

the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park Row New York.

It would require many columns to detail all the ways in which inventors or patentees may be served at our offices. We cordially invite all who have anything to do with Patent property or inventions to call at our extensive offices, No. 37 Park Row, New York, where any questions regarding the rights of patentees will be cheerfully answered.

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

REJECTED APPLICATIONS.

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

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

FOREIGN PATENTS.

We are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through the Scientific American Patent Agency, No. 37 Park Row, New York.

Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Any one can take out a patent there.

Circulars of information concerning the proper course to be pursued in obtaining patents in foreign countries through our Agency, the requirements of different Government Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park Row, New York, or any of our branch offices.



T. R. V., of Conn.—The use of bismuth in an alloy is to make it melt at a very low temperature.

"Old Subscriber."—You are right in one of your surmises about lightning rods. Paint is a non-conductor, but does not detract from the value of the rod as a protection. All non-conductors of electricity are insulators and confine the fluid in its passage to the earth to the rod itself. The lightning will not leave the rod and enter the building. The rod is painted to preserve it from oxidizing. Rust is a non-conductor also, but it wastes the iron, and is, therefore undesirable. If the conductor is of sufficient size and as direct as possible in its passage your building is safe enough. The paint will not injure it.

F. R., of Mass.—Your letter must have been mislaid, as we have not received it. We are obliged to you for your gratuitous advice as to the best manner of conducting our business. Gutta-percha cement is made by dissolving that substance in turpentine or naphtha. We cannot inform you how pipe stems are made from it.

J. F., of N. Y.—You had better call at our office and show us a sample of your proposed method of using rubber for protecting walls of rooms. We cannot understand its peculiarity from the statement you have made respecting it.

B. W. K., of Wis.—The hollow wrought-iron cylinders, 6 feet long, 36 inches bore, with sides 8 inches thick, can be made at our iron-works. They can also be fitted with threads internally of any desired pitch, but unless you have a gold mine in your own right, you had better defer the construction of one at present, as it would involve the production of special machinery to make such a cylinder, at a vast outlay. We are obliged for your compliments respecting the SCIENTIFIC AMERICAN.

W. S. D., of Pa.—There is no sense in your question as you state it. "If the piston of a steam engine of 60 horse-power, traveling at the rate of 3 feet per second, with a weight of two tons attached to the piston, what would be the weight of the blow it would strike?" As you left out all the essential points—the distance passed over before the blow is struck, whether vertical or horizontal and the pressure of steam—"60 horse-power" conveys no meaning whatever.

J. W. P., of Maine.—Address Reynolds, Pratt & Devoe, 106 Fulton street, New York, for the kind of varnish you require for tool handles.

J. D., Jr., of Del.—Blanchard's eccentric lathe for turning irregular forms is capable of turning an ox-yoke from a pattern, but we cannot refer you to any one who manufactures them for sale.

A. M., of Ohio.—The packages of earth which you have sent us appears to be mostly silicious sand mixed with a little lime colored with iron. It is impossible to tell you its exact composition without analyzing it.

J. G. P., of Pa.—You state that the spindle of your 3-foot saw becomes heated, and that you have not been able to remedy the evil by any lubricant which you have tried. Perhaps it is a little out of line, but as you run it at the rate of 850 revolutions per minute, this great speed may be the cause. A high circumferential velocity in a saw generates a great amount of friction in the journal-boxes.

N. C. D., of D. C.—We are obliged for your continued attention to us. We receive many suggestions every week from disinterested persons which we are unable to give attention to. You and others interested are referred to Bernoulli's essay on the

spinning of tops, for all phenomena connected with the matter. The subject is quite ancient, as the book referred to is itself at least a century and a half old. In Dr. Thompson's "History of Science" you will doubtless find a condensation of the subject.

