

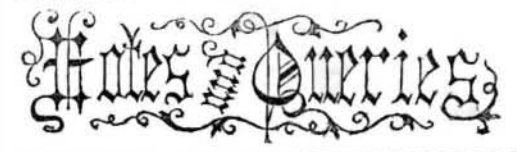
would adopt the style of binding used on the old series, 4 e., heavy board sides covered with marble paper, and morocco backs and corners.

Believing that the latter style of binding will better please a large portion of our readers, we commenced on the expiration of Volume VII., to bind the sheets sent to us for the purpose in heavy board sides, covered with marble paper and leather backs and corners.

The price of binding in the above style is 75 cents. We shall be unable hereafter to furnish covers to the trade, but will be happy to receive orders for binding at the publication office, No. 37 Park Row, New York.

Back Numbers and Volumes of the "Scientific American."

VOLUMES I., III., IV., VII., VIII. AND IX., (NEW SERIES) complete (bound) may be had at this office and from periodical dealers. Price, bound, \$2 25 per volume, by mail, \$3— which includes postage.



J. P. K., of the U. S. N.—We are almost daily in receipt of letters from naval engineers, but are pained to notice that yours—out of all the number—is the only one that is intemperate in tone. You fall into the error that a great many others do, and fancy that when you differ in opinion from the editor of a newspaper, it is only necessary to write him an abusive letter to convince him of his ignorance.

B. T. L., of R. I.—Indian ink is a mixture of lamp-black and glue, with the addition of camphor and other substances in small quantities. It is said that the attempts to imitate it in this country and Europe have not been entirely successful.

C. F., of Ill.—The profession of civil engineer has furnished to skillful men constant and we believe remunerative employment. We judge from this that the future will be equally encouraging.

E. H., of N. Y.—We cannot inform you where chilled iron has been used on journals under water. It would last longer than common cast-iron if the scale was not broken from the peculiar vitreous or glassy texture of the outside.

J. A. S., of Ill.—We do not know what became of "Paine's Spray Engine," but we imagine it died a natural death. The difficulty of preventing the heaters from burning out rapidly has not yet been overcome practically.

Money Received.

At the Scientific American Office, on account of Patent Office business, from Wednesday, March 2, 1864, to Wednesday, March 9, 1864:—

- H. W. K., of N. Y., \$25; Mrs. S. A. M., of N. Y., \$50; A. S. E., of N. Y., \$12; A. S., of N. Y., \$20; D. P., of N. Y., \$25; E. W. B., of N. Y., \$20; W. U., of Ohio, \$50; F. B. & D. F. N., of N. Y., \$10; A. C., of N. Y., \$16; J. T. E., of N. Y., \$16; W. B. L., of N. Y., \$16; L. R., of N. Y., \$150; J. H. S., of Ill., \$45; D. M., of N. Y., \$31; J. B. W., of N. J., \$16; P. B., of N. J., \$20; A. L., of W. Va., \$20; T. S. W., of Ohio, \$25; G. B. McD., of Ky., \$20; J. McK., of N. Y., \$41; W. F., of Mass., \$62; W. & V., of N. J., \$16; E. S. H., of N. J., \$25; S. S., of N. Y., \$16; F. J. N., of Mo., \$25; J. R. B., of Pa., \$16; W. W., of N. Y., \$28; W. A., of Wis., \$16; D. D. G., of Wis., \$25; O. J. E., of Cal., \$25; J. S., of N. Y., \$25; A. A., of N. Y., \$25; F. A. De M., of N. Y., \$25; P. B., of N. Y., \$41; D. M., of N. Y., \$25; W. H., of N. Y., \$25; J. B., of N. J., \$16; S. & G., of Pa., \$45; L. & L., of Mass., \$20; F. K., of N. Y., \$16; C. A. S., of N. Y., \$16; E. C., of Mich., \$20; M. T., of Iowa, \$20; C. T., of N. Y., \$20; A. T. T., of N. Y., \$16; E. S. H., of N. Y., \$20; H. S. R., of N. Y., \$16; O. D. D., of Mich., \$45; T. R.,

- of N. Y., \$164; S. & B., of N. Y., \$101; A. T., of Pa., \$32; J. A. H., of Mo., \$16; S. W., of Mass., \$44; A. H. W., of N. Y., \$16; E. S. A., of Ill., \$16; A. R. S., of Pa., \$16; W. S. N., of Mo., \$16; C. B. G., of Iowa, \$25; G. W. & H. H. F., of N. Y., \$25; J. F. C., of N. Y., \$22; B. M. F., of N. Y., \$25; C. A., of N. Y., \$25; J. G., of N. Y., \$25; W. H., of Pa., \$20; E. F., of N. Y., \$41; J. B. R., of N. Y., \$16; P. B., of N. Y., \$41; H. T. S., of Pa., \$20; J. McF., of N. Y., \$16; W. R., of Wis., \$45; N. & H., of N. J., \$20; F. C. P., of N. Y., \$20; F. H., of N. Y., \$45; L. B. S., of Conn., \$20; H. O. G., of Ill., \$70; C. B. H., of Mass., \$20; W. R. of N. Y., \$31; B. M., of Ohio, \$16; J. W. R., of N. J., \$16; J. A. T., of Mass., \$11; W. C. G., of N. Y., \$19; W. O., of Mass., \$16; U. B. V., of Pa., \$16; B. & W., of Pa., \$28; O. W., of N. Y., \$25; H. & R., of Pa., \$16; E. B., of Ind., \$16; H. & S., of Ill., \$35; C. G. H., of Kansas, \$16; W. A. B., of Vt., \$25; H. N. T., of Vt., \$25; L. H., Jr., of N. J., \$16; A. P., of Pa., \$25; W. S. W. Jr., of Ill., \$25; C. B. H., of N. Y., \$10; H. & L., of Conn., \$25; A. G. T., of Ill., \$20; R. M., of N. Y., \$16; G. H., of Maine, \$25; S. E., of Pa., \$25; F. J. T., of Conn., \$25; J. W. H., of N. Y., \$25; J. N. H., of Ind., \$25; O. S. Jr., of Iowa, \$25; C. W., of Iowa, \$16; J. W., of Mass., \$16; A. G. W., of Cal., \$10; J. M. C., of Oregon, \$25; H. L., of Minn., \$16; A. I., of Ind., \$16; V. H. H., of N. Y., \$16; D. M., of Mass., \$10; S. C. K., of Mass., \$16; O. A. K., of R. I., \$20; N. S. W., of Conn., \$16; D. B. L., of N. Y., \$16; B. F. T., of Mich., \$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, March 2, 1864, to Wednesday, March 9, 1864:—

