

RE-ISSUES.

1,861.—Cartridge Box.—Erastus Blakeslee, New Haven, Conn. Patented Dec. 20, 1864:  
I claim a cartridge box constructed in the manner described, to carry one or more movable tubes, each tube containing two or more cartridges, as and for the purpose specified.

1,862.—Supplemental Valves for Steam Engines.—Richard Colburn and L. W. Hanson, Norwich, Conn. Patented May 20, 1856:  
We claim as our invention the combination of an apparatus, substantially as described and for the purposes specified, with the cylinder and piston of a steam engine—such apparatus consisting of the passages, F, G, the valve boxes, E, E', the valves, K, K', their seat passages, h, h', and the lever, L, or its equivalent.

We also claim the said apparatus constructed substantially as described and for the purposes specified.

1,863.—Valve Gear.—Joseph F. Hamilton, Pittsburgh, Pa. Patented July 14, 1863:  
I claim the arrangement of the regulating coupling arms, b, lifters or propeller arms, j, k, springs, l, levers, m and n, and link, d, when used in connection with a governor, rock shaft or eccentric of steam engines, the whole being constructed and operating substantially as herein described and for the purpose set forth.

1,864.—Arrangement of Valves for Steam Engines.—Joseph F. Hamilton, Pittsburgh, Pa. Patented July 24, 1860:  
I claim the use of the valve, i, placed in one of the receiving ports of steam engines, as herein described, and for the purpose set forth.

1,855.—Carding Machines.—Lawrence O'Brien, Indianapolis, Ind. Patented Oct. 6, 1863:  
I claim the arrangement of the roll, D, between the main card cylinder, A, and the endless apron, C, substantially as and for the purpose set forth.

Also the construction of the endless apron, C, substantially as herein described, so as to carry the fibers on top of the slats, and dust and other foreign matters between them, the fibers being delivered to the roll, D, and the foreign matters discharged in passing over the upper roll, F, when the same is applied in the manner specified.

1,866.—Keyed Instrument of Music.—Francis Peabody, Salem, Mass.—Patented Nov. 10, 1863:  
I claim as my improvement in mechanism for operating the sound-producing parts of a musical instrument the above-described arrangement of dents, or their equivalents, on a rotary plate, G, viz. in concentric circles, and with the circle of treble and bass dents alternating with respect to one another, substantially as set forth.

And in combination with the said arrangement of dents on a rotary plate, I claim the arrangement of the bass and the treble-key levers, or the parts which produce or aid in producing the musical sounds, in two separate series or sets, whereby those of the bass notes are in one set and those of the treble notes are in the other set, substantially as specified.

And in combination with the keys of a keyed musical instrument, I claim a series of operative key levers and a rotary plate, provided with dents, arranged on its face, as specified.

I also claim the combination of the separate operating wheel, D, and its operative mechanism, substantially as described, with the plate, G, provided with dents, or their mechanical equivalents, arranged as explained.

I also claim the combination of the hinged or elevating frame, M, with the plate, G, and the series of operating levers, C, C', or their equivalents.

I also claim the improved speed regulator, composed of one or more adjustable wings, N, N', and their stationary surface or wing or wings, and mechanism for varying the position of the adjustable wing or wings relatively to one or more stationary wings, substantially as and for the purpose specified.

I also claim a combination, consisting of the rotary plate, G, with its arrangement of dents, the series of key levers, C, C', or their mechanical equivalents, and a mechanism for imparting a rotary motion to the plate, G, the said key levers being applied to the keys and to the dents, by means, and so as to operate therewith, substantially as specified.

1,867.—Paper Collars.—Wm. E. Lockwood, Philadelphia, Pa., assignee by mesne assignment of Walter Hunt. Ante-dated July 24, 1854:  
As a new manufacture, a shirt collar, in which paper is used to imitate starched linen, and which is made of the desired shape by dies or forms applied under pressure.

DESIGNS.

2,028.—Military Belt Hook.—Erastus Blakeslee, New Haven, Conn.

