

RE-ISSUES.

- 1,704.—Sewing Machine.—S. Pancoast (assignee of Geo. Fetter), Philadelphia, Pa. Patented Oct. 23, 1860 :
I claim, first, The hook or loop-catcher, N, formed substantially as described and illustrated, the said hook being arranged to revolve around or adjacent to a spool case, and being so situated in respect to the eye-pointed needle, and having such a motion imparted to it in connection with its revolving motion that it will seize the needle thread, carry the same around, or partly around, a spool case, and release the said loop of thread, all substantially as set forth.
Second, The guard, M, or its equivalent, constructed, arranged, and operating on the thread which passes from the spool case to the fabric, substantially as set forth.
Third, The stationary spindle, I, with its disk, J, the hollow spindle, G, and carrier, H, the annular cap, L, and spool case, K, the whole being arranged and operating substantially as set forth.
- 1,705.—Mode of casting Plow Plates.—F. F. Smith (assignor to himself and the Collins Company), Collinsville, Conn. Patented Nov. 20, 1860 :
I claim, in connection with the making of cast cast-steel plow plates in molds, the opening or loosening up of the mold before the molten metal chills enough to shrink to any extent, for the purpose of relieving the plate or casting, and to prevent it from cracking by the shrinkage of the cast cast-steel in cooling, substantially as herein described.
- 1,706.—Plow.—F. F. Smith (assignor to himself and the Collins Company), Collinsville, Conn. Patented Nov. 20, 1860 :
I claim a plow the plates of which are made of molten cast-steel, substantially as and for the purpose described.
- 1,707.—Mode of attaching Door Knobs to Spindles.—Emery Parker, Meriden, Conn. Patented May 5, 1863 :
In combination with a screw-threaded knob, and the screw-threaded angular spindle, I claim the key or clamp piece, b, or its equivalent, fitting a recess in the end of the shank, located entirely within the escutcheon, and concealed thereby from view, in the manner and for the purpose substantially as set forth.
I claim the employment of the independent washer, e, in combination with the spindle, escutcheon, knob, shank, and metal piece, b, when constructed and arranged substantially as and for the purpose described.
- 1,708.—Buckle.—Frederick Stevens, Harrison Township, N. J., assignee of Luther Fogg, Boston, Mass. Patented June 2, 1863. Re-issued Aug. 11, 1863 :
I claim the connection of the tongue with the surrounding frame by a hinged joint, substantially as described, in combination with its connection with the metallic shank by a second hinged joint back of, and parallel with, the hinged joint by which it is connected with the surrounding frame, substantially as described, whereby the tongue can be made to liberate the end of the strap independently of the bending or yielding of the connection between the shank and the strap, or other article to which it is to be attached.
I also claim the curved or bent frame having the inner face of the cross bar, b', sloping or beveled, or of equivalent form, in combination with the spring tongue, substantially as described.
And I also claim grooving the gripping end of the tongue, substantially as described, when combined with the surrounding frame, substantially as described.

DESIGNS.

- 1,964.—Lady's Hat.—Wm. E. George, Wenthams, Mass., assignor to Joseph Cowell.
- 1,965.—Plate of a Cook's Stove.—Garrettson Smith & Henry Browne (assignors to J. G. Abbott and C. Noble), Philadelphia, Pa.



PATENTS
GRANTED
FOR SEVENTEEN YEARS!

MUNN & COMPANY,

In connection with the publication of the SCIENTIFIC AMERICAN, have acted as Solicitors and Attorneys for procuring "Letters Patent" for new inventions in the United States and in all foreign countries during the past seventeen years. Statistics show that nearly ONE-THIRD of all the applications made for patents in the United States are solicited through this office; while nearly THREE-FOURTHS of all the patents taken in foreign countries are procured through the same source. It is almost needless to add that, after seventeen years' experience in preparing specifications and drawings for the United States Patent Office, the proprietors of the SCIENTIFIC AMERICAN are perfectly conversant with the preparation of applications in the best manner, and the transaction of all business before the Patent Office; but they take pleasure in presenting the annexed testimonials from the three ex-Commissioners of Patents:—

MESSRS. MUNN & CO.—I take pleasure in stating that, while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE CAME THROUGH YOUR HANDS. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the office, a marked degree of promptness, skill, and fidelity to the interests of your employers. Yours very truly,
CHAS. MASON.

Judge Mason was succeeded by that eminent patriot and statesman, Hon. Joseph Holt, whose administration of the Patent Office was so distinguished that, upon the death of Gov. Brown, he was appointed to the office of Postmaster-General of the United States. Soon after entering upon his new duties, in March, 1859, he addressed to us the following very gratifying letter:

MESSRS. MUNN & CO.—It affords me much pleasure to bear 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.