- P. B., of N. Y.; W. B., of N. Y.; H. W. K., of N. Y.; J. S., of N. Y.; G. W. & H. H. F., of N. Y.; Mrs. S. A. M., of N. Y. (2 cases); A. A., of N. Y.; J. F. C., of N. Y.; A. S. H., of N. Y.; F. A. DeM., of N. Y.; B. M. F., of N. Y.; A. S., of N. Y.; C. A., of N. Y.; D. P., of N. Y.; D. M., of N. Y.; J. G., of N. Y.; A. S. G., of Ill.; W. A. B., of Vt.; G. E. H., of Maine; C. W. W., of Vt.; S. E., of Pa.; J. P., of Mass.; H. & L., of Conn.; O. W., of N. Y.; D. D. G., of Wis.; C. B. G., of Iowa; F. J. N., of Maine; E. S. H., of N. J.; S. W., of N. J.; H. A., of N. Y.; O. S. Jr., of Iowa; W. W., of N. Y.; W. H. B., of Ill.; B. & W., of Pa.; O. J. B., of Cal.; J. W. H., of N. Y.; C. P. L., of Conn.; J. N. H., of Ind.; F. J. T., of Conn.; A. P., of Pa.; J. M. C., of Oregon; T. R., of N. Y. (4 cases); J. McK., of N. Y.; D. M., of N. Y.

RATES OF ADVERTISING.

TWENTY-FIVE CENTS per line for each and every insertion, payable in advance. To enable all to understand how to calculate the amount they must send when they wish advertisements published, we will explain that ten words average one line. Engravings will not be admitted into our advertising columns, and, as heretofore, the publishers reserve to themselves the right to reject any advertisement they may deem objectionable.

WANTED.—AMERICAN OR ENGLISH IMPROVEMENTS in machinery for manufacturing cotton or wool, old or new, patented or unpatented. CHARLES A. SHAW, Biddeford, Maine. 12 10*

GROVER & BAKER'S HIGHEST PREMIUM ELASTIC Sewing Machines, 435 Broadway, New York. 12 11

TO PRINTING ESTABLISHMENTS.—WANTED PROPOSALS for printing foulard silks. Address Box 5,622 New York Post-office. 1*

PATENT IMPROVED SOLID EMERY WHEELS, FOR Cutting, Grinding, and Polishing. No Metal-worker can afford to be without them. Orders promptly filled. Smyrna Emery by the Keg, warranted Pure and Best Quality. NEW YORK EMERY WHEEL COMPANY, 51 Beekman street, New York. 12 4*

WANTED.—VENEER MACHINE (NEW OR SECOND-HAND), for cutting veneers round the log. Address M. L. THOMPSON, 135 Montague street, Brooklyn. 1*

CIVIL ENGINEER.—A YOUNG MAN DESIRES A situation April 1st, as assistant in some engineering operation, field work, office work, or general construction. Can give the best of recommendations as to knowledge and ability. Address CIVIL ENGINEER, care "Scientific American." 12 2*

LABORATORY OF INDUSTRIAL CHEMISTRY.—ADVANCE and consultations on Chemistry applied to Arts and Manufacture, Agriculture, Mounted Objects, Plans of Factories, Drawings of Apparatus. Information on Chemical Fabrications, Commercial Essays. Address PROF. H. DUSSAUCE, Chemist, New Lebanon, N. Y. 1*

THE UNDERSIGNED, INVENTORS AND PROPRIETORS of the "Bristol" Dish-washer, wish to correspond with parties with a view to the manufacturing of this great household invention, which washes Dishes, China Lamp-chimneys sharpens and scours Knives. Illustrated in this number of SCIENTIFIC AMERICAN. Agents wanted. Rights (State and County) for Sale. Extra inducements offered. Address—ALEX. M. & JNO. I. D. BRISTOL, Detroit, Mich. 1*

FOREIGN LABOR.

I INVITE THE CORRESPONDENCE OF MANUFACTURERS wanting Miners, Rollers, Puddlers, Machinists, Molders, Steel, Edge Tool, File, Saw and Cutlery Makers, and Manufacturers of Hardware generally, as I am now prepared to enter into Contracts for the supply of such Labor. I have made such arrangements through my agent in Great Britain as will enable me to furnish any reasonable number of men that may be required.—JOHN WILLIAMS, Editor Hardware Reporter, 80 Beekman street, New York. 12 8*

HACKLE, GILL, COMB CARD PINS, &c., &c., promptly supplied by J. W. BARTLETT, 412 Broadway, New York. Refers to leading Flax, Hemp, Linen and Cordage Machinery manufacturers. 12 tr.

THE CELEBRATED CRAIG MICROSCOPE, COMBINING Instruction with Amusement, is mailed, prepaid, for \$2.50, or with 6 beautiful Mounted Objects for \$3; with 24 Objects, \$5, by HENRY CRAIG, 333 Broadway, New York. 12 8*

AGENCY FOR THE INTRODUCTION AND SALE OF PATENT INVENTIONS.—Inventors and manufacturers desirous of having their inventions introduced in this country and abroad will find it to their interest to send descriptive, illustrated pamphlets or circulars to A. S. CHELLER, 30 Bowery, New York. 11 3*

THE PRACTICAL METAL-WORKER'S ASSISTANT.