2,029.—Badge or Breastpin.—Michael F. Ryan, New York City.

2,030.—Trade Mark.—Stephen S. Winchester (assignor to E. A. & W. Winchester), Boston, Mass.

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.

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 opinion 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.

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 or 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 thing 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.

HOW TO MAKE AN APPLICATION FOR A PATENT.

Every applicant for a patent must furnish a model of his invention if susceptible of one; or, if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the Government fees, by express. The express charge should be prepaid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by 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.....	\$40
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

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.

EXTENSION OF PATENTS.

Many valuable patents are annually expiring which might really 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.

UNCLAIMED MODELS.

Parties sending models to this office on which they decide not to apply for Letters Patent and which they wish preserved, will please to order them returned as early as possible. We cannot engage to retain models more than one year after their receipt, owing to their vast accumulation, and our lack of storage room. Parties, therefore, who wish to preserve their models should order them returned within one year after sending them to us, to insure their obtaining them. In case an application has been made for a patent the model is in deposit at the Patent office, and cannot be withdrawn.

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



**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 last 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 employees.  
Yours very truly  
CLAS. 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,



S. J. A., of Vt.—No power is actually gained by either the lever, inclined plane, screw or wedge; what is gained in power is lost in time. This applies to them all equally.

O. M., of Ind.—You have doubtless seen that the true inventor of the Ruhmkorff coil has already been named in our paper.

D. B., of Wis.—The "natural lime" in soil is carbonate of lime, and this would not injure guano. Sulphuric acid, if mixed with guano, would combine with the ammonia to form sulphate of ammonia, and then this would be slowly decomposed during the growth of the plants, yielding the ammonia as it was wanted. Sulphuric acid is destructive to both animal and vegetable compounds, and would require diluting with many times its weight of water to be harmless to vegetation. It is not a fertilizer.

C. T., of Mass.—We know of no method by which you can mix kelp oil with water.

J. W. P., of Me.—A sand bath for bluing steel is simply white beach sand, such as is used for scrubbing floors. Place it in an iron pan, over the fire, and heat it hot. The steel must be polished bright, and laid on the sand, when it will gradually acquire a bluish tint. At the right shade take it off and plunge it immediately in cold water. Anything that diffuses the heat evenly will do as well as sand; this material is only used for that purpose.

J. M., of N. Y.—Ede, on steel working, is the book you want. Address D. Appleton & Co., New York City, or go there for it.

G. F., of Mass.—The sample of paper you send is made of cotton.

M. S., of N. Y.—You should use a rotary horse-power, not a treadmill. You will require two horses instead of one.

J. L. H., of Bay City.—You can line up your propeller shaft by taking out the piston and stretching a line through the center of the cylinder, past the crank pin. Turn the crank on each center alternately. If the center of the crank-pin journal coincides with the center of the cylinder the shaft is right. If either end is out, the extreme end of the shaft must be moved to correct it. We cannot give you the information you ask in the space at our disposal.

J. P. S., of Pa.—We do not know the makers of the steam callope. It was advertised in the SCIENTIFIC AMERICAN many years ago.

H. C. P., of Ill.—The wooden blacking boxes are made by Horace Thayer, No. 36 Beekman street, New York.

C. E. T., of N. Y.—Mercury in expanding will move a piston with a force practically irresistible. All chemical action depends very much upon temperature.

J. G. R., of Nebraska.—You will find tables of the comparative heating powers of various woods in back numbers of the SCIENTIFIC AMERICAN. They have been published many times. H. C. Baird, No. 406 Walnut street, Philadelphia, will furnish you with a work on grinding grain.

Americus.—Machinery for extracting oil from the Palmaria nut can be had of J. H. Woodgate, No. 182 Greenwich street, New York.

G. W. H., of U. S. N.—We do not know the precise date of the burning of the Knorrville. It was about four or six years ago. She had an oscillating engine, built at the Novelty Iron Works.

