A. F. G., of Pa.—It is very generally believed that the Jonval is the best kind of turbine in use. Wheels by different makers have given as high as 90 per cent of the water-power according to reported statements of their performances. A turbine that gives out 75 per cent of the power of the water, we hold to be a good wheel.

J. W., [redacted]hio.—The electro-magnetic power developed by [redacted]y, is just in proportion to the decomposition of the ele[redacted]the battery. The principle is the same as the combustion of coal in a furnace in raising steam in a boiler to operate an engine. In both cases chemical energy is transformed into mechanical power.

S. M. H., of Washington.—The manufacture of rifles at Enfield, England, is carried on in the same manner as at Springfield, Mass. The system has been copied from that of the United States armory in nearly all its details. Each mechanic works upon a special part of a musket.

H. S. D., of Mass.—We do not think it a reliable plan to test your boiler by the expansion of the water from heat. If you are afraid that your boiler has been weakened by acid in the water you should have it examined by a competent person. Some carbonate of soda and mahogany or oak saw-dust fed, occasionally, into the boiler will prevent incrustations by the use of hard water, but we recommend in preference the use of soft feed-water in all cases where it can be obtained.

G. W. M., of Pa.—The meteorological phenomena of mock suns seen at Dubuque, Iowa, on the 16th ult., a sketch of which you have sent us, is similar to others of the same kind described in Professor Brocklesby's meteorology.

W. N., of Mich.—Vol. VI. (new series) of the SCIENTIFIC AMERICAN is out of print, but perhaps you may be able to obtain one by advertising for it.

C. E. R., of N. H.—An oscillating engine, if well made, is as good as any other. Some of the best steamships are provided with such engines.

T. N. M., of Pa.—Paye's trip hammer was published on page 1, Vol. V. (new series) of the SCIENTIFIC AMERICAN.

M. O., of Conn.—There is no such thing as a self-acting cannon, and we cannot imagine why you so style the gun you refer to. The weapon is loaded and fired by manual power, the same as any other and therefore the term is clearly an absurdity.

J. B., of Mass.—When your water gets too low in the boiler draw the fire immediately and you will then run no risk of burning the plates. If you take proper care no such accident is likely to occur.

T. C., of R. I.—We should be very glad to have you forward your experience with turning tools of different shapes. Never mind the phraseing of the matter; we will attend to that portion of the subject. Try and induce your brother-mechanics to communicate with us on this subject. We are always glad to receive information relating to mechanical subjects.

R. L., of Ky.—We do not know where you can procure the kind of rifle you refer to. Inquire of some practical gunmaker and perhaps he will inform you. It is new to us.

J. H., of N. Y.—If you intend to take out an English patent for your invention, we advise you not to delay the matter. We never suppress the publication of patent claims. We publish an official list and intend that it shall be complete and reliable.

J. K. G., of Iowa.—Your method of making shot seems to be valuable in its results, but before passing an opinion upon its novelty, we shall require a more complete description of it, and would also advise you to send us diagrams showing the particular mechanism employed.

H. W., of Ohio.—You can make a most excellent cement for the joints of leaky tin roofs with white lead, linseed oil, some dry white sand and pipe-clay. It will soon become almost as hard as stone and keep out water perfectly. It should be rendered sufficiently thin to be put on with a brush.

H. T., of N. Y.—The benzole, so-called, of petroleum will dissolve india-rubber and gutta-percha. It is a better solvent for drying quickly than turpentine. Two pieces of cloth coated on their inside surfaces with this varnish, then laid upon one another and run between rollers with the unprepared surfaces outside, form what is called "McIntosh's water-proof cloth."

J. McV., of Ind.—Shellac varnish is made from the gum, lac. Shellac proper is prepared from seed lac by melting and straining it through a cloth and then letting it fall on leaves and smooth stems of trees, so as to form thin scales or plates. You can obtain it at almost any drug store in your town; it is very dear at present.

## Money Received

**At the Scientific American Office, on account of Patent** Office business, from Wednesday, April 1, to Wednesday, April 8, 1863:—