NOW READY THE PRACTICAL METAL WORKER'S ASSISTANT; comprising Metallurgical Chemistry, and the Arts of Working all Metals and Alloys; Forging of Iron and Steel, Hardening and Tempering, Melting and Mixing, Casting and Founding, Works in Sheet Metal, the Processes dependent on the Ductility of the Metals; Soldering and the most Improved Processes, and Tools employed by Metal Workers, with the Application of the Art of Electro-Metallurgy to Manufacturing Processes. Collected from original sources, and from the works of Holtzapffel, Bergeron, Leupold, Plumer, Napier, and others. By Oliver Byrne. A new revised and improved edition, with additions by John Scofield, M. B., William Clay, William Fairbairn, F. R. S., and James Napier. With five hundred and ninety-two engravings, illustrating every branch of the subject. In one volume, 8vo. Price SIX DOLLARS. Sent by mail, free of postage, to any address.

The extensive and varied character of the matter in the book may be judged from the following, which only gives a portion of it:—

- CONTENTS: CHAPTER I.—ON METALLURGICAL CHEMISTRY. The useful metals and metallic ores defined. History of metallurgy. Refining processes. New refining processes. Advantages of cast-iron. Crystallizing tendency of wrought-iron in large masses. Theory of alloys. Metallic oxides. Reduction of metallic oxides. Carburetted hydrogen. Sulphides. Chlorides. Calcination and roasting. Carburets and carbons. Metallic salts. II.—SPECIAL METALLURGICAL OPERATIONS. Volatile combinations. Metallic distillation processes. Fluxes and fusing. Furnaces. The combustible junction. Products of combustion. Materials for forging. Tendency of over-refined iron to deteriorate. Chain blast. The Castlaidle. III.—RECENTLY-PATENTED REFINING PROCESSES. Plant's, Martien's, and Clay's processes. Bessemer's process. Bessemer's converting vessel. Application of the tuyeres. Pouring out the fluid metal. Preparing the vessel. Process of conversion explained. Bessemer's squeezers. Bessemer's hammer and gauge. Analyses of Bessemer's iron and of ordinary puddle iron. Reflections on Bessemer's process. IV.—REFINING AND WORKING OF IRON. Iron-furnaces in the United States. Dickerson's method. Malleable iron. Puddling. Winslow's machine. Rollers or rolls. Varieties of iron. V.—MANUFACTURE OF STEEL. Cementation. Blistered steel. Sheer steel. Cast-steel. Qualities of steel. VI.—FORGING IRON AND STEEL. Fires. Blast. Furnaces, forges, and hearths. Ordinary practice for forging. VII.—ON WROUGHT-IRON IN LARGE MASSES. Forge tools. Limits of welding power. Auxiliary tools. Forge-hammers. Nasmyth's steam-hammer. Effects of Nasmyth's hammer. Tendency of over-refined iron to deteriorate. Cast and wrought-iron for ordnance. Tensile strength of the monster gun. Material used in forging. Varieties of treatment required. Modes of working large forgings. Different modes of forging large iron masses. Forging the monster gun. Crystallization explained. Crystalline tendency of iron. Causes of fissures and their prevention. Danger of cooling. Report of the Franklin Institute on the "Princeton" gun. Effects of hammer hardening. Importance of metallurgy to engineers. VIII.—GENERAL EXAMPLES OF WELDING. Trip and tilt-hammers. IX.—HARDENING AND TEMPERING. General view. Hammer hardening. The quantity of carbon in cast-iron. Steel and glass-polarized. Practice of hardening and tempering steel. Examples of hardening and tempering steel. Ra ors, pen-knives, hatchets, adzes, cold chisels. Saws and springs. Jacob Perkins's discovery. Oldham's process. X.—HARDENING CAST AND WROUGHT IRON. Chilled iron castings. Malleable iron castings. Case-hardening wrought and cast-iron. XI.—ON THE APPLICATION OF IRON TO SHIP-BUILDING. Constructions of iron vessels for ocean traffic. Half cross section of a frigate. Ribs. Keels. Decks. Form of the deck-beams. Riveting of the plates. Single and double riveted lap joints. Wood and iron as materials for ship-building. Resistance to tension and compression in iron-ships. Practical tests of iron-ships. Durability. Economy. Effects of shot on iron-ships. XII.—THE METALS AND ALLOYS MOST COMMONLY USED. Description of the physical character and uses of the metals and alloys. Antimony. Bismuth. Copper. Alloys of copper and zinc. Alloys of copper and tin. Alloys of copper and lead. Alloys of copper, zinc, tin, and lead. Gold alloys. Nickel. Palladium. Platinum. Rhodium. Silver. Silver alloys. Tin. Zinc. Babcock's anti-friction metal. Perin's anti-friction metal. Alloy of the standard measure used by government. Tutin-plate. Expansion metal. Tables of the cohesive force of solid bodies. Tabular view of the properties of metals. Weights of wrought-iron, steel, copper and brass wire and plates. XIII.—REMARKS ON THE CHARACTER OF THE METALS AND ALLOYS. Hardness, fracture, and color of alloys. Malleability and ductility of alloys. Strength or cohesion of alloys. Aloy-balance. Table for converting mechanical proportions into divisions of the pound avoirdupois. Malleability of alloys. M. Martien's process for the protection of iron from oxidation. Palladiumizing process. XIV.—MELTING AND MIXING THE METALS. The various furnaces, &c., for melting the metals. Antimony, copper, gold, and silver, and their alloys. The management of the furnace and mixing alloys. Britannia metal. Barron's furnace. XV.—CASTING AND FOUNDING. Metallic, earthen, and complex molds. Metal molds for pewter works. Bearings for locomotive-engines. Type founding. Plaster of Paris molds and sand molds. Stereotype founding. Molding sand and flasks. Patterns, molds, and modified simple objects. Foundry patterns. Cores of molds. Molding-cores. Core-boxes. False core and drawback. Reversing and figure-casting. Casting figures, ornaments, branches, and foliage. Filling the molds. Gun metal and pot metal. Iron-founders' flasks and sand molds. Remarks on patterns for iron castings. Loam molding. Melting and pouring iron. New method of manufacturing drop shot. XVI.—WORKS IN SHEET METAL MADE BY JOINING. On malleability, &c.—division of the subject. Terrestrial globes. Works in sheet metal made by cutting, bending, and joining. A hexagonal box. Polygonal figures. Prismatic vessels. Pyramids. Frustums of pyramids. Mixed polygonal figures. Radiating pieces for polygonal vases. Polygonal vases of unequal sides. Tools. Modes of bending curved work. Improved machine for rolling up sheet-metal pipe. Angle and surface joints. Francis's metallic life-boats. XVII.—WORKS IN SHEET METAL MADE BY RAISING; AND THE FLATTENING OF THIN PLATES OF METAL. Circular works spun in the lathe. Works raised by the hammer. Solid and hollow bowls. Raking and hollowing. Raising globes. Vases. Jelly molds. Stamping. Peculiarities in the tools and methods. Flattening thin plates of metals with the hammer. XVIII.—PROCESSES DEPENDENT ON DUCTILITY. Drawing wires, metal tubes, &c. XIX.—SOLDERING. General remarks and tabular view. Tabular view of the process of soldering. Hard soldering. Soft soldering. Soldering per se, or burning together. Alloys and their melting heats. Fluxes. Examples of applying heat in soldering. The use of the blow-pipe. Examples of hard and soft soldering. Richemont's alro-hydrogen blow-pipe. XX.—SHEARS. XXI.—PUNCHES. XXII.—DRILLS. XXIII.—SCREW-CUTTING TOOLS. Originating screw. Cutting internal screw with taps. The principle of chamfering. Transverse sections of taps. Die-stocks. Master-taps. Bolt-screwing machine. Shaping machine. Screws cut by hand in a common lathe. Cutting screws in lathes with traversing mandrels. Cutting screws in lathes with traversing tools. Healey's screw-cutting apparatus. System of change-wheels for screw-cutting. Screw-tools for angular threads. Screw-tools for square threads. Various modes of originating and improving screws. Fusee engine. Ramsden's screw-cutting engine. Clement's mode of originating the screw-guide. Chucking and reaming lathe. Engine-lathe. Screw-threads considered in respect to their proportions, forces and general characters. The measures and relative strengths of screws. Sections derived from the angular thread and from square threads. Table for angular thread-screws. Table for small screws of fine angular threads. Approximate values of Holtzapffel's original screw-threads. Holtzapffel's original taps. XXIV.—HISTORY OF THE ART OF ELECTRO-METALLURGY. XXV.—DESCRIPTION OF GALVANIC BATTERIES AND THEIR RESPECTIVE PECULIARITIES.