Hon. Wm. D. Bishop, late Member of Congress from Connecticut, succeeded Mr. Holt as Commissioner of Patents. Upon resigning the office he wrote to us as follows:

MESSRS. MUNN & CO.—It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your agency; and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully, your obedient servant,
Wm. D. Bishop.

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 written reply, corresponding with the facts, is promptly sent, free of charge. Address MUNN & CO., No. 37 Park Row, New York.

As an evidence of the confidence reposed in their Agency by inventors throughout the country, Messrs. MUNN & CO. would state that they have acted as agents for more than 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 they have taken out patents have addressed to them most flattering testimonials for the services rendered them; and the wealth which has inured to the individuals whose patents were secured through this office, and afterwards illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! Messrs. MUNN & CO. would state that they never had a more efficient corps of Draughtsmen and Specification Writers than those employed at present in their extensive offices, and that they are prepared to attend to patent business of all kinds in the quickest time and on the most liberal terms.

PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE.

The service which Messrs. MUNN & CO. 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 they may acquire of a similar invention from the records in their Home Office. But for a fee of \$5, accompanied with a model, or drawing and description, they 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 the Branch Office of Messrs. MUNN & CO., corner of F. and Seventh streets, Washington, by experienced and competent persons. Many thousands of such examinations have been made through this office, and it is a very wise course for every inventor to pursue. Address MUNN & CO., No. 37 Park Row, New York.

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 pre-paid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by a draft on New York, payable to the order of Messrs. 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.

Patents are now granted for SEVENTEEN years, and the Government fee required on filing an application for a patent is \$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 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 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 (except in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

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 is \$10. A pamphlet of advice regarding applications for patents and caveats is furnished gratis, on application by mail. Address MUNN & CO., No. 37 Park Row New York.

REJECTED APPLICATIONS.

Messrs. MUNN & CO. are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of their Washington Agency to the Patent Office affords them rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Their success in the prosecution of rejected cases has been very great. The principal portion of their 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 MUNN & CO., on the subject, giving a brief history of the case, inclosing the official letters, &c.

FOREIGN PATENTS.

Messrs. MUNN & CO., are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business they have offices at Nos. 66 Chancery lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. They think they can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through their 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 MUNN & CO.'s Agency, the requirements of different Government Patent Offices, &c., may be had, gratis, upon application at the principal office, No. 37 Park Row, New York, or any of the branch offices.

SEARCHES OF THE RECORDS.

Having access to all the official records at Washington, pertaining to the sale and transfer of patents, MESSRS. MUNN & CO., are at all times ready to make examinations as to titles, ownership, or assignments of patents. Fees moderate.

INVITATION TO INVENTORS.

Inventors who come to New York should not fail to pay a visit to the extensive offices of MUNN & CO. They will find a large collection of models (several hundred) of various inventions, which will afford them much interest. The whole establishment is one of great interest to inventors, and is undoubtedly the most spacious and best arranged in the world.

MUNN & CO. wish it to be distinctly understood that they do not speculate or traffic in patents, under any circumstances; but that they devote their whole time and energies to the interests of their clients.

COPIES OF PATENT CLAIMS.

MESSRS. MUNN & CO., having access to all the patents granted since the rebuilding of the Patent Office, after the fire of 1836, can furnish the claims of any patent granted since that date, for \$1.

THE VALIDITY OF PATENTS.

Persons who are about purchasing patent property, or patentees who are about erecting extensive works for manufacturing under their patents, should have their claims examined carefully by competent attorneys, to see if they are not likely to infringe some existing patent, before making large investments. Written opinions on the validity of patents, after careful examination into the facts, can be had for a reasonable remuneration. The price for such services is always settled upon in advance after knowing the nature of the invention and being informed of the points on which an opinion is solicited. For further particulars address MUNN & CO., No. 37 Park Row New York.

EXTENSION OF PATENTS.

Many valuable patents are annually expiring which might readily be extended, and if extended, might prove the source of wealth to their fortunate possessors. Messrs. MUNN & CO. are persuaded that very many patents are suffered to expire without any effort at extension, owing to want of proper information on the part of the patentees, their relatives or assigns, as to the law and the mode of procedure in order to obtain a renewed grant. Some of the most valuable grants now existing are *extended patents*. Patentees, or, if deceased, their heirs, may apply for the extension of patents, but should give ninety days' notice of their intention.

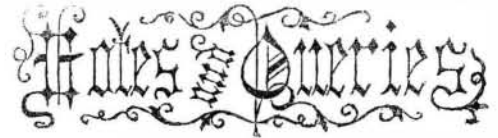
Patents may be extended and preliminary advice obtained, by consulting or writing to MUNN & CO., No. 37 Park Row, New York.

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



P. D. G., of N. Y.—You cannot straighten your circular saw by hammering. The face of the hammer, or drop, as well as of the anvil, must be equal in extent to the size of the saw. Manufacturers of circular saws are provided with tools of this description.

