

Business and Personal.

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Patentees, etc.—Correspondence is solicited from parties desiring goods manufactured from Iron or Steel, by a firm having unusually good manufacturing facilities, and who are willing to make and introduce any good articles suitable for the Hardware Trade, upon royalty or otherwise. Address, in first instance, Chas. P. Thore, 105 Fulton St., New York.

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F. Lunkenheimer's Brass Goods for Engine Builders, Automatic Oil Feeders, Glass Oil Cups, Cody Shaft Oilers, etc. Address Cincinnati Brass Works.

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Best Turbine Water Wheel, Alcott's, Mt. Holly, N. J. 1,000 2d hand machines for sale. Send stamp for descriptive price list. Forsaith & Co., Manchester, N. H.

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Cheap but Good. The "Roberts Engine," see cut in this paper, June 1st, 1878. Also horizontal and vertical engines, and boilers. E. E. Roberts, 107 Liberty St., N. Y.

Foot Lathes, Fret Saws, &c., 90 pp. E. Brown, Lowell, Ms.

Warranted best and cheapest Planers, Jointers, Universal Woodworkers, Band and Scroll Saws, etc., manufactured by Bentel, Margedant & Co., Hamilton, Ohio.

For Shafting, Pulleys, Hangers, etc., send for price list and discount to Hilles & Jones, Wilmington, Del.

Improved Steel Castings; stiff and durable; as soft and easily worked as wrought iron; tensile strength not less than 65,000 lbs. to sq. in. Circulars free. Pittsburgh Steel Casting Company, Pittsburgh, Pa.

Wm. Sellers & Co., Phila., have introduced a new injector, worked by a single motion of a lever.

Valuable Invention to users of Steam Boilers. See advt., page 318, last issue. Address U. S. Automatic Stoker Co., No. 2 Chestnut St., Philadelphia, Pa.

Presses, Dies, and Tools for working Sheet Metals, etc. Fruit and other Can Tools. Bliss & Williams, Brooklyn, N. Y., and Paris Exposition, 1878.

For Shafts, Pulleys, or Hangers, call and see stock kept at 79 Liberty St. Wm. Sellers & Co.

Improved Wood-working Machinery made by Walker Bros., 73 and 75 Laurel St., Philadelphia, Pa.

The great Wheelock Engine, which furnishes the power to the machinery of the American Exhibit at the Paris Exposition this year, is lubricated by Patent Lubricene and Cups. Our exhibit will equal that which we made in Philadelphia in 1876. R. J. Chard, 134 M. Lane, N. Y. city.

Friction Clutches for heavy work. Can be run at high speeds, and start gradual. Safety Elevators and Hoisting Machinery a specialty. D. Frisbie & Co., New Haven, Ct.

The only genuine Geiser Self-regulating Grain Separator. Address the Geiser Manuf. Co., Waynesboro' Franklin Co., Pa.

We ches.—The Lipsey "Reliable" is strongest and best. Six inch sample by mail 60 cents. Roper Caloric Engine Manufacturing Co., 91 Washington St., N. Y.

The Cameron Steam Pump mounted in Phosphor Bronze is an indestructible machine. See ad. back page.

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John T. Noye & Son, Buffalo, N. Y., are Manufacturers of Burr Mill Stones and Flour Mill Machinery of all kinds, and dealers in Dufour & Co.'s Bolting Cloth. Send for large illustrated catalogue.

For the best Bone Mill and Mineral Crushing Machines—five sizes, great variety of work—address Baugh & Sons, Philadelphia, Pa.

Diamond Drills, J. Dickinson, 64 Nassau St., N. Y. Machine Cut Brass Gear Wheels for Models, etc. (New List.) D. Gilbert & Son, 212 Chester St., Phila., Pa.

Boilers & Engines cheap. Lovegrove & Co., Phila., Pa. Address Star Tool Co., Providence, R. I., for Screw Cutting Engine Lathes of 13, 15, 18, and 21 in. swing.

Skinner Portable Engine, Improved, 2 1/2 to 10 H. P. Skinner & Wood, Erie, Pa.

Notes & Queries

(1) E. A. C. asks: Which side of a belt should run next to the pulley, the finished or flesh side? A. In practice the finished side is found to give the least slip.

(2) G. M. K. & Co. ask: 1. How much water will 1 lb. of anthracite coal convert into steam at 70 lbs. pressure, in an ordinary boiler? A. 8 or 9 lbs. 2. How much steam will 7,000 feet of 1 inch pipe, in lengths of 60 feet, connected with 4 inch supply pipes, condense in an atmosphere of 125°? A. While an exact determination of this can only be made by experiment, you can calculate it approximately on the assumption that each square foot of the pipe will radiate 2.9 units of heat per hour for each degree in difference between internal and external temperature.

(3) W. J. C. asks: How many drops of water are there in a pint. A. At 60° Fah., about 7,680.

What is the volatile liquid generally used in making ice, and is it injurious to solder, tin plate, copper, zinc, and vegetable tissues? A. Machines employing anhydrous sulphurous oxide, ammonia, or the light hydrocarbon oils or ethers, have, we believe, met with the greatest success. None of these liquids have action upon the metals mentioned when properly managed. On vegetable tissues, gums, etc., the former have the least action.

What is the thickness of a soap bubble, say of 4 inches in diameter? A. The film is not of constant thickness; it varies between 0.0001 and 0.000017 of an inch.

(4) J. L. F. asks: What will render timber fireproof? A. Saturate it as far as may be with strong hot aqueous solutions of sodium tungstate (crude), silicate (water glass), or sulphate; ammonium sulphate has also been used. Wood thus prepared is not ignited by sparks or transient contact of flame. Unaltered woody fiber cannot, however, be rendered, by these or other simple means, incombustible.

(5) M. V. O. asks: How are the steel faces fastened on cast iron anvils and malleable iron scissors? A. The faces are put in the mould, and the melted cast iron is allowed to run through the mould until the steel faces are welding hot. Then the flow of metal through the mould is stopped and the casting poured, welding the steel to the iron.

Table of Communications Received, listing various topics and contributors.

Table of Official Index of Inventions for which Letters Patent of the United States were granted in the week ending April 9, 1878, and each bearing that date.

A complete copy of any patent in the annexed list, including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

Table of Index of Inventions, listing various patents and their inventors.

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Table of Trade Marks and Designs, listing various marks and design numbers.

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