W. P. B., of Wis.—You could readily make your candle tips as you propose. Whether a patent would pay is for you to determine. Your loss certainly could not be great.

H. D., of Ohio.—We do not believe that there is anything poisonous in the corn cob.

J. M., of Pa.—We do not understand what you mean by removing the coloring property of white lead. It has the power of coloring only white, and this can be destroyed by decomposing the salt.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, February 1, to Wednesday, February 8, 1865:—

E. S. M., of N. Y., \$12; I. B., of N. Y., \$25; O. E. M., of N. Y., \$25; J. F. W., of N. Y., \$25; J. N. S., of N. Y., \$22; W. V. McK., of N. Y., \$25; Van H. & A., of N. Y., \$25; J. M. C., of N. Y., \$25; F. & B., of N. Y., \$25; R. S., of N. Y., \$40; S. E. S., of N. Y., \$40; C. H. S., of Me., \$45; J. N., of Mass., \$20; S. & B., of Ill., \$20; J. W. B., of N. Y., \$22; A. T., of N. Y., \$15; J. W. S., of Mass., \$20; G. J. B., of Iowa, \$45; D. K., of Pa., \$45; T. G. O., of N. Y., \$20; A. S., of Mo., \$40; J. S. G., of Pa., \$40; B. O., of N. Y., \$15; L. R., of Pa., \$41; G. W. B., of N. Y., \$15; W. W., of N. J., \$20; D. & Z., of Ill., \$20; P. J. G., of N. Y., \$20; H. A., of Pa., \$20; E. M. M., of Mass., \$40; J. F., of Mich., \$45; A. & B., of N. Y., \$20; C. S., of Germany, \$20; W. G. W. J., of Md., \$110; L. A., of Conn., \$75; M. K., of N. Y., \$15; C. Van H., of N. Y., \$10; F. N., of N. Y., \$45; D. A. D., of N. Y., \$10; E. C., of Me., \$20; V. P., of Mass., \$20; W. H. L., of N. Y., \$15; A. K., of N. Y., \$15; J. P. H., of N. Y., \$15; E. A. P., of Pa., \$25; J. R. E., of U. S. N., \$20; J. C., of N. Y., \$15; E. H. C., of N. Y., \$20; W. B. P., of Pa., \$20; J. G., of England, \$45; N. E. B., of N. Y., \$15; W. H. P., of N. Y., \$15; J. W. C., of N. Y., \$15; C. B., of N. Y., \$40; M. P., of N. H., \$20; J. & N. W. R., of Mass., \$20; J. D. H., of Pa., \$10; F. R., of Mich., \$16; G. W. B., of Conn., \$25; W. B. W., of Mass., \$15; F. B., of Iowa, \$20; C. A. L., of Pa., \$15; J. G. L., of Ill., \$36; L. H. L., of N. Y., \$25; W. R., of Ill., \$15; J. L. & S. L. O., of Mass., \$30; T. K. A., of Ill., \$20; J. S., of Conn., \$15; E. P. A., of Conn., \$15; S. & P., of Ill., \$30; H. E. S., of Wis., \$15; C. F. H., of Pa., \$16; G. M., Jr., of Ill., \$16; D. & H., of Ind., \$15; A. H. P., of Kansas, \$35; N. G., of Wis., \$25; J. B. H., of N. Y., \$50; J. R., of Mich., \$100; M. J., of Pa., \$25; H. & N., of Mo., \$16; P. & Y., of Ill., \$25; A. L. D., of Mass., \$16; J. T., of Pa., \$15; P. J. C., of Conn., \$41; A. W., of Me., \$30; S. C., of N. Y., \$15; C. B. G., of Iowa, \$41; L. M. G., of N. Y., \$15; H. A. F., of Mich., \$16; G. A., of Mich., \$100; W. H. D., of Ind., \$15; E. J. T., of Iowa, \$15; H. K., of Iowa, \$15; P. B., of N. Y., \$25; M. B. W., of Ky., \$25; L. E. S. S., of Mass., \$75; R. F., of Ill., \$16; J. P. B., of Me., \$25; B. & B., of Mich., \$16; H. H. of Iowa, \$25; W. & H., of Ill., \$25; M. & H., of Ill., \$12; N. F. G., of Conn., \$15; R. McD., of Ill., \$35; A. W. L., of Ohio, \$20; J. H., of Va., \$16; M. B., of Conn., \$25; J. L. G., of Mass., \$25; W. K., of Ill., \$15; H. P. A., of Ohio, \$25; S. & P., of Mass., \$16; W. & C. of N. J., \$15; J. R. C., of N. Y., \$15; P. S. C., of N. Y., \$6; H. W. B., of N. Y., \$16; E. F., of Pa., \$16.