B. O., of N. Y.—Chloride of nitrogen is made by passing chlorine through salammiac. Great caution is requisite to avoid accidents.

L. M. R., of Ohio.—Caloric engines are not made large enough to operate flour mills. They are used chiefly when small power is needed.

J. M., of Pa.—We presume you can obtain rifle barrels of the kind you mention by addressing Messrs. Blunt & Sym, of this city.

G. C., of N. Y.—Plow-shares are painted with blue paint, and varnished.

A. Van V., of N. Y.—The mode of setting your boiler is defective in one point; that is the smoke-box, or more properly the combustion chamber at the end. The boiler is but 13 feet long, and you have a smoke-box at the end 12 feet long. The gases evolved from burning fuelignite only at certain temperatures, and your smoke-box is so long that the gases aforesaid get so cool that they pass out through the flues unconsumed. Shorten your smoke-box one-half at least; and you may make it even less with benefit. Try it six feet long first. Otherwise your boiler is well set.

E. J. B., of Ohio.—It takes time to burn gunpowder as it does to do anything else. If you will put a very large charge in a gun and fire it over snow, you will find unburned grains on the surface of the snow. The quantity that will burn in a gun depends upon the length and caliber of the gun, the quality of the powder, the size of the grains, and other conditions, all of which perhaps are not understood.

T. N., of N. J.—The proper proportion for cement pipe is one of water cement to three of sand. Gravel from the size of a pigeon's egg down is better than fine sand, and it must be perfectly clean and free from mold or vegetable matter. The cement and sand must be thoroughly mixed before the water is added, and it must be used immediately after mixing. The most common cause of failure is a poor quality of cement.

O. H. R., of N. Y.—We know of no oil that can be burned with a blow-pipe without smoke or smell. A lamp that would burn kerosene in this way would be a valuable invention, now that alcohol is so high. Probably all that is required is a thorough mixing of air with the vapor of the oil.

G. B. S., of Canada.—If you are a Canadian the patent fee will be \$500, to be paid at the time the application is made.

F. P. C., of Mass.—Some time ago we gave the rule for calculating the horse-power of a steam-engine as follows:—Square the diameter of the cylinder and multiply the product by 7854, this will give the number of inches area in the piston. Multiply the area by the pressure of steam and the number of feet the piston travels per minute. This must be divided by 33,000, which is supposed to be the standard for a horse-power. It seems that some have misunderstood this simple matter, and one subscriber asks whether a stroke is one movement of the piston or two. If the

whole number of feet traveled by the piston in a minute be reckoned there can be no confusion. Of course, if a piston goes two feet in one movement through the cylinder, in coming back it travels two more, or four in one revolution. By the rule given, a 4-inch cylinder and 12 inches stroke, making 100 turns in a minute, with 50 pounds pressure, is 3111 horse-power. The square of the diameter is 4 x 4 = 16; which, multiplied by 7854, gives 125664 as the piston area. This again multiplied by the steam-pressure, 50 pounds gives 6283200, which, multiplied by the distance the piston travels per minute, 100 turns (or 200 feet), gives 1256640000; this being divided by 33,000 pounds, a standard horse-power, gives 3111 horse-power. We trust that is clear enough.

J. & S., of N. Y.—B. is right. 100 cubic inches of atmospheric air weighs 31 grams, at a temperature of 62°, and under the average pressure at the level of the sea. If the pressure is doubled, 62 grains will be compressed into 100 cubic inches. Of course, a bottle filled with air is heavier than an empty bottle, and will sink deeper in water.

Money Received.

At the Scientific American Office, on account of Patent Office business, from Wednesday, June 8, 1864, to Wednesday, June 15, 1864:—