J. M. Jr., of Ill.—We think there is no air in the feed water of marine engines which use surface condensers. You state that no locomotive has ever exploded while running. This is not so—several have exploded. In February, 1849, the boiler of a locomotive exploded on the Boston and Providence Railroad, while running with its train; and two explosions of locomotive boilers have occurred on the New York Central Railroad under similar circumstances.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, April 22, to Wednesday, April 29, 1863.—

- W. L. F., of N. J., \$31; T. J. P., of Ill., \$50; W. J. S., of N. J., \$45; J. C., of Mich., \$20; J. P., of N. Y., \$16; B. W. S., of Mass., \$20; P. M. R., of Cal., \$12; J. W. G., of Mass., \$22; R. P. P., of N. Y., \$41; W. F., of Mo., \$15; R. T. H., of Ill., \$25; C. M. J., of Ill., \$15; McD. & R., of N. Y., \$16; J. D., of Ill., \$10; L. & H., of Pa., \$25; D. C. W., of Ill., \$26; J. H., of Iowa, \$25; S. R. J., of Conn., \$15; W. J., of N. H., \$15; G. T. L., of Pa., \$20; N. S., of Mich., \$20; N. & D., of N. Y., \$16; W. C. O., of N. Y., \$20; T. S. D., of N. J., \$15; H. & B., of Conn., \$20; E. D., of Mich., \$45; C. F. H., of N. Y., \$10; T. B. V., of N. Y., \$20; J. C., of U. S. A., \$16; J. M., of Mass., \$25; W. P., of Minn., \$30; C. H. M., of N. Y., \$450; J. D., of N. J., \$33; L. D. G., of N. Y., \$16; W. D., of Ohio, \$25; J. V. D., of N. J., \$20; E. H. J., of Ill., \$15; A. C. T., of N. Y., \$16; H. B. M., of N. Y., \$25; G. E. S., of Iowa, \$25; F. A. De M., of N. Y., \$16; M. H., of N. T., \$15; S. & P., of N. Y., \$20; A. A., of N. Y., \$16; A. B., of N. Y., \$40; F. R. B., of Ill., \$20; B. T., of Mass., \$25; J. H. H., of N. Y., \$32; L. B., of N. Y., \$15; F. M. R., of Pa., \$30; J. S., of Mich., \$25; S. L. F., of Mich., \$31; J. C. W., of N. Y., \$15; S. F. G., of N. Y., \$16; A. M. B., of Mich., \$26; J. B. E., & Co., of Iowa, \$25; J. A. A., of Conn., \$16; S. S., of Pa., \$26; A. J. H., of Pa., \$15; C. C., of Cal., \$15; A. H., of Ohio, \$15; J. E. D., of Mass., \$26; T. W., of Ill., \$30; B. & B., of N. Y., \$56; J. H., of Ill., \$20; H. & D., of N. Y., \$20; E. F. C., of Kansas, \$16; J. S. K., of Ill., \$30; P. L., of Cal., \$15; A. & F., of Wis., \$16; J. C., of Mass., \$25; N. D. L., of Ill., \$30; D. C. G., of Pa., \$20; W. G. P., of Del., \$23; L. B., of N. Y., \$25; W. S. of Pa., \$31; B. & B., of Mo., \$15; T. S., of Ill., \$15; W. W., of N. H., \$15; L. & B., of Ohio, \$16; J. N. P., of N. Y., \$16; E. K. B., of Conn., \$20; H. W., of N. J., \$41; E. M., of N. Y., \$20; S. D. B., of Pa., \$30

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

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Wednesday, April 22, to Wednesday, April 29, 1863.—

- W. L. F., of N. J.; C. M. J., of Ill.; R. S. H., of Ill.; J. W. P., of Mich.; D. C. W., of Ill.; M. H., of N. T.; J. M., of Mass.; S. L., of Mass.; A. M. B., of Mich.; W. D., of Ohio; Y. & T., of N. Y.; J. D., of N. J.; J. S., of Mich.; L. & H., of Pa.; J. V. D., of N. J.; H. W., of N. J.; W. G. P., of Del.; N. D. L., of Ill.; J. B. E., & Co., of Iowa; S. S., of Pa.; H. D. L., of Mass.; B. & B., of N. Y.; J. C., of Mass.; R. H., of N. Y.; C. F. T., of N. Y.; L. B., of N. Y.; T. W., of Ill.; J. H., of Iowa; J. E. D., of Mass.