S. M. S., of Iowa, $20; P. & E., of Maine, $46; J. D., of N. Y., $20; T. R., of N. Y., $54; K. & M., of N. Y., $26; W. C. O., of N. Y., $25; J. M., of Mass., $16; W. K. M., of Wis., $25; J. McL., of Ohio, $12; L. N. L., of Mass., $32; J. C., of Ohio, $10; D. C. W., of Ill., $15; T. W., Mass., $25; C. W., of Mass., $16; W. & C., of N. H., $16; T. E., of R. I., $16; J. A. H., of Pa., $15; A. C., of Ill., $16; M. C. E., of N. Y., $25; W. D., of Ohio, $16; J. F. McK., of Pa., $16; R. R., of Ill., $20; J. A. R., of N. J., $20; A. Y. M., of Iowa, $20; S. F., of N. Y., $20; A. H., of Iowa, $15; L. M., of N. Y., $26; J. B., of Ill., $25; J. E. D., of Mass., $15; G. S. M., of Ill., $55; G. H., of Mass., $25; R. S. C., of Iowa, $25; C. M. S., of Pa., $16; W. D., of N. H., $16; F. B. W., of Ill., $25; C. E. S., of Conn., $25; J. B. T., of N. Y., $25; D. T. H., of Mass., $16; H. & S., of Pa., $15; J. R. B., of Ind., $25; R. McD., of N. J., $25; A. H. P., of Iowa, $25; H. C., of Cal., $20; A. S. M., of Ill., $30; E. T. S., of N. Y., $300; R. W., of N. Y., $45; I. F. J., of N. Y., $146; D. C. G., of Pa., $10; S. J. S., of N. Y., $61; N. S., of N. Y., $34; H. L. B., of N. Y., $25; E. St. J., of N. Y., $25; D. L. M., of N. J., $16; S. F. L., of Wis., $20; F. A., of N. Y., $16; M. & B., of Ohio, $25; L. D. B. and others, of Pa., $16; J. G., of Ill., $16; C S., of Ill., $60; L. C., of Mass., $25; H. & P., of Cal., $20; B. & T., of Vt., $20; W. D. R., of Pa., $12; J. T., of Wis., $25; C. C. W., of Ill., $30; W. F. G., of Ohio, $10.

**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 1, to Wednesday, April 8, 1863:—

P. and E., of Maine; D. C. G., of Pa; J. D., of N. Y.; E. T. S., of N. Y. (6 cases); S. J. S., of N. Y.; T. R., of N. Y.; N. S., of N. Y.; K. and M., of N. Y.; L. M., of N. Y.; H. L. B., of N. Y.; W. C. O., of N. Y.; W. F. G., of Ohio; J. B., of Ill.; L. D. C., of Mich.; S. C. S., of Ill.; R. S. C., of Iowa; T. W., of Mass.; G. H., of Mass.; B. F. S., of Iowa; F. P. F., of N. J.; W. K. M., of Wis.; E. St. J., of N. Y., J. McL., of Ohio; J. R. B., of Ind.; F. H. C. M., of N. Y.; W. D. R., of Mass; L. C., of Mass.; B. and T. of Vt.; C. W., of Mass.; M. C. E., of N. Y.; R. McD., of N. J.; C. E. S., of Conn.; A. H. P., of Ohio; W. H., of Wis.; J. T., of Wis.; J. B. T., of N. Y.

## 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 1853, to accompany the claim, on receipt of $2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

**Models are required to accompany applications for Patents** under the new law, the same as formerly, except on design patents when two good drawings are all that is required to accompany the petition, specification and oath, except the Government fee.

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

### Binding the "Scientific American."

It is important that all works of reference should be well bound. The SCIENTIFIC AMERICAN being the only publication in the country which records the doings of the United States Patent Office, it is preserved by a large class of its patrons, lawyers and others, for reference Some complaints have been made that our past mode of binding in cloth is not serviceable, and a wish has been expressed that we would adopt the style of binding used on the old series, *i. e.*, heavy board sides, covered with marble paper and morocco backs and corners.

Believing that the latter style of binding will better please a large portion of our readers, we shall commence on the expiration of this present volume 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 will be 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, 37 Park Row, New York.

## RATES OF ADVERTISING.

**Twenty-five Cents** per line for each and every insertion, payable in advance. To enable all to understand how to 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.

# THE CHEAPEST MODE OF INTRODUCING INVENTIONS.

INVENTORS AND CONSTRUCTORS OF NEW AND useful Contrivances or Machines, of whatever kind, can have their Inventions illustrated and described in the columns of the SCIENTIFIC AMERICAN on payment of a reasonable charge for the engraving.

No charge is made for the publication, and the cuts are furnished to the party for whom they are executed assoon as they have been used. We wish it understood, however, that no secondhand or poor engravings, such as patentees often get executed by inexperienced artists for printing circulars and handbills from, can be admitted into these pages. We also reserve the right to accept or reject such subjects as are presented for publication. And it is not our desire to receive orders for engraving and publishing any but good Inventions or Machines, and such as do not meet our approbation in this respect we shall decline to publish.