- C. H., of N. Y., \$25; J. V. C. C., of Conn., \$10; C. S., of N. Y., \$25; N. & A., of Conn., \$41; E. B., of N. Y., \$41; H. L., of N. J., \$20; A. G. T., of Ill., \$20; J. R. A., of Pa., \$20; O. G. B., of N. Y., \$16; C. A. S., of N. Y., \$16; F. R. W., of Ill., \$45; J. D., of N. Y., \$16; J. V., of N. Y., \$20; H. U., of N. Y., \$75; H. P. G., of Pa., \$40; W. S. R., of N. J., \$25; D. C. W., of Mich., \$25; I. H., of N. H., \$16; J. R. F., of Ind., \$16; E. H. B., of Pa., \$25; S. L., of N. J., \$16; J. B., of Mich., \$25; T. S., of N. H., \$30; A. W. O., of Mich., \$26; R. A. C., of N. Y., \$250; G. McK., of N. Y., \$15; J. D., of Ill., \$10; W. H. A., of N. Y., \$25; J. W. H., of N. Y., \$16; J. W., of N. Y., \$22; L. A. H., of Mass., \$16; D. L., of Pa., \$25; A. W. H., of N. Y., \$35; C. S., of N. Y., \$12; H. H., of N. Y., \$16; R. P., of N. Y., \$31; W. H. A., of N. Y., \$16; A. T. T., of N. Y., \$20; H. L., of Mich., \$20; I. H., of Pa., \$20; P. B., of N. Y., \$41; J. M. G., of Ill., \$20; W. M. S., of Mich., \$45; A. J. P., of N. Y., \$16; E. H., of Ind., \$16; S. N. T., of Wis., \$15; B. & G., of Ill., \$41; W. T., of N. Y., \$16; J. P., of Mass., \$25; F. L. T., of Wis., \$25; J. R., of Mass., \$16; C. L., of Canada, \$25; C. & M., of Mass., \$16; A. B. R., of Iowa, \$25; W. P. W., of N. Y., \$25; C. & P., of N. Y., \$25; T. & P. S., of Pa., \$16; T. S., of Pa., \$20; A. B. A., of Conn., \$23; E. B., of N. Y., \$25; B. & D., of N. J., \$15; G. H. G., of Pa., \$45; M. J. D., of Ohio, \$30; C. E. S., of Iowa, \$25; W. L. M., of N. J., \$50; H. G., of N. Y., \$15; W. M., of N. Y., \$16; R. M., of N. Y., \$20; A. W. H., of N. Y., \$16; I. N. C., of Ohio, \$20; E. I. M., of N. Y., \$20; E. B., of C. W., \$16; E. S. A., of N. Y., \$41; J. N. H., of Ind., \$45; J. M., of N. Y., \$20; J. S. McC., of N. J., \$20; C. B., of Ind., \$50; T. L. P., of Ohio, \$16; J. W. S., of Mass., \$16; T. M. S., of Tenn., \$20; L. M., of Mich., \$25; F. M., of Ill., \$16; S. M. B., of Mich., \$15; W. H. H., of Ill., \$16; H. B., of N. Y., \$16; D. F. W., of Maine, \$25; L. S. S., of Maine, \$26; R. R., of Ill., \$10; E. C. S., of Maine, \$16; D. L., of Ohio, \$32; E. B. B., of Conn., \$25; S. & T., of N. Y., \$25; E. H. C., of Mich., \$45; D. C. H., of Pa., \$45; T. & J. C., of Mich., \$25.

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, stating 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, June 8, 1864, to Wednesday, June 15, 1864:—

- C. H., of N. Y.; J. V. C. C., of Conn.; E. B., of N. Y.; E. H. H., of N. Y.; A. B. A., of Conn.; W. P. W., of N. Y.; T. M. S., of Tenn.; J. P., of Mass.; E. H. B., of Pa.; A. B. R., of Iowa; S. & T., of N. Y.; M. J. D., of Ohio; E. G. W., of Minn.; A. W. H., of N. Y.; C. S., of N. Y.; E. S. A., of N. Y.; L. L. S., of Me.; C. W. & B., of Pa.; H. U., of Conn. (3 cases); L. M., of Wis.; W. S. R., of N. J.; J. H., of Canada; D. F. W., of Maine; E. B., of N. Y.; J. E. A. R., of Cal.; T. & J. C., of Mich.; W. L. M., of N. Y. (2 cases); O. & G., of N. Y.; C. S., of N. Y.; C. & P., of N. Y.; E. B. B., of Conn.; A. W. O., of Mich.; F. L. T., of Wis.; D. W. C. W., of Mich.; O. B., of Iowa; N. & A., of Conn.; W. H. A., of N. Y.; H. S., of Iowa; D. L., of Pa.; C. E. S., of Iowa.

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 enclosing \$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.

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.

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.

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 acknowledgement of our reception of their funds.

Back Numbers and Volumes of the "Scientific American."

VOLUMES I., III., IV., VII., VIII. AND IX., (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 VOLS. II., V. and VI. are out of print and cannot be supplied. We are unable to supply any of the first six numbers of the current volume. Therefore all new subscriptions will begin hereafter with the time the money is received

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.

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.

INCORUSTATION—A SURE AND UNINJURIOUS REMEDY. Eight years in use. Over 7,000 satisfactory tests. Winans' "Anti-Incrustation Powder" accomplishes the purpose and costs less than the fuel it saves. The cheapest and best article in the market. For circular address H. N. WINANS, 11 Wall street, New York.

MASON'S PATENT FRICTION CLUTCHES FOR connecting and disconnecting shafting and for use on all machinery which requires to be started without sudden shock, such as Hoisting and Mining Machinery, Calenders, Flour Mills, Rolling Mills, etc., are manufactured by WILLIAM MASON, Providence, R. I.

RIGHTS IN THE DIAMOND MOWER FOR SALE.—This mower is better adapted for a reaper attachment than any other mower having two driving wheels. It having a side vibrating motion, the same as of a one wheel driver. Want to purchase good reaper attachment. Address WM. VAN ADEN, Poughkeepsie, N. Y.