XXVI.—ELECTROTYPE PROCESSES.
XXVII.—MISCELLANEOUS APPLICATIONS OF THE PROCESS OF COATING WITH COPPER.
XXVIII.—BRONZING.
XXIX.—DEPOSITIONS OF METALS UPON ONE ANOTHER.
XXX.—ELECTRO-PLATING.
XXXI.—ELECTRO-GILDING.
XXXII.—RESULTS OF EXPERIMENTS ON THE DEPOSITION ON OTHER METALS AS COATINGS.
XXXIII.—THEORETICAL OBSERVATIONS.

THE BELLEVUE STEREOSCOPE, WITH SLIDING FOCUS and Field Piece, accommodating all eyes, recently noticed in the SCIENTIFIC AMERICAN, is mailed, prepaid, for \$3, or with 12 Assorted Views, \$6, by HENRY CRAIG, 333 Broadway, New York. 12 8*

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.

TEMPLETON ON STEAM AND THE STEAM ENGINE.

THE PRACTICAL EXAMINATOR, OR STEAM AND THE STEAM ENGINE; with Instructive References relative thereto. Arranged for the use of Engineers, Students, and others. By William Templeton, Engineer. In one vol., 12mo., price SEVENTY-FIVE CENTS. Sent free of postage to any address.

SCALING OF BOILERS.—H. N. WINANS, NEW YORK.—Your Powder proved highly satisfactory. I think it a really good thing, and intend giving you the notice it deserves in my Journal. B. W. SEATON, Galva, Ill., Editor of the "Union." 11 2*

ANTI-INCORUSTATION. Several of my neighbors and myself used your Powder with the best results. We shall order more soon. G. SEAMAN, Kenton, Ohio. H. N. WINANS, New York. 11 2*

BOLT-HEADING MACHINE.—THE UNDERSIGNED wish to purchase the best bolt-heading machine in the country. Address S. & M. PENNOCK & CO., Kennett Square, Pa. 11 2*

HORSE-SHOE AND SHIPS' SPIKES MACHINES.—H. G. Hutchinson, Gananocque, Canada West, wishes to correspond with makers of Horse-shoe Machines and Machines for making Ships' Spikes. Address as above. 11 2*

IMPORTANT TO CARPENTERS AND WOOD WORKERS.—Talpey's Patent Self-feeding Hand-sawing Machine saves labor, timber, time, and money. This is the unanimous testimony of hundreds who are using them. Descriptive circulars sent on application to HOAG & HAMPSON, 96 Maiden Lane, New York. 11 5*

PATENT SHOVEL AND LIFTER COMBINED.—State and County Rights for sale for Davis's Patent Shovel and Lifter combined. See this paper of Nov. 21st, 1863, for cut of same. Address WM. E. DAVIS, 89 Orange street, Brooklyn, N. Y. 11 2*

TREATISE ON SUGAR MACHINERY.—INCLUDING the process of producing sugar from the cane; refining moist and loaf-sugar, home and colonial; the practical mode of designing, manufacturing and erecting the machinery, &c.; with four single and 12 large folding plates. By N. P. Burgh. 1 Vol., 4to., \$12. THE SCIENCE OF SHIP-BUILDING, considered in its relations to the laws of nature; with numerous illustrations. By H. B. Wilson. 1 Vol., 8vo., \$2.50. Imported and for sale by JOHN WILEY, 435 Broadway, New York. 11 2