For further particulars, address—

**MUNN & CO.,**
Publishers of the SCIENTIFIC AMERICAN,
New York City.

## IMPORTANT PRACTICAL BOOKS.

Statistics of Coal; including Mineral Bituminous Substances employed in Arts and Manufactures; with their Geographical, Geological and Commercial Distribution and amount of Production and Consumption on the American Continent. With Incidental Statistics of the Iron Manufacture. By R. C. Taylor. Second edition, revised by S. S. Haldeman. Illustrated by five maps and many wood engravings. 8vo., cloth, $6.

The Coal Trade of British America; with Researches on the Character and Practical Values of American and Foreign Coals. By Walter R. Johnson, Civil and Mining Engineer and Chemist, 8vo., $2. ☞This volume contains the results of the experiments made for the Navy Department, and upon which their coal contracts are now based.

The Manufacture of Iron in all its various branches, including an Essay on the Manufacture of Steel. By F. Overman. Illustrated by 150 engravings. Third edition, 8vo., cloth, $5.

Strength and other Properties of Metals. Reports of Experiments on the Strength and other Properties of Metals for Cannon. With a description of the machines for testing metals, and of the classification of cannon in service. By Officers of the Ordnance Department, U. S. Army. By authority of the Secretary of War. Illustrated by 25 large steel plates. In one vol. quarto, $10. ☞The best treatise on cast iron extant.

The Practical Metal Worker's Assistant, for Tin-plate Workers, Braziers, Coppersmiths, Zinc-plate Ornamenters and Workers, Wire Workers, Whitesmiths, Blacksmiths, Bell-hangers, Jewellers, Electrotypers, and all other Workers in Metals and Alloys. By Oliver Byrne. Illustrated, 8vo., cloth, $7 50.

The Hand-book for the Artisan, Mechanic and Engineer; containing Instructions in Grinding, Sharpening of Cutting Tools, Figuration of Materials by Abrasion, Lapidary Work, Gem and Glass Engraving, Varnishing and Lackering, Abrasive Processes, &c. By Oliver Byrne. Illustrated with 11 large plates and 185 cuts. 8vo., cloth, $5.

The Practical Model Calculator, for the Engineer, Mechanic, Machinist, Manufacturer of Engine-work, Naval Architect, Miner and Millwright. By Oliver Byrne. Illustrated, 8vo., cloth, $3 50.

The Practical Brass and Iron Founder's Guide; a Concise Treatise on the Art of Brass Founding, Molding, &c., with numerous Practical Rules, Tables and Receipts for Gold, Silver, Tin and Copper Founding; Plumbers, Bronze and Bell Founders, Jewelers, &c. By James Larkin, Conductor of the Brass Foundry Department, at Reaney, Neafie & Co.'s Works, 12o., $1.

☞The above, or any of my publications, sent by mail free. Catalogues, including important works now in press, sent free of postage on application. HENRY CAREY BAIRD, Publisher of Practical Books, 406 Walnut street, Philadelphia. 1

THE PHRENOLOGICAL JOURNAL FOR APRIL CONTAINS Portraits and Characters of Mr. Chas. W. Stafford—inventor of the projectile--the Rev. Alex. Clark, the Poet and Preacher. Ethnology of the Negro, the Saxon, Norse, and Dane. How to Talk, Language, its functions and cultivation. Memory. A Scotch Miser —Going to Europe. Art and Artists—Hidden Life, Revealed by Microscope. Anatomy of the Brain—Spiritual, Intellectual and Social Organs—Born Again. Physiognomy—the "Chin"—its Language. Love, Economy, &c. Human Perfection, by a Clergyman—How Attained, in the April PHRENOLOGICAL JOURNAL—10c. for $1 a year. FOWLER & WELLS, New York. 2*

## BUREAU OF ORDNANCE.

NAVY DEPARTMENT,
Washington City, March 2, 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 like 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 thirty 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

WANTED—AN INTELLIGENT PRACTICAL MAN to take charge of our Forge and Axle Factory at Allentown, Lehigh county, Pa.—most admirably located, and doing a large and profitable business. To a man possessing the requisite qualifications, with a few thousand dollars, a liberal interest would be given in the profits. Application may be made at the Factory or to JOHN C. SCOTT, 205½ Walnut street, Philadelphia. SCOTT & CO. 15 4*

PARTNER WANTED IN A FOUNDRY AND MACHINE SHOP in Owego, N. Y. A practical machinist of experience in carrying on the business desires a partner. The concern is newly fitted up in the best manner, and in full operation, with many orders ahead and the finest prospects. Reference: John McCollum, 40 Eldridge street, New York city. W. H. BELL, Owego, N. Y. 15 4*

A DRAUGHTSMAN OF LONG EXPERIENCE, HAVING the practice of several large shops in designing locomotives, propellers and other engines, desires a permanent position, with a view to take an interest, in a good shop. Address J. H. MEISSNER, Jersey City, N. J. 15 2*