FOR SALE.—A DANIELS' PLANING MACHINE, IN first-class order. Planes 10 feet long by 20 inches wide with dead weight on. Address Post-office box 35, Paterson, N. J.

"THE SOUL"—IS IT IMMORTAL?—THE SCIENTIFIC EVIDENCES; Conscious Nature of the Soul. Indestructibility of Forces. Law of Adaptation. Essences. The Argument a priori and a posteriori. Our Aspirations. Are we Immortal, or are we Not? Have Animals a Future Existence? The Second Sight. A Remarkable Vision. Indian Magnetizers. The Shadow on the Wall. In the July Double No. Illustrated PHRENOLOGICAL JOURNAL, 20 cents, by first post, or \$2 a-year. Newsmen have it. Subscribe now. FOWLER & WELLS, No. 389 Broadway, New York.

MECHANICAL AND OUT-DOOR PHOTOGRAPHY.—GEO. G. ROCKWOOD, Photographer, 839 Broadway, New York, will, during the summer months, give his personal attention to Photographing Locomotives, Machinery of all kinds, in shops if necessary, and to taking all kinds of out and in-door views, in any part of the country. Refers to W. G. Hamilton, Jersey City Locomotive Works; B. J. Burnett and C. Holmes, of the Novelty Works; J. M. Toucey, Hudson River Railroad; and others.

NOTICE. POWER OF ATTORNEY GIVEN BY US to Nelson Reisdorf (to sell our patent combined Arm-chair and Crib) has been revoked. The patent is for sale. Apply to RAY & SHALTERS, Alliance, Ohio. June 6th, 1864.

THE PRINTER'S DEVIL.—THE PUBLISHER OF this popular illustrated literary family paper will send it six months on trial to any new subscriber, for the nominal sum of twenty-five cents. We wish to get it introduced in every part of the country. Address "PRINTER'S DEVIL," 113 Fulton street, New York.

MEDICAL PURVEYOR'S OFFICE, New York, June 9, 1864. IMPORTERS AND DEALERS IN MEDICINE, HOSPITAL STORES, Bedding, etc., etc., are invited to submit their quotations to the Army Medical Purveyor, at his Office, 466 Broome street, for his information and guidance in the purchase of supplies.

CAVALRY HORSES WANTED. CAVALRY BUREAU, OFFICE OF ASSIST. QUARTERMASTER. I WILL PURCHASE IN OPEN MARKET ALL THE Cavalry Horses that may be presented and pass inspection at the Government Stables, corner of 16th avenue and 35th street, in this city, until further notice. Payment will be made in checks payable in certificates of indebtedness, when seven (7) or more horses are received. Price, one hundred and fifty dollars each. GEO. A. BROWNING, Capt. and Assist. Qr. Mr.

TO THE CAPITALISTS OF THE UNITED STATES. WHITE'S ADAMANT ROOFING. This unique and fire-proof Roofing was patented the 25th of February, 1862. It has been subjected to the most severe tests for the last four years, and is now pronounced by parties having it on as "the most durable, beautiful, and reliable fire-proof roofing ever invented." It is not affected by heat or cold, and appears like one solid sheet of slate or cast-iron after being on a short time.

The patentee has long forborne giving it public notice until its reliability was proven in all quarters. Insurance Companies and public men having thoroughly investigated it are now urging its rapid introduction as a saving of many millions of dollars to the country yearly. The patentee now for the first time invites the attention of capitalists, builders, and all who desire a monopoly of this most lucrative business, to this important patent. For any further information concerning this new Roofing, address WELLS & WHITE, Patentee of Adamant Roofing, Cincinnati, Ohio.

MACHINES FOR PAPER BOXES.—SQUARE CUTTERS (or creasers), corner cutters, oval cutters (cutscircles also), &c. Also a valuable invention for paper box manufacturers for sale by CHAS. W. JENCKS & BRO., Providence R. I. Send stamp for terms.

GRAD MEN, LIVING AND DEAD.—HANCOCK, SEDGWICK, WADSWORTH, HAWTHORN, MURILLO, President of Colombia, S. A., and the DYING GLADIATOR; Who shall be our next President? Portraits, Character, and Biographies, in the July Illustrated PHRENOLOGICAL JOURNAL. All newsdealers have it. Double No. 20 cents, or \$2 a-year. FOWLER & WELLS, 389 Broadway, New York.

WANTED.—ONE SECOND-HAND PLANE, TO PLANE about 5 or 6 feet in length. Address, with price—GEO. E. TAUPFER & CO., Tannersville, Monroe Co., Pa.

U. S. ORDINANCE AGENCY.

45 WORTH STREET, NEW YORK, June 23, 1864. PROPOSALS will be received, in duplicate, until Thursday, June 30th, 1864, at 4 o'clock, P. M., by this office for the supply of the following, viz:—

- 10,000 Carbine Slugs. 40,000 Halter Straps. 20,000 Stirrup Straps.