IRON PLANER FOR SALE.—MANUFACTURED IN Worcester, Mass. Has been used but little. Planes 4 1/2 feet long, 26 1/2 inches wide, and 24 inches high. Address C. R. & J. O. TABEL, Salem, Ohio. 11 4*

A FULL SET OF THE PARKER WATER WHEEL Patterns for sale. Apply to JAMES T. SUTTON & CO., Franklin Iron Works, Philadelphia, Pa. 11 2*

IT IS SO.—THE BEST WASHING AND WRINGING MACHINES are under M. Van Aukens's Patents. Send for circulars to Amsterdam, N. Y. 8 5*

DRAFTING INSTRUMENTS FOR ENGINEERS, SURVEYORS, ARCHITECTS, MACHINISTS, AND SCHOOLS, EN INEERS' and Surveyors' transits, levels, compasses, and chains, Chesterman's Metallic and Steel Tape-measures, for sale, wholesale and retail, by JAMES W. QUINN & CO., 924 Chestnut street, Philadelphia. Priced and illustrated catalogues gratis. 11 10*

ROUND AND SQUARE MATCH MACHINES, Woollen Cards, Rag Pickers, &c., Manufactured by RICHARDSON & CO., Athol Depot, Mass. 10 13*

NEW YORK STATE BUSINESS DIRECTORY, 1864. CONTAINING THE NAMES, BUSINESSES AND ADDRESSES of all Merchants, Manufacturers and Professional Men throughout the State. Also lists of Insurance, Railroad and Manufacturing Companies, Banks, Post Offices, Newspapers, Academies, &c., &c. By ADAMS, SAMPSON & CO., Directories Publishers, No. 91 Washington street, Boston, Mass., and 78 State street, Albany, N. Y. 25*

CAUTION.—The Public are hereby cautioned against paying MONEY IN ADVANCE, for Advertisements, to any person representing himself to be our agent, as such persons are in no way connected with us, and should be treated as imposters. Our agents never ask for money in advance of publication. 9 5*

JUST WHAT EVERYBODY WANTS.—OUR NEW Pocket Album (for soldier and civilian), holding 16 pictures, is the cheapest and best Pocket Album ever offered to the public. Sent by mail to any address post-paid on receipt of twenty-five cents. It can be filled with pictures (16) and sent by mail to soldiers in the army, or friends anywhere in Uncle Sam's domains, at the very trifling sum of thirty cents postage. All orders promptly filled by SAMUEL BOWLES & CO., Photo Album Manufacturers, Springfield, Mass. 11 2

BAIRD'S PATENT INCORUSTATION PREVENTER, AND REMOVER, FOR STEAM BOILERS in either Salt or Fresh Water.—No invention connected with Steam Power combines so many advantages as this. THE ECONOMY IN FUEL ALONE, from its use, repays the cost of the preventive. Certificates from Engineers and owners of Steam Boilers, at sea and on shore, can be seen at the office of JAS. F. LEVIN, 23 Central Wharf, Boston, Mass. 9 10*

STEAM ENGINES AND BOILERS OF EVERY DESCRIPTION; Shafting; Pulleys and Machinists' Tools, for Sale by C. GAY, 29 Doane street, Boston, Mass. 9 20*

HEMP, FLAX AND JUTE PREPARING AND SPINNING Machinery, new and second-hand, all built on the most improved system. All kinds of Steel-pointed Wood Clothing and Leather Filletting. Hackles, Gills, and Gill Pins. Sole Agent for Grimston's Patent Self-acting Baling Machine. Also, the Excelsior Horner's Heckling Machine—producing more yield, with less labor, than any machine heretofore known. THOMAS JENNINGS, Machinery Merchant, Leeds, England. 9 6*

MORSE'S DOUBLE SCALE SELF-REGISTERING CALIPERS.—Illustrated in Vol. 10, No. 9, of SCIENTIFIC AMERICAN. One half or the whole Right for sale, very low; or a responsible party would be licensed to manufacture. Address WM. A. MORSE, Boston, Mass. 9 4*

TO WIRE DRAWERS.—I have patented and brought into practical operation, a Machine for Pointing Wire in the Coil for drawing, without the use of files or emery, and for pointing all kinds and sizes of wire where a perfect taper is required. C. JILLSON, Worcester, Mass. 9 8*

PECK'S PATENT DROP PRESS FOR FORGING PURPOSES.—All sizes manufactured by MILO PECK & CO., New Haven, Conn. 9 12*

JAMES HORNER & CO., MANUFACTURERS OF CAST Steel and Files. Orders solicited for all kinds, shapes and sizes. Office and Warehouse, 28 Chiff street, New York. 7 6m*

SELF-REGISTERING CALIPERS.—GIVING THE sizes without recourse to a rule. See engraving in SCIENTIFIC AMERICAN, of Aug. 8, 1863; 1 1/2-inch (pocket) size, at 75 cents; 2-inch size (with set screw attached to indicator), \$1.25. Now ready and will be delivered free of expense to purchasers on receipt of the price. A limited number of the 3-inch size are in process to supply demand only. Early orders will secure them. Larger sizes will be made if sufficient orders are received. Send for illustrated circulars. Liberal discount to the trade. Reliable agents wanted for all parts of the United States. KIMBALL & TALBOT, Worcester, Mass. 7 8*

BATES'S PATENT GRAVITATING STEAM AND VACUUM GAUGE.—Particular attention paid to repairing and testing Steam Gauges and other Engine Room Instruments. KEEN, BROTHER & CO., Proprietors and Manufacturers. Office—197 Greenwich street, New York City; Manufactory—40 Wayne street, Jersey City. 9 4*

AMERICAN NEEDLE COMPANY, 442 BROADWAY, New York, J. W. Bartlett, Needle manufacturers for all the Sewing Machines. Bartlett's Burnished Hand Needles. We find Bartlett's Burnished Needles a wonderful improvement over others for sewing machine or hand sewing.—MRS. DEMOREST, Hackle, Gill, Comb, Card Pins, &c., &c. 7 4*

SAVING OF FUEL TO PARTIES USING STEAM.—DAMPER REGULATORS. Guaranteed to effect a great saving in fuel and give the most perfect regularity of power. For sale by the subscribers, who have established their exclusive right to manufacture damper regulators, using diaphragms of flexible vessels of any kind. CLARK'S PATENT STEAM AND FIRE REGULATOR COMPANY, No. 5 Park Place, New York 24 28*

WM. CLEVELAND HICKS, CIVIL AND MECHANICAL Engineer, 480 Broadway, New York.