TO OUR READERS.

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

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.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known and inclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1863, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York

NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of Instructions to Inventors, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application at this office. Address MUNN & CO., No. 37 Park-row, New York.

Back Numbers and Volumes of the Scientific American VOLUMES I., II., III., IV., V. AND VII. (NEW SERIES) complete (bound or unbound) may be had at this office and from periodical dealers. Price, bound, \$225 per volume, by mail, \$3— which include postage. Price, in sheets, \$1 50. 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. Nearly all the numbers of VOL. VI. 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 compute the amount they must send in when they wish advertisements inserted, 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.

MECHANICS WANTED.—GUN-MAKERS, MACHINISTS, Tool-smiths and Moulders may find constant employment, by applying to or addressing A. RHULMAN, Armorer, Trenton Arms Co., Trenton, N. J.

READER, IF YOU WANT EMPLOYMENT, OR WANT the best (two-threaded) Sewing Machine ever manufactured, send to ISAAC HALE, JR., & CO., Newburyport, Mass., for a descriptive circular of terms, &c. They pay a liberal salary, or allow commission, as the agent may choose. 19 4*

WANTED—A PARTNER, WITH A SMALL CAPITAL, to assist in manufacturing a new patent article of Printers' Ink Roller. For further particulars address the patentee (with stamp enclosed), G. LITTLETON, Cleveland, Ohio. Rights for sale. 1*

JACQUARD MACHINES, WITH APPURTENANCES manufactured and put up. Looms for narrow goods, from silk ribbon in cotton tape, built to order on the most approved principles. Wm. LITTLETON, No. 1, 621 North Second street, Philadelphia, Pa. 19 4*

MANUFACTURERS OF THE SPRINGFIELD MUSKET (1855) can obtain a few thousand each of Bands, Rear Leaf Sights and Side Screw Washers. Warranted to pass Government inspection. Apply to W. T. NICHOLSON & CO., Providence, R. I. 19 4*

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THE CELEBRATED CRAIG MICROSCOPE WILL BE mailed, prepaid, for \$2 25; with 6 beautiful mounted objects for \$3; with 24 objects for \$5, by HENRY CRAIG, 180 Center street (3d floor), New York. Liberal discount to dealers. The Craig Microscopes are just what they claim to be, and those who wish for such an article will not be disappointed if they should obtain one of these.—N. Y. Methodist. 19 13*

BUREAU OF ORDNANCE.

NAVY DEPARTMENT. } Washington City, April 1, 1863. } This Bureau is desirous of ascertaining whether rifled cannon can be made of wrought iron of sufficient and uniform endurance and economy to warrant their being preferred to guns of cast iron only, or of cast iron strengthened with wrought iron. Proposals will therefore be received from any manufacturers of forged iron, to furnish a finished gun, or a block of metal from which the same may be finished. The said gun, when finished, to weigh about 10,000 pounds, to be made into a gun throwing a projectile of 100 pounds, as used in cast iron rifled cannon of the weight, to be fired 1,000 times with service charges of the same weight and kind of powder as used in the Parrott 100-pounder, viz: 10 pounds of No. 7, without bursting or wearing in such a manner as to cause apprehensions of bursting. The quality of metal, price, and other terms, are to be stated clearly in the proposals forwarded. The Bureau reserves the right to itself of accepting or rejecting any of the proposals. The time for receiving the proposals is limited to sixty days from date; and proposals will only be received from persons actually engaged in the fabrication of wrought iron. JOHN A. DAHLGREN, Chief of Bureau. 15 8

PROPOSALS FOR RIFLE CANNON.