These supplies are to be made in all respects as to workmanship, dimensions, and mountings, in strict conformity with the standard samples which can be seen at this office. The leather is to be of good quality pure oak tanned. It is distinctly stipulated that this office is to have the privilege of examining the work done under any contract it may award, in all stages of its progress, at the shops of the contractors, especially to examine the stock before cutting.

They are to be delivered, free of charge to the United States at the New York Agency, 45 Worth street, and there inspected, and none are to be accepted or paid for but such as are approved upon inspection.

Bidders will state in their bids the time in which they propose to make deliveries, and each party obtaining a contract will be obliged to enter into bonds with approved sureties for its faithful execution.

Failure to make deliveries at a specified time will subject the contractor to a forfeiture of the number he may fail to deliver at that time.

No bids will be considered from parties other than regular manufacturers, and such as are known to this Department to be fully competent to execute in their own shops the work proposed for.

The Department reserves the right to reject any or all bids if not deemed satisfactory.

Proposals will be addressed, properly endorsed, to "Capt. S. Crispin, Ordnance U. S. Ord. Agency, No. 45 Worth street, New York."

HUMAN SKULLS.—ETHNOLOGY, A STUDY OF the Races. The Greek, Egyptian, Roman, and others compared. Indian Heads. The African Races, where they differ. Influence of Food on Moral and Physical Character of the Blood. Whisky Stomach, Body, Brain, Soul. With the Physiology of Life, in the Illustrated PHRENOLOGICAL JOURNAL, for July. Double No. 20 cents. New Vol. \$2 a-year. Newsmen have it. FOWLER & WELLS, No. 389 Broadway, New York.

FOUNDRY FOREMAN WANTED.—TO TAKE charge of a Machine Foundry in a Western city. Location healthy and pleasant. Situation permanent and salary liberal. Must be a practical moulder, of steady habits and good moral character, and would prefer one unconnected with the "Moulder Union." Address "Foundryman," care of BRIDGES & LANE, 50 Courtland street, New York.

INVENTORS AND MANUFACTURERS OF AGRICULTURAL implements will find it to their advantage to send descriptive lists, prices, and references, to Box 257, Lyons, N. Y.

WANTED.—THE ADDRESS OF EDWARD T. COVELL, of Brooklyn, Patentee of Paint Cans. Send address to H. EVERETT, Philadelphia.

HOW HE LIVED 120 YEARS. Life of an old man. How he ate and drank: Sleep, Marriage, Eyes, Teeth; How he Died. Address to Working Men. "Free Will," Temptations, Improvement. The English Language: Phonography; The Road to Knowledge. In July Double No. PHRENOLOGICAL JOURNAL, 20 cents by post; Newsmen have it. FOWLER & WELLS, 389 Broadway, New York.

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INDEPENDENT JAW CHUCKS.—L. D. FAY, Manufacturer of Machinists' Small Tools, No. 11 Cypress street, Worcester, Mass.

VENTRILOQUISM.—IS IT A GIFT, OR AN ART? Fortune Telling—how it is done. Popular Superstitions—effects on character, complexion, and temper, of being born in certain months, from January to December. Large, Dark, Voluptuous Eyes, has he been Struck? Is it You? An Aristocratic Cook. Money, Curiosities of Currency. How Coins are made. The Mint. In July Illustrated PHRENOLOGICAL JOURNAL, Double No. 20 cents, by first post, or \$2 a-year. Newsmen have it. FOWLER & WELLS, 389 Broadway, New York.

NERVOUS DISEASES AND PHYSICAL DEBILITY, arising from Specific causes in both sexes—new and reliable treatment, in Reports of the Howard Association—sent in sealed letter envelopes, free of charge. Address Dr. J. SKILLIN HOUGHTON, Howard Association, No. 2 South Ninth street, Philadelphia, Pa.

THE USEFUL METALS AND THEIR ALLOYS, including Mining Ventilation, Mining Jurisprudence and Metallurgical Chemistry employed in the conversion of Iron, Copper, Tin, Zinc, Antimony, and Lead Ores, with their applications to the Industrial Arts. By Scofield, Truran, Clay, Oxland, Fairbairn, Aitken, Pickett. 1 vol. 8vo., price \$5 50, in cloth. For sale by D. VAN NOSTRAND, 192 Broadway.

"INSTINCT AND REASON"—WHAT LEARNED men say. What says Phrenology? The Human Head, compared with the Gorilla. The one three stories high, with a sky light; the other, only a basement. Anecdotes of Religious Dogs and Horses; What constitutes the difference between man and animal; and "Instinct and Reason," given in the July Double No. PHRENOLOGICAL JOURNAL, 20 cents, by first post, or \$2 a-year. Newsmen have it. FOWLER & WELLS, 389 Broadway, New York.

