

Table listing various mechanical parts and their prices, including Umbrella and parasol handle, Valve, balanced slide, Washers, and Ventilators.

DESIGNS. Table listing designs such as Bag or satchel, Calendar card, Fire place back, and Lamp and chandelier body.

TRADE MARKS. Table listing trade marks for Bricks, Butter, Canned goods, Cigars, Hair waves, Hardware, Knives, Liniment, Medicines, Remedies, Sheet metal, Soap, Stoves, Tobaccos, Tubing, and Wheat.

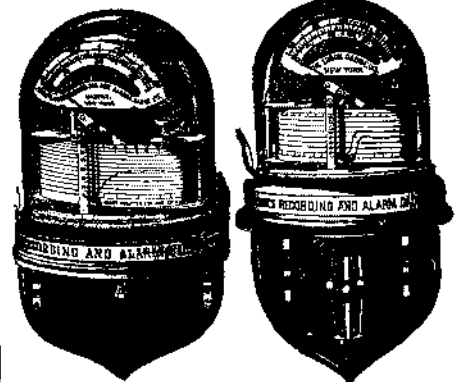
FRIEDR. BOECKER PHILIPPS SOHN & CO., HOHENLIMBURG, GERMANY, MANUFACTURERS OF Hardened Steel Strips for Corset Clasps, Hoopskirts, Feathers, and Brushes.



PERSPECTIVE AND ITS APPLICATION TO ARTISTIC DRAWING. A paper by J. Romilly Allen, Assoc. M. Inst. C. E. giving by the aid of a series of models, an explanation of the fundamental laws of perspective, and showing how far they are applicable to artistic drawing.

To Electricians, Water Boards, Manufacturers, and others using Steam, Water, Air, or Oil under Pressure.

Time and Pressure Recording Gauge and Alarm for Offices. Time, Speed, and Pressure Recording Gauge and Alarm for Factories, etc.



Edson's inventions shown in these cuts are specialties. They were adopted and used at the Centennial Exposition as Standards for Expert Testing for steam boilers, steam gauges, etc., and they are guaranteed for Accuracy and Durability.

M. B. EDSON, 77 Liberty St., New York.

Burgess' Blow Pipe Pump. Invaluable to every intelligent metal worker, for Tempering, Brazing, Hard and Soft Soldering. Gives Gentlest Flame or Hottest Blast.

WATCHMAKERS. Before buying, see the Whitcomb Lathe and the Watch Co. of Waltham.

BOOKWALTER ENGINE. Compact, Substantial, Economical, and easily managed; guaranteed to work well and give full power claimed. Engine and Boiler complete, including Governor, Pump, etc.

SPECIFICATION FOR A RAILWAY LINE. An important engineering paper, being a full copy of a recent contract made by a construction company for building a certain portion of a new railway.

PECK'S PAT. DROP PRESS. BEECHER & PECK, NEW HAVEN, CONN.

CART SADDLE PADS. Outfit with full instructions how to make them for \$35. Address F. A. EVELY, LETH, Cynthiana, Harrison Co., Ky. Lock Box 29.

A \$60 SHEPARD FOOT LATHE for sale. Almost new. Price \$50. Address A. B. WORTH, Greenport, L. I., N. Y.

AMATEUR MECHANICS. Model Engine Castings, Stationary, Locomotive, and Marine. From \$1.75 per set. J. GILBERT, 211 Tenth Ave., New York.

Rider's New and Improved COMPRESSION Hot Air Pumping Engine. New and Improved Designs. INTERCHANGEABLE PLAN MANUFACTURED BY DELAMATER IRON WORKS, C. H. DELAMATER & Co., Proprietors, No. 16 CORTLANDT ST., NEW YORK, N. Y.

FOR SALE. A quarter interest in the American Hoop Driving Machine (illustrated on page 111, vol. 49). It will do the work of ten men and do it better. Now in operation in this city. J. WOOD, JR., 242 South 3d Street, Philadelphia, Pa.

SEND TO LONDON BERRY & ORTON PHILADELPHIA FOR THE BEST BAND SAW BLADE

UNIVERSAL MILL. Pulverizes everything—barley, soft, gummy, etc. The best Clay Grinder and the best Cotton Seed Huller in the world. Portable Steam Engines, Stationary Engines, Horizontal and Upright Boilers, all sizes, on hand for immediate delivery. 10 Barclay St., N. Y. City.

GET THE BEST AND CHEAPEST. Silver Finish. J. A. FAY & CO., (Cincinnati, Ohio, U. S. A.)