ORDNANCE OFFICE, WAR DEPARTMENT. } Washington, April 16, 1863. } PROPOSALS will be received at this office until 4 o'clock P. M., on the 2d day of MAY next, for the manufacture and delivery of thirty CAST-IRON SIEGE RIFLE CANNON of the caliber of four and a half inches, to be made in strict conformity to the drawing which will be furnished, and which may be seen at any United States Arsenal. They are to be cast hollow and cooled from the interior. They are to be subject to the regular United States inspection and proof, and none are to be received or paid for, but such as are accepted by the Inspector, whose decision as to the reception or rejection of any of them is to be final and conclusive. Bidders will state the time they propose to deliver the first cannon, and the number they will deliver, weekly, thereafter. They will also state where they propose to manufacture them, and the price, per pound, for the finished cannon, delivered at the place of shipment nearest to the foundry where cast. No bid will be entertained except from regular founders, evidence of which, and of their ability to fulfill a contract, if awarded to them, must accompany the bids, unless the bidder is known to this office. Any bidder obtaining a contract will be required to enter into bonds with no less than two sureties, in the penal sum of \$5,000 for the faithful fulfillment of his contract in all respects. The right is reserved to reject any or all bids if the prices are deemed too high, or for any cause, it is not thought for the public interest to accept them. Proposals will be sealed and addressed to "Brig-Gen. J. W. Ripley, Chief of Ordnance, Washington, D. C.," and will be indorsed "Proposals for 4 1/2-inch Rifle Cannon." JAMES W. RIPLEY, Brig-Gen. and Chief of Ordnance. 18 2

PAYE'S PATENT FORGE HAMMER.

This hammer is adapted to both heavy and light forgings; is the force of the blow being entirely at the will of the operator, and for all forgings under six inches, both round or square, is the best hammer now in use, and requires but one-half the power used by every other hammer to do the same work. For an engraving and description of this hammer see page 17, Vol. V. (new series) of the SCIENTIFIC AMERICAN; some valuable improvements have, however, been since made. All communications should be addressed to H. M. AMES, Box 422, New York, or Ames Iron Works, Oswego, N. Y. These hammers may be seen in operation at the Allaire, Neptune, Secor, Delamater, Fletcher & Harrison, Duncan & Crampton, Anderson & McLaren, Dohurst & Emerson, Charles T. Porter, Hudson River Road Car Shop, all in New York city; Joseph Colwell, Jersey City; Wm. White, Newark, N. J.; Providence (R. I.) Tool Co.; Whiting & Wicux, Kaighn's Point, Phila.; Malory & Cottrell, Mystic, Conn.; J. Dillhoe, Rondout; James H. Orner & Co., Sing Sing; Henry Esler & Co., Brooklyn; James B. Eads, St. Louis, Mo.; Franklin Iron Works, Central Railroad Shop, Albany; Burlington, Quincy & Chicago Railroad Shop, Ames Iron Works, Oswego; C. P. & A. Railroad Shop, Cleveland, Ohio. 1*

WOOD-WORKING MACHINERY, DESIGNED FOR the manufacture of cars, carriages, sash, blinds, doors, moldings, patterns, piano-forte and cabinet work, agricultural implements, packing boxes, lumber, &c. Made by RICHARDSON, MERRIAM & CO., Worcester, Mass. 18 5*

WOODWORTH PLANERS—IRON FRAMES TO PLANE 18 to 24 inches wide, at \$90 to \$110. For sale by S. C. HILLS, No. 12 Platt-street, New York. 11a

READY ROOFING.—THIS ARTICLE IS MADE OF the thickest woven fabric ever used for roofing; invented and manufactured expressly for our own use. (See page 176 of the current volume of the SCIENTIFIC AMERICAN for full description.) Needs no coating of cement to be spread upon the surface after being nailed upon the roof-boards, as every other kind of roofing does. It costs less than half the price of tin, is far more durable, and is easily applied by anyone. READY ROOFING COMPANY, 73 Maiden Lane, New York. 18 4*

GILLESPIE'S GOVERNOR AND REGULATOR.—THE attention of mill-owners and others is respectfully invited to this valuable improvement for regulating the speed of water wheels, for which purpose it has never been equaled. Unlike other regulators of water wheels, it is quick and very sensitive, while it works upon an entirely new principle. It is the most simple and durable governor ever used, and is therefore the cheapest. We warrant every machine to give satisfaction, or no sale. J. E. GILLESPIE & CO., Trenton, N. J. 18 4*