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TO SHIP BUILDERS AND IRON-MAKERS.—FOR sale O. Collins's Patent Defensive Iron-clad Armor for vessels of war and fortifications. Liberal terms will be made to ship builders. Address OWEN COLLINS, 73 Mott street, New York City.

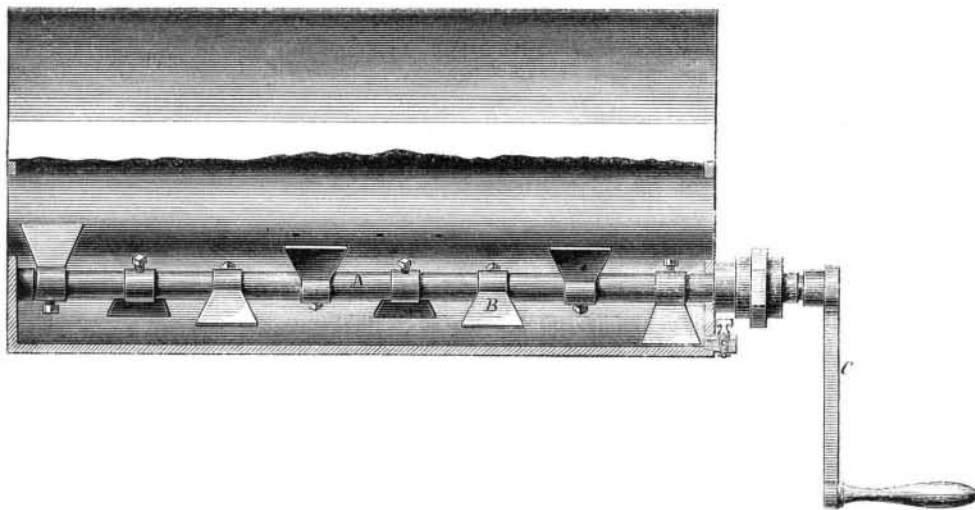
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"SIGNS OF CHARACTER"—PHYSIOGNOMY, illustrated with 14 figures, including men, women, and animals, resemblances in looks and in character. Local Physiognomy, by the Rev. G. W. Hosmer, D.D. Correspondence between the character of a country and of the people thereof. Given in the July Double No. ILLUSTRATED PHRENOLOGICAL JOURNAL, 20 cents, or \$2 a-year. New Vol. Subscribe now. Newsmen have it. FOWLER & WELLS, New York.

THE "KING MICROSCOPE"—DOUBLE LENS.—Prof. Horsford, of Harvard University, says:—"It works very well, and is got up very neatly." It magnifies 25 diameters. Price 75 cents. Also, "The Bowen Microscope" for 35 cents, or four for \$1. "The King" and "Bowen" Microscope for \$1. All mailed free of postage. Address F. D. BOWEN, Box 220, Boston, Mass.

Improved Boiler Scraper.

It is well known that sediment deposited in steam boilers is very injurious and tends to destroy the iron in a short time. The engraving published herewith represents a plan for removing the scale by mechanical means. The mechanism is very simple being merely a shaft, A, run through a cylinder boiler within a few inches of the bottom. This shaft has a series of scrapers, B, upon it which nearly touch the lower sheets. The action of this arrangement is obvious. When the crank, C, is turned, any sediment which may have formed is disturbed or loosened, and mixed with the water, so that it can be readily blown out by the discharge or blow-cock. The action of the scrapers also creates a current in the contents of the boiler, so that the formation of scale is retarded, if not prevented entirely. The shaft may be turned several

**COOPER'S BOILER SCRAPER.**

times a day if the water is very foul, and it is claimed that this arrangement is a very efficient one. It was patented on May 3, 1864, by Henry D. Cooper; for further information address him at 34 Eldridge street, New York city.

BI-MONTHLY REPORTS OF THE AGRICULTURAL DEPARTMENT.

The new department of our Government, the Department of Agriculture, is exhibiting commendable enterprise. In addition to, or in place of, the annual reports which were issued in volumes too large to be read by most farmers, and which were circulated by the slow-moving Government printing establishment a full year after they were prepared, Commissioner Newton had decided to issue his reports in the form of small pamphlets once in two months, and we hope that means may be taken to have them printed without any very disgraceful delay. The principal reasons for the change are thus stated by the Commissioner in his bi-monthly report for March and April, the first of the series:—

