, an opening is disclosed which is large enough to admit a package equal in bulk to two newspapers. In this opening the mail matter is placed, the hand being withdrawn, the cylinder rotates and the letters or papers are securely deposited in the body of the case, from whence no one can take them but those provided with the key. Fig. 1, shows the box, A, affixed to the lamp post; the outer cylinder, B, is thrown back and the place of deposit disclosed. The parallel lines, *a*, at the top of the opening, represent the edges of the valves or shelves, a peculiarity of the box, and the projection, *b*, at the end of the cylinder, is the point of suspension. The knob, *c*, is the handle which moves the outer case, B. Fig. 2 represents the cylinder and its valves in section; the valves, *a*, are suspended from their sides, and are arranged upon both sides of the opening or throat, in such a manner that they constitute a false passage. When the case is rotated they close together by means of the action of the pins in the slots, *b*, shown by the dotted lines, and also by their own gravity. When the mail matter is deposited in them, and the cylinder, B, released, the cylinder being heavier on one side, falls down, and the valves, *a*, are thrown close up against the walls, *d*, or natural

opening of the cylinder. By this means the passage is made much wider than it was when the paper or letter was first deposited, and all possibility of its



choking or wedging fast is done away with. The parallel dotted lines show the position of the cylinder



and its valves when the letter is deposited, and the arrows indicate the opening and discharge. A serrated edge or saw *e*, is attached to the inside of the case, extending, just below the opening, for its whole length; this is for the purpose of catching any strings

or other devices which evil-disposed persons might employ to abstract the deposits.

The construction and arrangement of this letter-box is very ingenious and we think well adapted to its object. When not opened by the depositor, it is proof against wet, or dust, and presents outwardly a uniform and pleasing appearance.

The patent for this invention was procured through the Scientific American Patent Agency, April 15, 1862. Further information respecting it may be obtained by addressing Mr. J. W. Brown at 666 Ninth avenue, New York city.

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**FOR 1863!**

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