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, Feb. 1, to Wednesday, Feb. 8, 1865:—

E. S. M., of N. Y.; J. B., of N. Y.; E. E. M., of N. Y.; J. F. W., of N. Y.; H. B., of N. Y.; W. E. R., of N. Y.; W. V. McK., of N. Y.; Van H. & A., of N. Y.; J. M. C., of N. Y.; F. & B., of N. Y.; J. E. M., of Ohio; R. S., of N. Y.; L. E. P., of N. Y.; J. W. B., of N. Y.; A. S., of Mo.; J. S. G., of Pa.; L. R., of Pa.; E. M. M., of Mass.; W. G. W., Jr., of Md.; L. A., of Conn.; 2 cases; C. B., of N. Y.; C. B. G., of Iowa; L. N. S., of N. Y.; N. G., of Wis.; P. & Y., of Ill.; M. J., of Pa.; J. K., of Conn.; 2 cases; L. H. L., of N. Y.; F. B., of Iowa; H. H., of Iowa; W. & H., of Ill.; A. W., of Me.; J. R., of Mich.; H. K., of Iowa; M. R. W., of Ky.; L. E. S. S., of Mass.; 3 cases; R. H. & J., of R. I.; T. M., of Ill.; J. P. B., of Me.; J. L. G., of Mass.; C. B. G., of Iowa; E. B. L., of Conn.; P. B., of N. Y.; G. W. B., of Conn.; C. B. R., of Conn.; 2 cases; D. H., of N. Y.; M. B., of Conn.; H. P. A., of Ohio; H. L. B., of Pa.; L. S., of Pa.; H. R. A., of Ill.; J. L. & S. L. N., of Conn.

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.

**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* acknowledgment of our receipt on of their funds.

**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.

Back numbers and Volumes of the "Scientific American."

**VOLUME IV., AND VOLUME XI. (NEW SERIES)** complete (bound) may be had at this office and from periodical dealers. Price, bound, \$3 00 per volume, by mail, \$3 75 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. I., II., III., V., VI., VII., VIII., IX., and X., are out of print and cannot be supplied.

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 eight 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.

BURGH'S PRACTICAL RULES FOR PROPORTION OF LAND AND MARINE ENGINES AND BOILERS.—NOW READY.

**PRACTICAL RULES FOR THE PROPORTION OF MODERN ENGINES AND BOILERS FOR LAND AND MARINE PURPOSES.** By N. P. BURGH, Engineer.