FICKETT'S PATENT BELT FASTENING.
Adapted to Leather and Rubber Belts of all widths and descriptions; all kinds of machinery and any required speed. Full directions with each box. PECK BROTHERS, 61 Chambers street, New York. 15 2

BRISTOL'S ANTI-FRICTION SLIDE VALVE MAY be put in place of any ordinary one; is self-fitting, requiring but little power to move it, very little lubrication is needed, and if used without any, cannot cut its face or seat, and will last as long as the engine upon which it is placed. It is in use on all sizes of engines, including several large ones of the United States Navy. Apply to R. C. BRISTOL, Chicago, Ill. 16 eow5*

## A VALUABLE WORK FOR INVENTORS, PATENTEES AND MANUFACTURERS.

The publishers of the SCIENTIFIC AMERICAN have just prepared, with much care, a pamphlet of information about Patents and the Patent Laws, which ought to be in the hands of every inventor and patentee, and also of manufacturers who use patented inventions. The character of this useful work will be better understood after reading the following synopsis of its contents:—

The complete Patent Law Amendment Act of 1861—Practical Instructions to Inventors, how to obtain Letters Patent, also about Models—Designs—Caveats—Trade-marks—Assignments—Revenue Tax —Extensions—Interferences—Infringements—Appeals—Re-issues of Defective Patents—Validity of Patents—Abandonment of Inventions —Best Mode of Introducing them—Importance of the Specification—Who are entitled to Patents—What will prevent the Granting of a Patent—Patents in Canada and European Patents—Schedule of Patent Fees; also a variety of miscellaneous items on patent law questions.

It has been the design of the publishers to not only furnish, in convenient form for preservation, a synopsis of the PATENT LAW and PRACTICE, but also to answer a great variety of questions which have been put to them from time to time during their practice of upwards of *seventeen years*, which replies are not accessible in any other form. The publishers will promptly forward the pamphlet by mail, on receipt of six cents in postage stamps.

Address MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, No. 37 Park Row, New York. 9

"INVENTORS' EXCHANGE."—309 REGENT STREET, Polytechnic Institute Building, London, England. Established for negotiating the sale of Patents, and for the sale and exhibition of Patented Articles. The Polytechnic Institute is the headquarters of scientific men, Regent street is London's principal thoroughfare, and the "Inventors' Exchange" offers unusual facilities for negotiating Patent Rights to the best advantage. The sales room fronts on Regent street, has plate-glass front and side, is 20 by 60 feet in dimensions, 13 feet high, forming one of the most attractive show-rooms in the metropolis. American inventors having articles of merit patented in Great Britain, are invited to correspond with CHARLES P. BUTTON, Proprietor of the "Inventors' Exchange," London, England. Refers to S. M. Pettingill & Co., 37 Park Row, and Julius R. Pomeroy, 192 Broadway, New York. 14 8*

PLATINA! PLATINA!! PLATINA!!! PLATINA!!!!
In Sheet, Wire, Sponge, Scrap, &c. SUTTON & RAYNOR, 748 Broadway, New York. 15 2*

FAN BLOWERS—DIMPFEL'S, ALDEN'S, McKENZIE'S and others, for Steamboats, Iron Works, Foundries, Smith Shops, Jewelers, &c., on hand for sale by LEACH BROTHERS, 86 Liberty street, New York. 15 13

TRIP HAMMERS.—WE ARE MANUFACTURING Howell's Patent Trip Hammers (illustrated in No. 2, Vol III., new series, SCIENTIFIC AMERICAN) to which the attention of those interested is invited. Descriptive circular and references to those who have them in use mailed to all applicants. JAMES L. HAVEN & CO., Nos. 173, 175 and 177 West Second street, Cincinnati, Ohio. 14 6*

CLOUGH & BURRELL'S PATENT FIRE-CRACKER Torpedo and Parlor Gun.—This device is intended as a toy gun, and an instrument of practice in acquiring the art of shooting. The best and most saleable article for boys and girls' enjoyment of anything ever offered the trade. Price $15 per gross; fancy striped $18. All orders must be addressed to S. R. BURRELL, 71 Broad street, or o I. S. CLOUGH, 290 Pearl street, New York. 14 4*

ELECTRO-MAGNETIC WATCH-CLOCK COMPANY.—Hamblet's Patent—at 47 Hanover street, Boston, Mass. Orders and correspondence responded to by EDMANDS & HAMBLET. 14 4*

INCRUSTATION IN BOILERS—A SURE REMEDY—**WINAN'S ANTI-INCRUSTATION POWDER.**—Seven years in successful use, without injury. This should give it preference over new and unknown mixtures lately put in the market References: In New York, American Bank Note Co.; in Cincinnati, Miles Greenwood; and over 1,000 others throughout the country. Apply for circulars to H. N. WINANS, Box 6, P. O., New York City. 13 4.

