RE-ISSUES.

RE-ISSUES.
1,704.—Sewing Machine.—S. Pancoast (assignee of Geo. Fetter), Philadelphia, Pa. Patented Oct. 23, 1960:
I chaim, first, The hook or loop-catcher, N, formed substantially as described and illustrated, the said hook being arranged to revolve around or adjacent to aspool case, and being so situated in respect to the eye-pointed needle, and baving 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 being arranged, and operating on the thread which passes from the spool case, and 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 molte metal chils 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 here in described.
1,006.—Plow,—F. F. Smith (assigner to himself and

cribed. '06.—Plow.—F. F. Smith (assignor to himself and the Collins Company), Collinsville, Conn. Patented Nov. 20, 1860: claim a plow the plates of which are made of molten cast-steel, stantially as and for the purpose described. 1,706.

7.-Mode of attaching Door Knobs to Spindles.-Emery Parker, Meriden, Conn. Patented May 5, 1,707.

1863 : In combination with a screw-threaded knob, and the screw-threaded anguiar spindle, I claim the key or clamp piece, b, or its equivalent, itting 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 combina-tion with the spindle, escutcheon, knob, shank, and metal piece, b, when constructed and arranged substantially as and for the purpose described.

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 the metallic shank by a second hinged joint back of, and par-llel 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 strap, or other article to which it is to be attached.
I also claim the curved or bont frame having the immer face of the cross bar, b', sloping or beveled, or of equivalent forn, in combination with the griping tongue, substantially as described.
And I also claim grooving the graping end of the tongue, substantially as described.

DESIGNS.

34.—Lady's Hat.—Wm. E. George, Wentham, Mass. assignor to Joseph Cowell. 1,964

1,965.—Plate of a Cook's Stove.—Garrettson Smith & Henry Browne (assignors to J. G. Abbott and C. Noble), Philadelphia, Pa.



MUNN & COMPANY. In connection with he publication of the SCIENTIFICAMERICAN, have act-ed as Solicitors and Attorneys for procuring "Letters Patent " for

GRANTED

new inventions in the United States and in all foreign countries during e 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 patent taken in foreign countries are procured through the same source. It is almost needless to add that, after seventeen yewrs' experience in pre-paring specifications and drawings for the United States Patent Office, the proprietors of the SCIENTIFIC AMERICAN are perfectly con-versant 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 ast 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. J 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,

the office, a manage of the second se

J. HOLT. Hon. Wm. D. Bishop, late Member of Congress from Connecticut, succeeded Mr. Holt as Commissioner of Patents. Upon resigning the office be wrote to us as follows: Ms 9388. MUNN & Co. :---It gives me much pleasure to say that, dur-ing 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, W. D. Bisstop.

THE EXAMINATION OF INVENTIONS

Persons having conceived an idea which they think able, 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, corre nondin 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 in-ventors throughout the country, Messrs. MUNN & CO. would state t hat they have acted as agents for more than TWENTY THOUSAND

inventors! In fact, the publishers of this paper have become identified with the whole brother hood of inventors and patentees, at home and abroad. Thousands of inventors for whom they have taken out pat ents have addressed to them most flattering testimonials for the ser vices rendered them; and the wealth which has inured to the individ uals 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 ever 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 peting forth the prospects of obtaining a patent, &c. made up an nailed to the inventor, with a pamphlet, giving instructions fo 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 per sons. Many thousands of such examinations have been made throug 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 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 Governn fees, by express. The express charge should be pre-paid. S 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 regis-tered by the postmaster. Address MUNN & CO., No. 37 Park Row

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 :--

 n appleation for extension of ratent.
 on granting the extension.
 on filing a Disc laimer.
 on filing application for Design (three and a half years).
 on filing application for Design (seven years).
 on filing application for Design (fourteen years). The Patent Laws, enacted by Congress on the 2d of March, 1861, are ow in full force, and prove to be of great benefit to all parties who

arc 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, Englisa, Russian, Spanish and all other foreigners, except the Canadians, t: enjoy all the privileges of our patent system (except in cases of de signs) on the above terms. Foreigners cannot secure their in ventions 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 re-garding applications for patents and caveats is furnished gratis, ou application by mail. Address MUNN & CO., No. 37 Park Row New Vork

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 ref rences, models, drawings, documents, &c. Their successin the pros-cution of rejected cases has even 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 prose cuted, 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 prepara ion and securing of patents in the various European countries. For the transaction of this business they have offices at Nos. 66 Chancery lane, London; 28 Boulevard St. Martin, Paris; and 26 Rue des Eper onniers, Brussels. They thing they can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through their agency.

will do well to bear in mind that the English law does no Inventors limit the issue of patents to inventors. Any one can take out a pat ent there.