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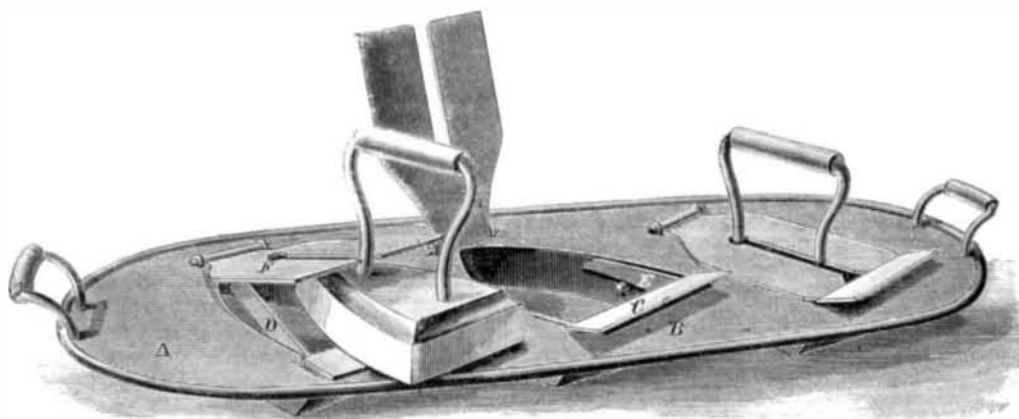
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Zur Beachtung für deutsche Erfinder. Die Unterschieden haben eine Anleitung, die Erfindern das Verhalten angibt, um sich ihre Patente zu sichern, herauszugeben, und veröffentlichen solche gratis an beifolgend. Erfinder, welche nicht mit der englischen Sprache bekannt sind, können ihre Mitteilungen in der deutschen Sprache machen. Stützen von Erfindungen mit kurzen, deutlich gefassten Beschreibungen bedient man zu adressieren an Munn & Co., 37 Park Row, New-York. Auf der Office wird deutsch gesprochen. Tafel ist zu haben: Die Patent-Gesetze der Vereinigten Staaten, nebst den Regeln und der Geschäftsordnung der Patent-Office und Vorkenntnisse für den Erfinder, um sich Patente zu sichern, in den Vereinigten Staaten sowie in Europa. Ferner Auszüge aus den Patent-Gesetzen fremder Länder und darauf bezügliche Rathschläge; ebenfalls nützliche Winke für Erfinder und solche, welche patentieren wollen. Preis 20 Cts., per Post 25 Cts.

**Improved Sadiron Heater.**

This simple utensil is intended to facilitate heating sadirons and economize coal, both of which are perfectly attained by it. Heating irons on the stove or range is a very expensive practice, for a great fire has to be kept up, and a large proportion of the heat is radiated. In summer time this is particularly objectionable, for the fuel is not only wasted but the apartment is rendered exceedingly uncomfortable. The heater shown herewith is a capital thing for the purpose and should be found in every family. The heater sits in the stove, as usual, and has recesses or pockets, A, in which the irons are placed. These recesses are covered so that the iron is really in a pocket, exposed to the heat, but protected from



**BLEYER'S SADIRON HEATER.**

the air. The handles are also kept cool, or at least at a much lower temperature than when this heater is not used. The pockets can be removed separately when burned out, provision being made for that object.

By looking on the engraving at B, a metallic plate, C, will be observed. When the iron is to be entered, this plate tips up, as shown at D; the iron being set on it throws the back arms, E, up, as shown in the figure of the iron, thus raising the cover, F, and allowing the iron to be put in place. By merely setting the iron on the plate, C, therefore, the cover opens and the iron may be put in the recess without using any instrument or lifter to raise the covers. This ingenious device cannot get out of order, and is so simple that the most stupid servant cannot misunderstand it. It was patented through the Scientific American Patent Agency, on the 18th of Oct., 1864, by Henry W. Bleyer; for further information address him at 380 Michigan street, Buffalo, N. Y.

**Meteoric Rain.**

The Paris correspondent of the *Chemical News* states that a curious experiment has been made by Dr. Reichenbach, of Vienna. He believes in the existence of a cosmical powder or dust which exists all through space, and which sometimes becomes agglomerated so as to form large and small meteorites, while, at other times, it reaches the surface of our earth in the form of impalpable powder. We know that meteorites are mainly composed of nickel, cobalt, iron, phosphorus, etc. Dr. Reichenbach went to the top of a mountain which had never been touched by spade or pickax, and collected there some dust, which he analyzed, and found it to contain nickel, and cobalt, and phosphorus, and magnesia. People have wondered where the minute quantity of phosphorus so generally distributed on the surface of the earth came from. The doctor, however, has discovered it in this mysterious invisible rain, which henceforth must be looked upon as quite as necessary for vegetation as the water which falls from the clouds.