J. E. CHENEY, MANUFACTURER OF FILTERS FOR purifying lake, rain and river water, Rochester, N. Y. 13 4*

FOR SAW-GUMMERS ADDRESS DOLE & SILVER, Salem, Ohio, who are the exclusive manufacturers of "Dole's Patent," the best in use. 13 4*

DRAWING OFFICE, NO. 406 WALNUT STREET Philadelphia, Pa.—Drawings of every kind neatly executed. 13 4*

FOR WOOD LATHES, SCROLL SAWS, SAW BENCHES and wood-working machinery, address J. A. FAY & CO., or C. TAINTER, succeeding partner, Worcester, Mass. 14 18*

IMPROVED SCROLL CHUCKS, MADE BY A. F. CUSHMAN, Hartford, Conn. Cast-steel Scroll and Jaws, $2 to $5 extra. Address as above. 14 4*

PECK'S PATENT DROP PRESS—A LARGE VARIETY of Sizes and Styles for Forging and for Stamping Sheet-metals. Manufactured by MILO PECK & CO., New Haven, Conn. 8 10*

MACHINERY.—S. C. HILLS, No. 12 PLATT-STREET New York, dealer in Steam Engines, Boilers, Planers, Lathes Chucks, Drills, Pumps; Mortising Tenoning and Sash Machines; Woodworth's and Daniels' Planers, Dick's Punches, Presses and Shears; Cob and Corn Mills; Harrison's Grist Mills; Johnson's Shingle Mills; Belting, Oil, &c. e

READY MADE AND FOR SALE—ONE FIRST-CLASS Woodworth Planer and Matcher—9-inch cutter head, 15-inch knives; six Feed Rolls—6-inch diameter—weigh 7,000 lbs. Price $550. Address J. A. FAY & CO., Worcester, Mass., or E. E. TAINTER, succeeding partner. 12 16 19 20 *

J. E. STEVENSON, THE NOVELTY IRON WORKS, New York, agent for the purchase of Mill and Factory Machinery, Steam Engines, Tools, &c. All orders intrusted to his care will be promptly attended to. 14 eow6*

WANTED—A YOUNG AND ENERGETIC MAN TO take charge of a Machine Iron Foundry in a Western city. Address, stating age, experience, and with references, LANE & BODLEY, Cincinnati, Ohio. 16 5*

VALUABLE MANUFACTURING ESTABLISHMENT FOR SALE—Located near the Westport Depot on the New York and New Haven Railroad. The factory is a brick building about 100 by 60 feet, with a beam engine of 150 horse-power, and of the most approved construction. The factory is located by the side of the channel of the Saugatuck river, below the railroad bridge, and has a water front, where vessels can lay at any stage of water, while the distance to the railroad depot is not over 20 rods. The property will be sold cheap, either with or without the engine. No more desirable location for manufacturing with economy can be found in the country. For particulars, inquire of P. T. BARNUM, at the American Museum, New York, or of WILLIAM D. BISHOP, Bridgeport, Conn. 13 4*

AMESSIEURS LES INVENTEURS—AVIS IMPORTant. Les Inventeurs non familiers avec la langue Anglaise et qui préféreraient nous communiquer leurs inventions en Français, peuvent nous addresser dans leur langue natalie. Envoyez nous un dessin et une desoription concise pour notre examen. Toutes communications seront reques en confidence. MUNN & CO.,
SCIENTIFIC AMERICAN Office, No. 37 Park-row, New York.

OIL! OIL! OIL
For Railroads, Steamers, and for Machinery and Burning. PEASE'S Improved Engine and Signal Oil, indorsed and recommended by the highest authority in the United States. This Oil possesses qualities vitally essential for lubricating and burning, and found in no other oil. It is offered to the public upon the most reliable, thorough and practical test. Our most skillful engineers and machinists pronounce it superior to and cheaper than any other, and the only oil that is in all cases reliable and will not gum. The SCIENTIFIC AMERICAN, after several tests, pronounces it "superior to any other they have ever used for machinery." For sale only by the Inventor and Manufacturer, F. S. PEASE, No. 61 Main street, Buffalo, N. Y.