PERIN BAND SAW BLADES, Warranted superior to all others in quality, finish, uniformity of temper, and general durability. The Perin Saw outwears three ordinary saws.

WORKSHOP RECEIPTS. SECOND SERIES. A reliable Handbook for Manufacturers, Mechanics, and Scientific Amateurs. 485 pages, size 7 1/2 x 5 inches. Price Two Dollars, postage prepaid.

E. & F. N. SPON, 35 MURRAY ST., NEW YORK. PROPER HORSE-SHOEING.—A PAPER of great interest to every horse owner, giving many valuable hints on the subject of horse shoeing, and showing that the animal should be shod in accordance with the work that he is expected to perform.

WANTED.—A First-Class Mechanical Draughtsman for a machine shop in Chicago. He must have had experience and be capable of figuring materials. He must also be active and not over 35 years of age.

EXPLOSIVE COMPOUNDS.—EXTRACT from an address by Sir Frederick Abel, discussing some of the important changes that have been introduced into the manufacture of explosives.

MUNSON BROTHERS. PATENT EYE AND SPRIGGLE. PATENT HOLLOW NECKED SPINDLE AND OIL TIGHT BUSH. PORTABLE MILLS. OUR MILL STONES, MILL MACHINERY, AND MILL FURNISHINGS. UTICA N. Y. U. S. A.

FIRE BRICK. THE AND CLAY RETORTS ALL SHAPES. BORGNER & O'BRIEN, 23 ST. ABOVE RACE, PHILADELPHIA.

SPEAKING TELEPHONES. THE AMERICAN BELL TELEPHONE COMPANY, W. H. FORBES, W. R. DRIVER, THEO. N. VAIL, President, Treasurer, Gen. Manager.

Alexander Graham Bell's patent of March 7, 1876, owned by this company, covers every form of apparatus, including Microphones or Carbon Telephones, in which the voice of the speaker causes electric undulations corresponding to the words spoken, and which undulations produce similar articulate sounds at the receiver.

THE HOLLAND LUBRICATOR, VISIBLE DROP. Is guaranteed to be a perfect insurance against the cutting of valves, cylinder and Governor Valves of the engine.

THE BAILOU M'FG CO., Makers of Fine Machinery, Correct Leading Screws, and Instruments of Precision; Astronomical Clocks, Mathematical and Scientific Apparatus, etc. HARTFORD, CONN.

RECENT EXPERIMENTS AFFECTING the Received Theory of Music.—An interesting paper, detailing the results of a series of experiments of Prof. Morton with Koenig's tuning forks in order to prove the incorrectness of Helmholtz's statement that beats do not coalesce into musical sounds.

SWEEPSTAKES, WITH THE ELLIS Patent Journal Box. The best Planer and Mather ever made. Planing 34 in. wide, 6 in. thick, weight 2,200 lb., \$300; planing 30 in. wide, 6 in. thick, weight 2,500 lb., \$350. Beading, Arbor and Head, extra, \$20. Sash, Door, and Blind Machinery a specialty. Correspondence solicited. Rowley & Hemanee, Williamsport, Pa.

Lincoln Safe Deposit Co. AND STORAGE WAREHOUSE, 32 TO 38 EAST 42d St. (OPPOSITE GRAND CENTRAL DEPOT). BUILDING FIREPROOF THROUGHOUT. Burglarproof Boxes and Safes Rented at from \$10 to \$300 per year.

THE BEST OF FACILITIES FOR GENERAL STORAGE. TRUNK STORAGE A SPECIALTY. BUILDING APPROVED BY FIRE COMMISSIONERS AND INSPECTOR OF BUILDINGS. THOS. L. JAMES, President.

MALLEABLE IRON CASTINGS.—A description of some of the methods employed for annealing iron castings in order to remove their brittleness. Contained in SCIENTIFIC AMERICAN SUPPLEMENT, No. 439. Price 10 cents. To be had at this office and from all newsdealers.

MALLEABLE CASTINGS FROM SPECIAL PATTERNS. THOMAS DEVLIN & CO., FINE TURNING, PLANING AND GRINDING. LENOX AVE. & AMERICAN ST. PHILA.

FOSSIL MEAL COMPOSITION, The Leading Non-Conducting Covering FOR BOILERS, PIPES, ETC. With 1/2 to 3/4 inch thickness it radiates less heat than any other covering does with 2 inches.

FOSSIL MEAL CO., 48 Cedar St., New York.