PORTABLE STEAM ENGINES OF ALL SIZES, ON hand and built to order. Send for description and our prices, and get the best, cheapest, and most economical Engine made. 5 10* HOAG & HAMPSON, 96 Maiden Lane, N. Y.

WHAT EVERY ONE OUGHT TO HAVE.—ONE OF Parr's Tool Chests, fitted with complete sets of tools, sharpened and set ready for use and packed in cases for shipping, suitable for mechanics, amateurs, farmers and boys. Prices from \$2 to \$35 each, and containing from 8 to 92 tools, according to size. To be obtained of all respectable hardware dealers or shipped on receipt of price by the manufacturer, GEORGE PARR, Buffalo, N. Y. Send for descriptive circular. 25 14*

REYNOLD'S TURBINE WATER-WHEELS.—THESE celebrated water-saving and powerful wheels, now so extensively used on limited streams, are furnished and adapted to every head and supply of water, by TALLCOT & UNDERHILL, 170 Broadway, New York. 8 5

ALCOTT'S CONCENTRIC LATHES.—FOR BROOM, Hoe, and Rake Handles, Chair Rounds, &c.—Price \$25; and all other kinds of Wood-working Machinery, for sale by S. CHILLS, No. 12 Platt street, New York. b

GUN AND PISTOL SCREWS.—COMSTOCK, LYON & CO., Manufacturers (Office, 74 Beekman street, New York), are always prepared to furnish Gun and Pistol Screws to screw, Screws to fit the U. S. Musket, Sewing Machine Screws, and Metal Screws generally, of the best quality, at short notice. 10 25

WOODRUFF'S PATENT PORTABLE BAROMETERS. The best, cheapest, and only perfectly portable Barometer. Prices \$5, \$8, \$12, \$15 and \$20. Sent to any address, and safe carriage warranted on receipt of price. Local and travelling agents wanted. Send for circulars CHARLES WILDER, Peterboro', N. H. 6 8 10 12 4*

ANILINE DYES.—ANILINE DYES OF EVERY known shade. Fuchsine, Magenta, Violet, Blue, Green, Brown, &c., made and sold by THOMAS HOLLIDAY & CO., Town Bridge Color Works, Huddersfield. 2 6 e o w

ANILINE, TOLUODINE, BENZOLE, NITRO-BENZOLE, Naphthalene, Coal and Wood Naphtha, Arsenic Acid, Carbolic, Phenic and Picric Acids, manufactured by REAR HOLLIDAY, Tar Works, Huddersfield, and 128 Holborn Hill, London. 2 6 e o w

SCIENTIFIC BOOKS AND PERIODICALS, ENGLISH French, and American, in every department, in stock and imported to order, by the single copy or in quantity—offered by JOHN WILEY, 435 Broadway, New York. Scientific Catalogues gratis on application. 7 6 e o w

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 as soon as they have been used. We wish it understood, however, that no second-hand 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, No. 37 Park Row, New York City.

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 Canada. 1 13*

CONES FOR UNITED STATES MUSKETS, ENFIELD and Austrian Rifles, and for the Shells of Rifled Cannon, promptly supplied in any quantities and warranted to pass Government inspection. Also second quality cones of above models, and cones for sporting guns and pistols. Address COLE, BROTHER & TILDEN, General Machinists, Pawtucket, R. I. N. B.—Also manufacture every description of improved Reed Machinery. 3 10*

BISULPHIDE OF CARBON, CHEMICALLY PURE. For sale in quantities from one to fifty carboys. Address DU BOIS D. PARMELEE, Chemist, 22 East 41st street, New York. 1 13*

PAGE'S PATENTED LIME KILN WILL BURN 300 bushels lime per day, with three cords wood or 1 1/2 iron coal, hard or soft. Address C. D. PAGE, Grand Rapids, Mich. 4 13*

HOLSKE & KNEELAND, MODEL MAKERS. PATENT Office Models, Working Models, and Experimental Machinery, made to order at 100 Walker street, between Center and Elm, New York. Refer to Munn & Co., SCIENTIFIC AMERICAN Office. 6t*

FAN BLOWERS—DIMPPEL'S, ALDEN'S, MCKEN ZIE'S and others, for Steamboats, Iron Works, Foundries, Smith Shops, Jewelers, &c., on hand for sale by LEACH BROTHERS, 86 Liberty street, New York. 3 13*

VULCANIZED RUBBER.—Adapted to mechanical purposes—MACHINE BELTING, STEAM PACKING, VALVES, HOSE, EMERY VULCANITE WHEELS, &c., &c. Directions, prices, &c., can be obtained on application to the NEW YORK BELTING AND PACKING COMPANY, Nos. 37 and 38 Park Row, New York. 11t

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. 6t*

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. 11t GUILD, GARRISON & CO.