N. B.—Reliable orders filled for any part of the United States and Europe. 9 13

GUN SCREWS! GUN SCREWS! !—THE SUBSCRIbers have on hand and are manufacturing gun screws which they will warrant to fit "Springfield" Gages. They also solicit orders for gun screws to fit other gages. Samples can be seen at our store, No. 74 Beekman street, New York. FELLOWS, HOFFMAN & CO. 12 12*

BOLTS, NUTS AND WASHERS OF ALL SIZES CONstantly on hand for sale by LEACH BROTHERS, 86 Liberty street New York. 10 13*

NERVOUS DISEASES AND PHYSICAL DEBILITY, arising from Specific causes, in both sexes—new and reliable treatment, in Reports of the Howard Association—sent in sealed letter envelopes, free of charge. Address Dr. J. SKILLIN HOUGHTON, Howard Association, No. 2 South Ninth street, Philadelphia, Pa. 16 4*

MILLSTONE-DRESSING DIAMONDS, SET IN PATent Protector and Guide. For sale by JOHN DICKINSON, patentee and sole manufacturer, No. 64 Nassau street, New York City. Also manufacturer of Glazier's Diamonds. Old Diamonds re-set. 5 12*

GUTTA-PERCHA CEMENT ROOFING.—THIS ARTICLE has been thoroughly tested for nearly seven years, and we have more than three thousand certificates relative to its merits. It is fire and water-proof; costs only about one-third as much as tin, and is more durable; can be applied by ordinary laborers at a trifling expense. Liquid Gutta-percha Cement for coating and preserving metal roofs, and for repairing leaky roofs of all kinds. These materials are shipped ready for use (no heat required). Full descriptive circulars, prices, &c., furnished by the JOHNS & CROSLEY MANUFACTURING COMPANY (sole manufacturers), 78 William street, corner of Liberty, New York. 14 4*

VALUABLE DOCK PROPERTY FOR SALE.—THE subscriber offers for sale a valuable plot of ground on Newtown Creek, near Penny Bridge, in the city of Brooklyn. The property is very desirably situated in the Seventeenth Ward, Meeker avenue, a great thoroughfare, forming the southerly boundary of the premises. A valuable dock privilege of over 400 feet on Newtown Creek, renders the property very desirable for large manufacturing or storage purposes. Vessels of six or eight feet draft can navigate the creek at low tide, and of much greater capacity at high water. The upland and water privilege comprise about nineteen acres, and will be sold very cheap, and the terms of payment made liberal. For further particulars, address J. B. BULLOCK, attorney for the owners, No. 39 Nassau street, New York. 22tf

TO PHOTOGRAPHERS. IMPROVED PHOTOGRAHIC Camera, Patented March 25, 1862, by A. B. WILSON (Patentee of the Wheeler and Wilson Sewing Machine), adapted to all photographic work; such as Landscapes, Stereoscopic Views, Carte Visites, Ambrotypes, &c. Can be used by amateurs and others from printed directions. Send for a circular. Address A. B. WILSON, Waterbury, Conn. 16tf

SOLID EMERY VULCANITE.—WE ARE NOW MANUfacturing wheels of this remarkable substance for cutting, grinding and polishing metals, that will outwear hundreds of the kind commonly used, and will do a much greater amount of work in the same time, and more efficiently. All interested can see them in operation at our warehouse, or circulars describing them will be furnished by mail.
NEW YORK BELTING AND PACKING CO.,
14 13 Nos. 37 and 38 Park-row, New York.

GUILD & GARRISON'S CELEBRATED STEAM Pumps—Adapted to every variety of pumping. The principal styles are the Direct Action Excelsior Steam Pump, the improved Balance Wheel Pump, Duplex Vacuum and Steam Pumps, and the Water Propeller, an entirely new invention for pumping large quantities at a light lift. For sale at Nos. 55 and 57 First street, Williamsburgh, and No. 74 Beekman street, New York.
1 tf GUILD, GARRISON & CO.

MACHINE BELTING, STEAM PACKING, ENGINE HOSE.—The superiority of these articles, manufactured of vulcanized rubber, is established. Every belt will be warranted superior to leather, at one-third less price. The Steam Packing is made in every variety, and warranted to stand 300 degs. of heat. The Hose never needs oiling, and is warranted to stand any required pressure, together with all varieties of rubber adapted to mechanical purposes. Directions, prices &c., can be obtained by mail or otherwise at our warehouse. NEW YORK BELTING AND PACKING COMPANY.
JOHN H. CHEEVER, Treasurer,
14 13 Nos. 37 and 38 Park-row New York.