**Still Thinner Iron.**

The *Birmingham Daily Post* says: "The 'thinnest sheet of iron yet rolled in the world,' has elicited numerous competitors in this country, and has at last been signally beaten. The sheet in question was the 1,000th part of an inch in thickness. The other day we mentioned that iron had been rolled at Cardiff considerably thinner, and since then some iron still thinner, rolled by Messrs. James, of Bilston, has been shown to us by Mr. Brinton, of Great Charles-street, in this

town. Yesterday two other samples came to hand. One of them, rolled from common iron in the ordinary sheet mills, by Messrs. Robert Williams and Co, of Swan Village, Westbromwich, is 1,015th part of an inch thick, is very tough, and has a very good even surface. The other specimen, which at present bears away the palm, consists of two sheets, measuring 8 in. by 5½ in., weighing respectively 49 and 49½ grains, and being the 1,400th part of an inch in thickness! These marvellous examples of iron rolling were produced by Messrs. Nevill, Everitt, and Co., of the Marshfield Ironworks, Llanelly. The Messrs. Everitt, of Kingston Works, in this town, are partners in this firm; and therefore, a Birmingham house may finally claim the credit at first taken by our ironworker at Pittsburg,

tion with great facility. The upper part of the shank has a recess, F, in it which carries a spring, G; this spring is larger than the tube and collapses or closes when the shank is pushed on to its place, thus while the shank can revolve in the tube it will not slip out when the article to which it is secured is lifted off the floor. There is in addition a loose collar, H, which steadies the lower portion of the shank and renders it at all times easy working. The caster proper may be pulled out of its socket and oiled, if necessary, in a moment, and reinserted when necessary. In other respects this is a strong and well made caster, and one likely to give good satisfaction. A patent was procured on it through the Scientific American Patent Agency, on the 25th of November, 1864, by J. M. Riley, of Newark, N. J. For further information address Riley & Smith, No. 30 North Broad street, Newark, N. J.

THE graceful and self-teaching system of Babbittonian Penmanship, which we commended in this journal two weeks ago, is now published by Babbitt & Wilt, at No. 37 Park Row, New York. Terms (post paid) \$1.50.

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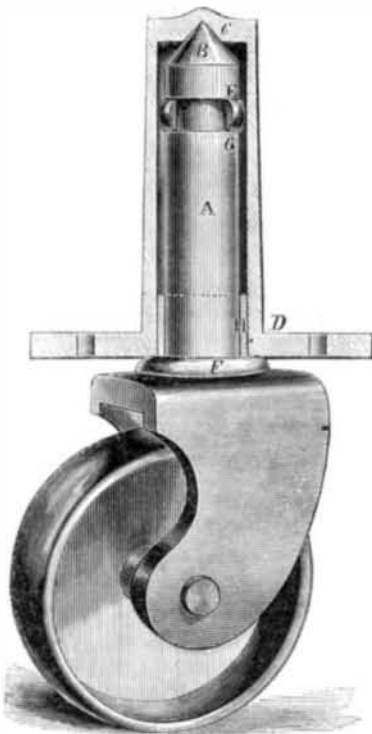
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FROM THE STEAM PRESS OF JOHN A. GRAY & GREEN,

the Birmingham of the United States. It should be added that one of the specimens sent us by Messrs. Nevill and Everitt, is beautifully finished; the other is left just as it came from the rolls, not having been annealed."

**RILEY'S CASTER.**

The object of this invention is to procure a strong, durable and easy-working caster for pianos, chairs, tables, and other furniture. It resists any lateral strain to which it may be subjected in moving the furniture, and at the same time conforms easily to the direction in which the table or chair is to be moved.



The engraving published herewith is a section of the tube and an elevation of the roller; the section shows the details of the improved portion. The shank, A, of the caster has a pointed end, B, which fits in a center, C, in the tube or socket, D. This center sustains the weight of the piece of furniture, and the collar, E, below, has little or no friction upon it, thus allowing the roller to conform to any direc-