“Although the annual volume issued by this Department has been published to the number of 130,000, and 60,000 additional copies have been ordered, yet a half million of them would be insufficient to meet the demand for them. Whilst this demand attests the approbation it has received, yet objections have long existed to the volumes that have preceded it from the Patent Office, on the ground that many topics discussed in them should have been earlier considered, and the facts embodied in them made public at an earlier period. Among the most prominent of like topics was such a collection of agricultural statistics as would serve to show the amount of each crop as soon as it was matured or harvested, that the price for it should be placed on the just law of supply; for if a commodity is scarce from the shortness of the crop, he whose labor has not met with its usual reward in quantity, from the vicissitudes of the season, should receive the compensation which the increased price gives, and not he who stands between the producer and consumer. Again, a question like that of the proposed tax on leaf tobacco, suddenly presented for consideration and action; or, like that of the manufacture of sorghum sugar and molasses, which the Department had considered through its chemist, and those engaged in it

should learn the results in time for their operations; or, like that presented in this report, of the direction the raising of stock is taking; or, like that of agricultural education, which a recent donation by Congress has invested with unexpected interest, by demanding immediate action upon it—all such subjects, to be effectively acted upon, need to be discussed immediately, and without that delay consequent upon the publication of an annual volume only.”

Other reasons for the change are also given at considerable length.

The first number contains 86 pages—more than half being devoted to minute meteorological observations. It seems to us that this information is interesting to the mass of people only when it has been reduced to general laws, and we presume that experience and reflection will lead to its omission from the

future reports of the Commissioner. They can be filled with far more interesting and valuable matter.

THE SUBMARINE CABLES OF THE WORLD.

From an official communication of the Gutta-percha Company, London, to Cyrus W. Field, Esq., it appears that 52 lines of submarine cable have been laid by English firms in different parts of the world, all of which are in successful operation with the exception of that between France and Algiers, and it is supposed that that was injured by lightning. The longest line in operation is that between Malta and Alexandria, 1,535 miles. The deepest water in which any working cable rests is 1,550 fathoms—1½ miles—between Toulon and Corsica. The aggregate length of working lines given in the table is 5,105 miles, and this does not include a number of short lines laid in different parts of the world, nor those laid by Felten & Guilleaume, of Cologne, amounting to more than 1,000 miles. One line has been laid 13 years, five have been laid 11 years, four 10 years, and others shorter periods.

A Skillful Colored Mechanic.

Prof. A. W. Smith, of the Naval School, Newport, R. I., exhibited at our office, a few days ago, a very ingeniously-constructed miniature steam engine and boiler of about 6-hp power, we should judge, which was designed and constructed by Benjamin Boardley—once a slave in Maryland. Attracted by the mechanical genius and skill of Boardley, a few gentlemen clubbed together and purchased him of his owner and gave him his liberty. He soon found employment in the Naval Academy, and under Prof. Smith he now has the sole charge of the philosophical apparatus of the institution.

Joint-stock Companies in England.

Since the passage of an act by the British Parliament, permitting the formation of joint-stock companies with only a limited liability on the part of the stockholders for the debts of the company, a large number of manufacturers have transferred their establishments to joint-stock companies. We suppose the original proprietors generally take a considerable portion of the stock and continue to manage the concern; their object in making the change being to obtain the use of a larger amount of capital.

The Behring's Straits Telegraph.

Mr. Perry M. Collins is the projector of this great enterprise. The Russian Government is constructing a line across the continent of Asia to the mouth of the Amoor river, and from this point to the mouth of the Columbia is about 6,500 miles. It is this gap which the company of Mr. Collins proposes to fill. What they ask of Congress is the right of way across the public lands, the grant of a square mile of land at each station; the stations being 15 miles apart—and the payment of \$50,000 a year for the Government use of the telegraph.

CHEAP TELEGRAPHING.—A new telegraph company has commenced sending messages between Liverpool and Manchester, England, at 12 cents each, and it proposes to adopt this low charge for messages between any two places, without regard to distance, as its lines are extended. The telegraph companies having lines between our principal cities make enormous profits, and it only needs the efforts of some public-spirited capitalists to bring down the charges to a fraction of the present rates.

THE
Scientific American,

FOR 1864!

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The publishers of the SCIENTIFIC AMERICAN respectfully give notice that the Eleventh Volume (New Series) commences with this present number. This journal was established in 1845, and is undoubtedly the most widely circulated and influential publication of the kind in the world. In commencing the new volume the publishers desire to call special attention to its claims as

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The publishers of the SCIENTIFIC AMERICAN promise to present, as during preceding years, all the latest improvements in Steam Engineering, War Vessels, Ordnance—military and naval—Fire-arms, Mechanics' Tools, Manufacturing Machinery, Farm Implements, Wood-working Machinery, Water-wheels, Pumps and other Hydraulic Apparatus, Household Utensils, Electric, Chemical and Mathematical Instruments, Flying Machines and other Curious Inventions—besides all the varied articles designed to lighten the labor of mankind, not only in the shop and warehouse, but in every place where the industries of life are pursued.

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In this important department, so vitally connected with all the great interests of the country, no other journal can lay any claim whatever, as in its columns there is published a weekly Official List of the “Claims” or all patents granted at the U. S. Patent Office.

THE PRACTICAL RECIPES

alone are oft-times worth more to the subscriber than the amount of a whole year's subscription.

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