IRON PLANERS, ENGINE LATHES, DRILLS AND other machinists' tools, also three and four spindle Drills of superior quality, on hand and finishing, for sale low. For description and price address NEW HAVEN MANUFACTURING COMPANY, New Haven, Conn. 1tf

PATENT DRIER IN ONE, TWO AND FOUR-POUND tins, Patent Stove Polish, Graining Colors and Patent Gold Size. QUARTERMAN & SON, 114 John street, New York. 4 3m*

BLACK DIAMOND STEEL WORKS, PITTSBURGH, Pa PARK, BROTHER & CO., manufacturers of best quality Refined Cast Steel, square, flat and octagon, of all sizes. Warranted equal to any imported or manufactured in this country. Office and Warehouse, Nos. 149 and 151 First street, and 120 and 122 Second street, Pittsburgh, Pa. 11 1y*

PORTABLE STEAM ENGINES—COMBINING THE maximum of efficiency, durability and economy with the minimum of weight and price. They are widely and favorably known, more than 200 being in use. All warranted satisfactory or no sale. A large stock on hand ready for immediate application. Descriptive circulars sent on application. Address J. C. HOADLEY, Lawrence, Mass. 14 13

## Zur Beachtung für deutsche Erfinder.

Die Unterzeichneten haben eine Anleitung, die Erfindern das Verhalten angibt, um sich ihre Patente zu sichern, herausgegeben, und verabfolgen solche gratis an dieselben.

Erfinder, welche nicht mit der englischen Sprache bekannt sind, können ihre Mittheilungen in der deutschen Sprache machen. Skizzen von Erfindungen mit kurzen, deutlich geschriebenen Beschreibungen beliebe man zu addressiren an

**Munn & Co.,**
37 Park Row, New-York.

Auf der Office wird deutsch gesprochen.

**Daselbst ist zu haben:**

## Die Patent-Gesetze der Vereinigten Staaten,

nebst den Regeln und der Geschäftsordnung der Patent Office und Anleitungen für den Erfinder, um sich Patente zu sichern, in den Ver. St. sowohl als in Europa. Ferner Auszüge aus den Patent Gesetzen fremder Länder und darauf bezügliche Rathschläge; ebenfalls nützliche Winke für Erfinder und solche, welche patentiren wollen.

Preis 20 Cts., per Post 25 Cts.

### The National Gallery.

The grand hall of the Patent Office, which was originally fitted up for the now-defunct National Institute, has been arranged as a depository for the historical relics, the trophies, the art-treasures and the imperial and royal gifts in the possession of the general Government. Among these are the personal effects and sword of Washington, the staff and the printing-press of Franklin, the original Declaration of Independence, treaties with the foreign powers, &c., and now the collection is crowned, as it were, by Power's "Washington." This noble statue, which graced the State-house of Louisiana, and was sent here by General Butler as "spoils of war," has been placed beneath, where the light is perfect, and where its beauties can be seen to its greatest advantage. Mrs. Lincoln has also had placed in the National Gallery a variety of valuable and curious articles, sent as presents to the President by the king of Siam and by the Emperor of Japan. Among the most remarkable of these objects are an entire coat of mail, made of iron, copper, silver and gold, exquisitely wrought; the helmet is not unlike those worn by the Saracens in the days of the Crusaders, save a curious pendent curtain which was worn to defend the neck; the chain-work protecting the arms would have done honor to a Damascus armorer, each link being of the finest-tempered steel, the greaves are of copper, finely lacquered. A vase weighing one hundred pounds, for an orange tree, is of porcelain, enameled in mazarine blue and white—that same delicious Indian blue for which our grandmothers used to sigh in vain, so rare and so expensive was this color. The monogram of the emperor illuminates its sides, while a Grecian border environs the top. A tassa of porcelain, thirty inches in diameter, profusely pictured in colors, with storks, dragons, butterflies, chysanthemums, the rising sun and the peak of Fusymma, render it one of the most unique of gifts. Two enormous elephant's tusks (a staple article, by the way, in Siam) gives one a favorable idea of the strength of the beast that wore them. They are valued at $1,000; this country has never possessed a finer specimen of ivory. The scientific collections made by our exploring expeditions were removed a year or two since to the museum at the Smithsonian Institution; but from present appearance, the space which they occupied in the National Gallery will soon be filled with objects of great interest to every citizen.