Telegraph and Electrical SUPPLIES. Medical Batteries, Inventors' Models, Experimental Work, and fine brass castings. Send for Catalogue C. E. JONES & BRO. Cincinnati, O. This important to us that you mention this paper.

SOUTHWARK FOUNDRY & MACHINE COMPANY, 430 Washington Avenue, Philadelphia, Engineers & Machinists, Blowing Engines and Hydraulic Machinery. Sole makers of the Porter-Allen Automatic Cut-Off Steam Engine.

OUR PATENT SAW MILL. Address: TAYLOR MFG. CO., Chambersburg, Pa. (Please mention this paper.)

METAL WORKING MACHINERY LATEST IMPROVEMENTS. GOULD & EBERHARDT, NEWARK, N. J.

DEAFENING FIRE AND VERMIN PROOF. Sample and Circular Free by mail. U. S. MINERAL WOOL CO., 22 Courtlandt St., N. Y.

ROOFING. For steep or flat roofs. Applied by ordinary workmen at one-third the cost of tin. Circulars and samples free. Agents Wanted. 1 NEW 31 John Street, New York.

THE BIGGEST THING OUT (new) E. NASON & CO., 120 Fulton St., New York.

SPRAY FEED WATER PURIFIER FOR STEAM BOILERS U. S. & FOREIGN PATENTS

PATENTS. MESSRS. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN, continue to examine Improvements, and to act as Solicitors of Patents for Inventors.

In this line of business they have had thirty-eight years' experience, and now have unequalled facilities for the preparation of Patent Drawings, Specifications, and the prosecution of Applications for Patents in the United States, Canada, and Foreign Countries.

A pamphlet sent free of charge, on application, containing full information about Patents and how to procure them; directions concerning Labels, Copyrights, Designs, Patents, Appeals, Reissues, Infringements, Assignments, Rejected Cases, Hints on the Sale of Patents, etc.

MUNN & CO., Solicitors of Patents, 261 Broadway, New York. BRANCH OFFICE.—Corner of F and 7th Streets, Washington, D. C.

A printed copy of the specification and drawing of any patent in the foregoing list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired, and remit to Munn & Co., 261 Broadway, New York.

Canadian Patents may now be obtained by the inventors for any of the inventions named in the foregoing list, at a cost of \$40 each. For full instructions address Munn & Co., 261 Broadway, New York. Other foreign patents may also be obtained.

Advertisements.

Inside Page, each insertion --- 75 cents a line. Back Page, each insertion --- \$1.00 a line. (About eight words to a line.) Engravings may head advertisements at the same rate per line, by measurement, as the letter press. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

Van Duzen's Pat. Loose Pulley Oiler HAS Highest Indorsements, Enviable Reputation, Scientific Pedigree. A two years' test by conservative manufacturers of national reputation has shown it to be the only perfect Lubricator for Loose Pulleys in use.

\$10 to \$1,000 buys county rights to manufacture and sell valuable invention required in every house, etc. Indorsed by highest authority. No competition. Profits 200 per cent. Specially suited woodware trades. Address J. BADGER, Rockville Centre, Long Island, N. Y.

CASP. DIETR. WALZHOIZ, HOHENLIMBURG, GERMANY, MANUFACTURER OF Hardened Steel Strips for Corset Clasps, Hoopskirts, Feathers, and Brushes.

SHEPARD'S CELEBRATED \$60 Screw Cutting Foot Lathe. Foot and Power Lathes, Drill Presses, Scrolls, Saw Attachments, Chucks, Mandrels, Twist Drills, Dogs, Collets, etc. Send for catalogue of outfits for amateurs or artisans. Address H. L. SHEPARD & CO., 341 & 343 West Front St., Cincinnati, O.

THE ELECTRICAL WORLD, The Pioneer weekly Electrical Journal of America. Edited by experts. Noted for explaining electrical principles, new inventions, etc., in simple and easy language, free from technicalities. Able original articles, handsomely and copiously illustrated. All the news and progress in Telegraphy, Telephony, and Electric Lighting. First and fullest descriptions, with cuts, of new electrical inventions. Cheapest and largest circulating journal of its class in the world. Indispensable to all interested in electrical matters. Same size as SCIENTIFIC AMERICAN. 16 pages; weekly; subscription one year, \$2.00. Foreign Countries in the Universal Postal Union, \$3.00. Your subscription is solicited. Sample copies mailed free. W. J. Johnston, Pub., 9 Murray St., New York.