18-INCH PIPE FOR SALE.—WE HAVE ON HAND about 4,200 feet of New Cast-iron Socket-pipe, 18 inch, internal diameter, in lengths to lay 12 feet each. Each piece weighs about 1,600 lbs. and has been proved at a pressure of 300 lbs. per square inch. Parties wishing to purchase the whole or a portion of the above, will please address, LOWELL GAS-LIGHT COMPANY, Lowell, Mass.—O. E. CUSHING, Agent. 7 6*

WHEELER & WILSON'S HIGHEST PREMIUM SEWING MACHINES and Foote's Patent Umbrella Stands, 605 Broadway, New York. 17 33

IRON PLANERS, ENGINE LATHES, DRILLS AND other machinists' tools, of superior quality, on hand and finishing, for sale low. For description and price address NEW HAVEN MANUFACTURING COMPANY, New Haven, Conn. 11t

BOLTS, NUTS AND WASHERS OF ALL SIZES constantly on hand for sale by LEACH BROTHERS, 86 Liberty street, New York. 3 13*

Zur Beachtung für deutsche Erfinder Die Unterzeichneten haben eine Anleihtung, die Erfinder das Verlangen 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 Mitteilungen in der deutschen Sprache machen. Schreiben von Erfindungen mit kurzen, deutlich geschriebenen Beschreibungen beliebe man zu adressieren an Munn & Co., 37 Park Row, New York. Auf der Office wird deutsch gesprochen. Befehl ist zu haben: Die Patent-Gesetze der Vereinigten Staaten. Nach 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 Nachrichten; ebenfalls auch die Rechte für Erfinder und solche, welche Patente zu wahren. Preis 20 Cts., per Blatt 25 Cts.

Patent Dish-washing Machine.

We long ago asserted that the tendency of invention was to lessen the labor of mankind, and predicted that, before a great while, the inventor would invade the precincts of the kitchen—sacred now to “Bridget”—and do as much work in half an hour as this indispensable but thankless, grumbling, and wasteful “help” accomplishes in a day. The action has already commenced; we publish herewith

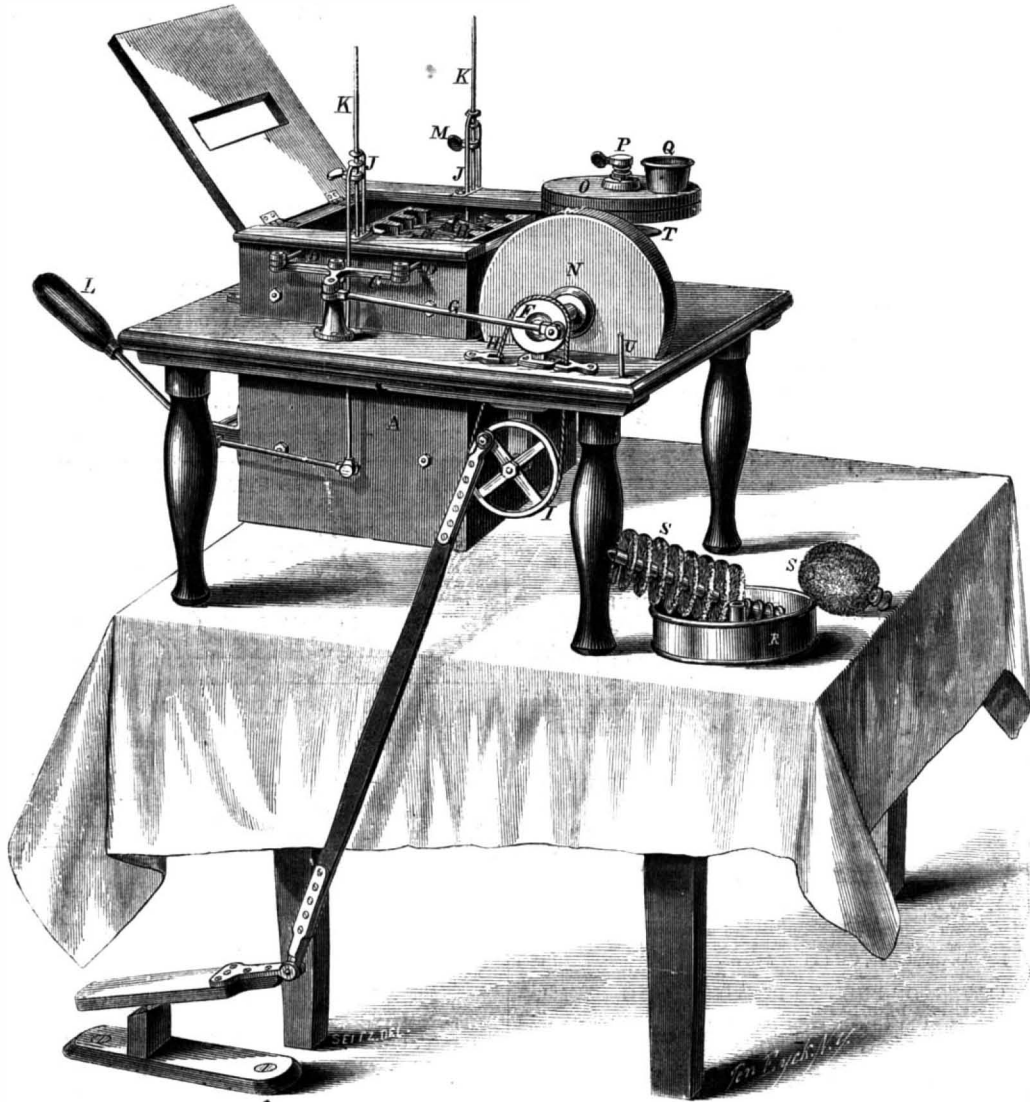
the main part of the dish-washer; there is a small bar inside the box, between the two brushes, which the plate to be washed rests upon; this bar is connected to two small rods, J, which are moved up and down on the guides, K, by working the handle, L, as if pumping water. This action moves the plate between the brushes and causes them, in connection with the hot water and suds which is to be poured in the box between and around the brushes, to thorough-

Behind the grindstone may be seen two wooden disks, O, covered on the scouring faces with leather; these disks are the knife-cleaners, and are worked by the same shaft the grindstone is on, through the action of bevel gears. The shaft the disks are on is square and they have a square hole in them; the pressure of one upon the other is regulated by a spiral spring and screw stop, P; the small cup, Q, has an opening in the bottom through which the bath-brick placed in the cup filters down upon the knives.