Greulars 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 the much interest 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 no 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 ince 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 alwayssettled upon in advance, after knowing the nature of the in-vention and being informed of the points on which an opinion is so licited. For further particulars address MUNN & CO., No. 37 Park Row New York.

EXTENSION OF PATENTS.

able patents are annually expiring which might readily Many valu be extended, and if extended, might prove the source of wealth to their fortunate possessors. Messrs. MUNN & CO. are persuaded that very many patents ar suffered to expire without any effort at exten-sion, owing to want of proper information on the part of the patent tees, their relatives or assigns, as to the law and the mode of proce dure in order to obtain a renewed grant. Some of the most valuable grants now existing are *extended patente*. 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 con ulting or writing to MUNN & CO., No. 37 Park Row, New York. ASSIGNMENTS OF PATENTS.

The assignment of patents, and agreements between patentees and the Patent of patents, and agreements of uver patentes and manufacturers, carefully prepared and placed upon the records at the Patent office. Address MUNN & CO., at the Scientific American atent Agency, No. 37 Park Row, New York.

It would require many columns to detail all the ways in which the nventor or Patentee may be served at our offices. We cordially in-Inventor or Patentee may be served at our offices. We cordially in-vite 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 inswered.

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



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 anyil, must be equal in extent to the size of the saw. Manu facturers of circular saws are provided with tools of this descrip tion

B. O., of N. Y.-Chloride of nitrogen is made by passing chlorine through salammoniac. Great caution is requisite to avoid eccidents.

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 feetlong. The gases evolved from burning fuelignite only at certain temperatures, and your smoke-box is so long that the gases aforesai get so cool that they pass out through the flues unconsumed. Shorten yoursmokebox one-half at least; and you may make it even less with benefit. Try it is feetlong 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 callber 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 proportiou 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 sup posed 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 reck urse, if a piston goes two feet oned 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 troke, making 100 turns in a minute, with 50 pounds pressure, is 3111 horses-power. The square of the diameter is $4 \ge 4 = 16$; which multiplied by 7854, gives 125664 as the piston area. This again multiplied by the steam-pressure, 50 pounds gives 628 3200, which, multiplied by the distance the piston travels per minute, 100 turns (or 200 feet), gives 125664.0000; this being divided by 33,000 pounds, a standard horse-power, gives 3'111 horses

power. We trust that is clear enough. J. & S., of N. Y.-B. is right. 100 cubic inches of atmospheric air weighs 31 grans, 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 C. H., of N. Y., \$25; J. V. C. C., of Conn., \$10; C. S., of N. Y., \$25; A. 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. N. 1, \$20; H. U., of N. 1, \$75; H. F. G., of Fa., \$40; W. S. K., of N.
\$1, \$25; D. C. W., of Mich., \$25; I. H. of N. H., \$16; J. B., of Mich., \$25; T.
S., ot 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., \$15; 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., \$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., \$10; H. C. M. Y. 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., & P. S., of Pa., \$16; T. S., of Pa., \$20; A. B. A., of Conn., \$28; 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., \$16; I. N. C., of Ohio, \$20; E. H. M., of N. Y., \$20; A. W. H., of N. Y., \$16; I. N. C., of Ohio, \$20; E. H. 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 III., \$16; S. M. B., of Mich., \$15; W. H. H., of III., \$16; H. B., of N. Y., \$16; D. F. W., of Maine, \$25; L. S. S., of Maine, \$26; R. R., of III., \$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 expres

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.; N. I., H. B. A., of Coll., VI. I., M. R. Y., H. M. S., of Penin, 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., ot 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. Gandar, D. T. W., & Banhe, D. D., H. Y., & D. H. R., & Gan, T. & J. C., of Mich.; W. L. M., of N. J. (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 pat entee and date of patent, when known, and enclosing \$1 as fee for copying. We can also furnish a sketch of any pater ed n ed 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 offic to stopsending 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