### Human Remains discovered at Pompeii.

Galignani publishes the following curious story:—

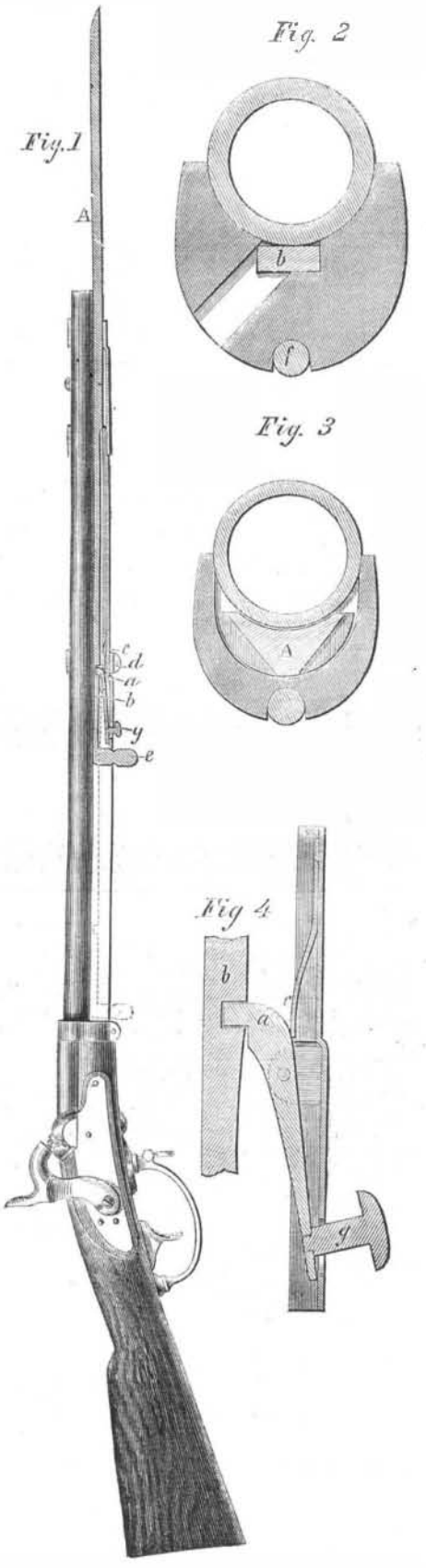
"A very interesting discovery has just been made by M. Florelli, the inspector of excavations at Pompeii. While digging at a depth of from eight to ten feet, the pickaxe struck into a little mass of coins and jewels. M. Florelli then continued the excavation with the greatest care, removing the earth grain by grain, and, after some hours labor, was rewarded by the discovery in the hardened ashes of the perfect mold of a man in a lying posture, the skin of whom had dried up, but the skeleton remained intact. M. Florelli caused plaster-of-paris to be poured into the form of the Pompeiian, and the casting succeeded perfectly with the exception of two fragments of an arm and a leg, where the mold was incomplete. The cast of the man is of the greatest precision; the moustache, the hair, the folds of the dress and the sandals are admirably defined."

How Races die out.—The method in which lower races fuse into or escape from the higher is a mystery in its causes, but well understood in its result. The lower race loses its productiveness, and some dozens of extinct tribes, like the extinct genera of animals, attest this. The Red Indians of America, the native race of Peru and the aborigines of Australia are living examples of this rule. In fourteen years (a living traveller says) the aboriginal inhabitants of Tasmania, although numbering upwards of a thousand, did not give birth to more than fourteen children. We may rest assured that at this any rate class of beings will soon exhaust itself.

The Middlesex Mills, Lowell, Mass., are engaged at present, principally in the manufacture of shawls and ladies' cloths. All the machinery is running to its full capacity, giving employment to about 820 persons, of whom 450 are males and 370 are females.

### JENKINSON'S PATENT BAYONET.

The invention herewith illustrated is one intended to secure the bayonet from being accidentally or designedly removed, and to protect it from injury when not in use. In some instances we have seen it stated that the foe has struck the bayonet from the musket by a well-directed blow, and so disarmed his antagonist that he was able to either make him prisoner or despatch him on the spot. No such accident




can occur to muskets fitted with this invention; this the reader will perceive to be the case by perusing our description. The bayonet, A, Fig. 1, projects from the lower side of the barrel, and is confined in a case made by the stock; it is forged in one piece and runs down to about the middle of the barrel; at this point there is a catch, *a*, which engages with the shank, *b*, of the bayonet; a small spring, *c*, serves to keep the catch always in connection with the slot, *d*, formed in the shank previously mentioned. The end of the bayonet shank is turned over, as seen at *e*, and forms a projecting handle which works in a slot in the wooden part of the stock. Fig. 2, is a section of the musket through the shank, *b*, of the bayonet, and shows the form of it, and also the position of the slot in which the handle, *e*, works. The ramrod is seen at *f*. Fig. 3, is a section through the bayonet, and Fig. 4, is an enlarged section of the disengaging apparatus before described; the same letters refer to similar parts. The operation of this apparatus will be apparent to any one by a simple inspection of it. By pressing on the button, *g*, Fig. 4, the other extremity of the lever will be depressed, and the catch thrown out of connection with the recess in the shank; the bayonet may then be slid down in the case by pulling on the handle seen projecting below. The weapon is thus securely protected against any of the casualties enumerated at the head of this article. This bayonet was patented by James Jenkinson, through the Scientific American Patent Agency, on July 1, 1862; further information may be had by addressing the inventor at 111 North First street, Brooklyn, E. D., or Samuel Hirsch, 25 Chamber street, New York.



FROM THE STEAM PRESS OF JOHN A GRAY.