The pan, R, and brushes, S, are for washing lamp-chimneys, cups, bowls, &c.; the knife-scourers are taken off and the pan replaced, it rests on the plate, T, under the disk, O, and does not turn with it. The brush is stuck on the end of the square shaft by a socket made for the purpose, and a few turns of the shaft scour the chimney clean; water is poured into it of course when in use; the same process is repeated with cups and bowls, the water or drip being caught by the pan on the shaft. The small wire, U, beside the grindstone, is to hold the nut taken off the pin in the wheel that drives the stone; for when dishes alone are to be washed, it is not necessary to run the other parts, and they are disconnected. When flat dishes are washed, the lid of the box is shut down so that water may not splash out, and all grease accumulating in the box may be removed by placing a little soda in the same; this and the hot water makes a soap which will cleanse the brushes and box perfectly. Another reservoir is claimed by the patentees, wherein the brushes are nearly circular in form, and have a rotary motion and bevelled edge, whereby the water is thrown into the center of the plate and a more vigorous current of water driven through the brushes themselves. The grindstone is quite large, being ten inches in diameter.

There is also another attachment to this machine in course of construction, which is intended to wipe the plates and other articles; but as it is not completed, it is not shown here.

This machine is quite novel in its objects, and we are assured by the inventors that it has attracted the admiration of all who have seen it. It was patented on Nov. 3, 1863, through the Scientific American Patent Agency by A. M. & J. I. D. Bristol, of Detroit, Mich. State and county rights are for sale. [See advertisement in another column.] For further information address the patentees at Box 1393, Detroit, Mich.

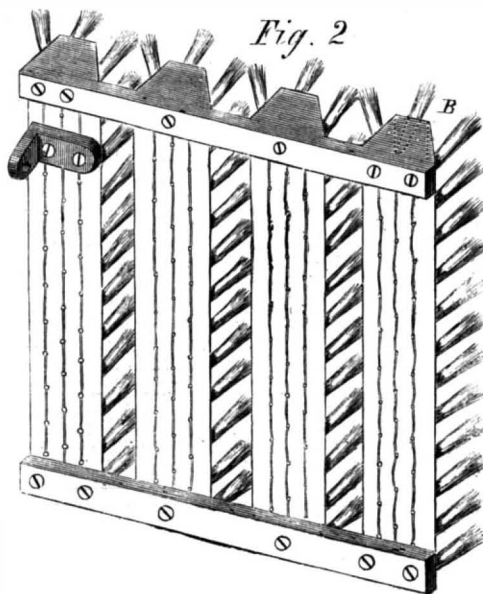


BRISTOL'S DISH-WASHING MACHINE.

an engraving representing what may be called “a family machine,” for it is designed to wash dishes, clean lamp-chimneys, and scour and sharpen knives, not at one and the same time, however, but by several operations. This machine will have charms for our lady readers, who, we are happy to know, are zealous in the cause of science and “up” to all the newest improvements (we have several patents now pending by lady inventors); for the most delicate china, at one time in danger from the clumsy handling of careless servants, can, by the aid of this machine, be thoroughly cleansed without wetting a finger. Ivory-handled knives—the terror of housekeepers when intrusted to “Bridget”—need not become yellow or loose in the handles, as they may be cleansed in this machine perfectly without wetting the ivory. There are other virtues in this machine which will appear further on in our article.

The dish-washing part consists in providing the water-tight box or case, A, which is nicely finished, with a set of brushes, B. These brushes, shown in detail at Fig. 2, move back and forth in the box in the direction of the arrows with a scrubbing action. This motion is given by the bell-crank, C; the small rods, D, are attached to the brushes, and as the crank, C, works on a center it will be seen that the brushes move as explained when the wheel, F, revolves, carrying the end of the rod, G, around with it and driving the brushes back and forth. The wheel, F, is worked by a belt, H, running over the wheel, I, which is driven by a treadle placed on the floor, the same as a sewing machine. This comprises

ly clean the ware; the small screw stop, M, on the guides, is to regulate the distance to which the plate is moved by the handle, L; there is an arm on each



end of the shaft the handle, L, is fixed to, so that both of the rods, J, are lifted together.

The grindstone, N, is turned by the same belt and wheel that moves the brushes, and it also answers for a fly-wheel to regulate the motion of the machinery

THE
Scientific American,
FOR 1864!

VOLUME X.—NEW SERIES.

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

A JOURNAL OF POPULAR SCIENCE.

In this respect it stands unrivaled. It not only finds its way to almost every workshop in the country, as the earnest friend of the mechanic and artisan, but it is found in the counting-room of the manufacturer and the merchant; also in the library and the household. The publishers feel warranted in saying that no other journal now published contains an equal amount of useful information; while it is their aim to present all subjects in the most popular and attractive manner.

The SCIENTIFIC AMERICAN is published once a week, in convenient form for binding, and each number contains sixteen pages of useful reading matter, illustrated with

TERMS OF SUBSCRIPTION.

Two volumes of the SCIENTIFIC AMERICAN are published each year, at \$1 50 each, or \$3 per annum, with correspondingly low terms to Clubs; \$1 will pay for four months' subscription. The numbers for one year, when bound in a volume, constitute a work of 832 pages of useful information, which every one ought to possess. A new volume commenced on the first of January, 1863.

Club Rates.

Five Copies, for Six Months.....	\$6
Ten Copies, for Six Months.....	12
Ten Copies, for Twelve Months.....	23
Fifteen Copies, for Twelve Months.....	34
Twenty Copies, for Twelve Months.....	40

For all clubs of Twenty and over the yearly subscription is only \$2 00. Names can be sent in at different times and from different Post-offices. Specimen copies will be sent gratis to any part of the country.

Canadian subscribers will please to remit 25 cents extra on each year's subscription to pre-pay postage.

Munn & Co., Publishers.

37 Park Row, New York.