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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 pr served by a large class of its patrons, lawyers and others, for refo ence. 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 ooard sides covered with marble paper, and morocco backs and

Believing that the latter style of binding will better please a large on of our readers, we commenced on the expiration of 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, pay able 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 oublishers reserve to themselves the right to reject any advertise they may deem objectionable

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R IGHTS 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 a good reaper attachment Address WM. VAN ANDEN, Poughkeep-sie, 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 1, Paterson, N.J. 1*

⁶⁴THE SOUL."—IS IT IMMORTAL ?—THE SO entific Evidences; Conscious Nature of the Soul. Int structibility of Forces. Jaw of Adaptation, Essences. The Arg ment • priori and a posteriori, Our Aspirations. Are we Immort or Are we Not ? Have Animals a Future Existence ? The Seco Sight. A Remarkable Vision. Indian Magnetizers. The Shadow the Wa'l. In the July Double No. Illustrated PHENOLOGICAL JOU NAL 20 cents, by first post, or §2 a-yeur. Newsmen have it. Su scribe now. FOWLER & WELLS, No. 339 Broadway, New York. SC1-AL. 20 CO Sribe now 1 2

MECHANICAL AND OUT-DOOR PHOTOGRAPHY.-GEO. G. ROCKWOOD, Photographer, 839 Broadway, New York, will, during the Summer mouths, give his personal attention to Photographing Locomotives, Machinery of all ktinds, in shops if necessary, and to taking all ktinds of out and In-door views, in any part of the country. Refers to W. G. Hamilton, Jersey City Loco-motive Works; B. J. Burnett and C. Hoimes, of the Novelty Works; J. M. Toucey, Hudson River Railroad; and others. Plans copied to a scale. 24 4*

VOTICE. POWER OF ATTORNEY GIVEN BY US to Nelson Reisendorf (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.

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The Charlester States Dre Untergeichneten haben eine Anterung, die Erhneern tas verbas. en angiet, um fich ihre Patente ju fichern, herausgegeben, und verabfol-gen foche gratis an diefelben. Erfinder, welche nicht mit ber englifchen Evrache befannt find, tönnen fre Mithellungen in ber beutschen Evrache machen. Eigen von Er-indungen mit turgen, beutlich geschriebenen Beichreibungen beliebe mas u abbreister an

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Die Vatent-Bejete der Vereinigten Staaten.

ebit ben integen und ber Geichaftsorbnung ver Batene after und Unlei-ungen fur ben Erfinder, um fich Parente ju ficbern, in ben Ber. Sr. fo-sohl als in Eurova. Jerner Ausque aus ben Patent-Belgen frember anber und barauf deugliche brathfolichet, ebenfalls nuplich- Wint-für Baber und folge betrutter wochen. Freich 28 Ette., wer Bell 26 262.

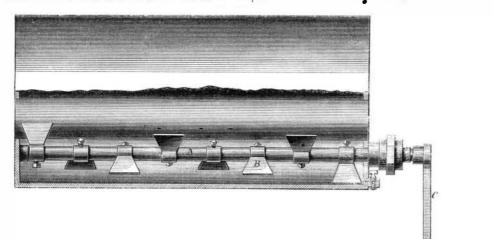
Improved Boiler Scraper,

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

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



COOPER'S BOILER SCRAPER.

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 tain the use of a larger amount of capital.

times a day if the water is very foul, and it is claimed | 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 vorking cable rests is 1,550 fathoms-14 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 Skillfnl 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-fly 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 ob-

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 apartand 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.



NEW SERIES.

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

A JOURNAL OF POPULAR SCIENCE.

In this respect it stands unrivaled. It not only finds its way to al-most every workshop in the country, as the earnest friend of the mechanic and artizan, but it is found in the counting-room of the manufacturer and the merchant; also in the library and the house-hold. The publishers feel warranted in saying that no other journa' now published contains an equal amount of useful information ; while it is their aim to present all subjects in the most popular and attract tive manner. The SCIENTIFIC AMERICAN is published once a week, in conve

next form for binding, and each number contains sixteen pages of useful reading matter, illustrated with

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of all the latest and best inventions of the day. This feature of the journal is worthy of special note. Every number contains from five to ten original engravings of mechanical inventions relating to every department of the arts. These engravings are executed by artists specially employed on the paper, and are universally acknowledged to be superior to anything of the kind produced in this country.

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