

Business and Personal.

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To RAILWAY COMPANIES AND OTHERS, requiring data concerning Water, Steam, Air, or Oil, in Pipes, or other reservoirs, when under pressure, also RECORDS OF SPEED OF Machinery, Railway trains, Dynamoes, etc., etc.

For Sale.—The rights for foreign patents in a first rate profitable new invention. Patent allowed here.

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Wanted.—Boat builders or capitalists to apply and practically test a new canal boat propeller.

Am. Twist Drill Co., Meredith, N. H., make Pat. Chuck Jaws, Emery Wheels, Grinders, automatic Knife Grinders.

Brass & Copper in sheets, wire & blanks. See ad. p. 30.

The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 20,000 Crank Shafts and 15,000 Gear Wheels.

The Improved Hydraulic Jacks, Punches, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Gear Wheels for Models (list free); Experimental Work, etc. D. Gilbert & Son, 212 Chester St., Phila., Pa.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 30.

Cotton Belting, Rubber Belting, Leather Belting, Linen Hose, Rubber Hose. Greene, Tweed & Co., New York.

Fine Taps and Dies in Cases for Jewelers, Dentists, Amateurs. The Pratt & Whitney Co., Hartford, Conn.

20,000 Duc Spherical Elevator Buckets, sizes 3 1/2 to 17 inches, constantly on hand. Telegraphic orders filled.

First Class Engine Lathes, 30 inch swing, 8 foot bed, now ready. F. C. & A. E. Rowland, New Haven, Conn.

Steam Pumps. See adv. Smith, Vaile & Co., p. 30.

Straight Line Engine Co., Syracuse, N. Y. See p. 29.

Contracts taken to manuf. small goods in sheet or cast brass, steel, or iron. Estimates given on receipt of model.

Brush Electric Arc Lights and Storage Batteries. Twenty thousand Arc Lights already sold.

Engines, 10 to 50 horse power, complete, with governor, \$250 to \$550. Satisfaction guaranteed.

Best Squaring Shears, Timers', and Canners' Tools at Niagara Stamping and Tool Company, Buffalo, N. Y.

Lathes 14 in. swing, with and without back gears and screw. J. Birkenhead, Mansfield, Mass.

Five foot planers, with modern improvements. Geo. S. Brown & Co., 120 South Iron Works, Hartford, Conn.

The Best.—The Duerber Watch Case.

If an invention has not been patented in the United States for more than one year, it may still be patented in Canada.

Farley's Directories of the Metal Workers, Hardware Trade, and Mines of the United States. Price \$3.00 each.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, polishing compositions, etc.

Lists 29, 30 & 31, describing 4,000 new and 2d-hand Machines, ready for distribution.

For Power & Economy, Alcott's Turbine, Mt. Holly, N. J. "Abbe" Bolt Forging Machines and "Palmer" Power Hammers a specialty.

Railway and Machine Shop Equipment.

Send for Monthly Machinery List to the George Place Machinery Company, 121 Chambers and 103 Reade Streets, New York.

25' Lathes of the best design. G. A. Ohl & Co., East Newark, N. J.

"How to Keep Boilers Clean." Book sent free by James F. Hotchkiss, 84 John St., New York.

Wanted.—Patented articles or machinery to make and introduce. Gaynor & Fitzgerald, New Haven, Conn.

Water purified for all purposes, from household supplies to those of largest cities, by the improved filters manufactured by the Newark Filtering Co., 177 Commerce St., Newark, N. J.

Latest Improved Diamond Drills. Send for circular to M. C. Bullock Mfg. Co., 80 to 88 Market St., Chicago, Ill.

Ice Making Machines and Machines for Cooling Breweries, etc. Patent Artificial Ice Co. (Limited), 142 Greenwich Street. P. O. Box 3083, New York city.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.

Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y.

Split Pulleys at low prices, and of same strength and appearance as those of the best makers.

Supplement Catalogue.—Persons in pursuit of information on any special engineering, mechanical, or scientific subject, can have catalogue of contents of the SCIENTIFIC AMERICAN SUPPLEMENT sent to them free.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 37.

Curtis Pressure Regulator and Steam Trap. See p. 12.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 14.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 12.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 323, Pottsville, Pa. See p. 14.

Lightning Screw Plates, Labor-saving Tools, p. 14.

Soapstone Packing, Empire Gum Core, and all kinds of Engine Packing. Greene, Tweed & Co., New York.

NEW BOOKS AND PUBLICATIONS.

NAVAL BATTLES, ANCIENT AND MODERN. By Edward Shilpen. J. C. McCurdy & Co., Philadelphia, Pa.

This is a large octavo of more than 700 pages and containing a large number of illustrations. In a preface the compiler says that the collection is intended to present, in a popular form, an account of many of the important naval battles of all times, as well as some combats of squadrons and single ships.

Notes & Queries

HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at the office Price 10 cents each.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) J. R. M. Writes: I am about to make some experiments in screw propulsion, and would like information on the following: 1. All other things being equal, which has shown the best results, a two, three, or four bladed screw? A. The choice must depend upon size of propeller, velocity at which it is run, and the fineness of model of the vessel.

(2) H. M. P. asks: 1. Will increasing the speed of a thrashing engine from 120 revolutions per minute to 175, by enlarging separator pulley, increase power of engine, and will it save fuel? Engine 7 x 12, rated 10 horse. A. It will increase the power of the engine carrying the same steam, but will burn more fuel.

(3) A. S. To make one gallon of the paint for a blackboard, take 10 oz. of pulverized and sifted pumice stone, 6 oz. powdered rotten stone (or Infusorial silica), 3/4 lb. of good lampblack, and alcohol enough to form with these a thick paste, which must be well rubbed and ground together. Then dissolve 14 oz. of

shellac in the remainder of the gallon of alcohol by digestion and agitation, and finally mix this varnish and the paste together. It is applied to the board with a brush care being taken to keep the paint well stirred so that the pumice stone will not settle.

(4) A. J. T. asks how to reproduce faded photographs? A. The following method is simple and in most cases quite effective: Put the card in warm water until the paper print may be removed from the card backing without injury.

(5) E. P. asks how to produce various bronze tints (or bronzes) on iron, zinc, copper, and brass? A. Dissolve 4 oz. hyposulphite of soda in 1 1/2 pints water, and add a solution of 1 oz. lead acetate in 1 1/2 pints of water.

(6) A. Y. F. writes: Please inform me how to make a good enamel for carriage tops. A. Use: Asphaltum 150 parts. Boiled oil 3. Turpentine 33. Benzine 20.

(7) A. W. H.—Otto of roses is made by distillation. The process is described very thoroughly in articles on page 924 of SCIENTIFIC AMERICAN SUPPLEMENT, No. 58, also on page 390, of SCIENTIFIC AMERICAN SUPPLEMENT, No. 275.

(8) C. P. writes: I have a tin roof, and would like to know if it would be best to paint it. If so, what kind of paint shall I use? A. Paint your roof with red oxide of iron, or Prince's metallic paint and boiled linseed oil.

(9) J. H. M. asks: Will you please tell me through the SCIENTIFIC AMERICAN what paper lagging is put on to iron pulleys with? A. Roughen the surface of the pulley and fasten the paper with rubber cement.

(10) J. G. asks how to compress common salt into a solid mass. A. Melt it, and pour it in suitable forms when in a molten condition. Salt melts at a red heat and is best heated in a covered vessel; and as it volatilizes at a higher temperature, there will probably be a loss of salt.

(11) G. J. E. asks: How can I cement glass and metal? A. Mix 2 ounces of thick solution of glue with 1 ounce linseed oil varnish, or three-fourths of an ounce Venice turpentine; boil them together, stirring them until they mix as thoroughly as possible.

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July 3, 1883,

AND EACH BEARING THAT DATE.

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