

Business and Personal.

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Patent Calendar for sale, or manufacture upon royalty. Gives the days, months, and years. Stamps and dies to manufacture with.

A Valuable Patent.—McDonald's Pocket Hanger for sale, or lease on royalty for Canada, Great Britain, and France.

Julius Caesar was accustomed to read and write, listen and dictate at the same time. In one of these an Esterebrook Steel Pen would have aided him wonderfully.

Wanted Immediately.—A first-class Steel Letter Cutter. H. W. Gordon, Lynn, Mass.

Two or three first-class journeymen machine pattern makers can find steady employment with Poole & Hunt, Baltimore, Md.

Small articles in sheet or cast brass made on contract. Send models for estimates to H. C. Goodrich, 66 to 72 Ogden Place, Chicago, Ill.

Automatic Planer, Knife Grinders, best Solid Emery Wheels, Machine run Emery Belts, etc. All warranted satisfactory.

See Bentel, Margedant & Co.'s adv., page 61.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Diamond Engineer, J. Dickinson, 64 Nassau St., N. Y.

50,000 Sawyers wanted. Your full address for Emerson's Hand Book of Saws (free). Over 100 illustrations and pages of valuable information.

Gould & Eberhardt's Machinists' Tools. See adv., p. 62.

Engines, 10 to 50 H. P., \$250 to \$500. See adv., p. 61.

Barrel, Key, Hoghead, Stave Mach'y. See adv. p. 61.

For Heavy Punches, etc., see illustrated advertisement of Hilles & Jones, on page 61.

Vertical Engines, varied capacity. See adv., p. 61.

Hand and Power Bolt Cutters, Screw Plates, Taps in great variety. The Pratt & Whitney Co., Hartford, Ct.

For best low price Planer and Match'er, and latest improved Sash, Door, and Blind Machinery, Send for catalogue to Rowley & Hermande, Williamsport, Pa.

Catechism of the Locomotive. 625 pages, 250 engravings. Most accurate, complete, and easily understood book on the Locomotive. Price \$2.50.

The only economical and practical Gas Engine in the market is the new "Otto" Silent, built by Schleicher, Schumm & Co., Philadelphia, Pa.

The Porter-Allen High Speed Steam Engine. South-work Foundry & Mach. Co., 430 Washington Ave., Phil. Pa.

The Sweetland Chuck. See illus. adv., p. 62.

Improved Skinner Portable Engines. Erie, Pa.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Also manufacturers of Solomon's Parallel Vise, Taylor, Stiles & Co., Riegelsville, N. J.

Electric Lights.—Thomson Houston System of the Arc type. Estimates given and contracts made. 631 Arch, Phil.

Lightning Screw Plates, Labor-saving Tools. p. 62.

Magic Lanterns, new model; best made, small and cheap. Wm. T. Gregg, 77 Fulton street, New York.

See New American File Co.'s Advertisement, p. 46.

Combination Roll and Rubber Co., 68 Warren street, N. Y. Wringer Rolls and Moulded Goods Specialties.

For Sale.—New High Speed Engine, 10x10; will indicate 50 horse power; price complete, \$250. S. M. York, Cleveland, O.

Draughtsman's Sensitive Paper. T. H. McCollin, Phila., Pa. For Mill Mach'y & Mill Furnishing, see illus. adv. p. 44.

Steam Pumps. See adv. Smith, Vaile & Co., p. 46.

Woodwork'g Mach'y. Rollstone Mach. Co. Adv., p. 28.

The Berryman Feed Water Heater and Purifier and Feed Pump. I. B. Davis' Patent. See illus. adv., p. 29.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 29.

Bostwick's Giant Riding Saw Machine, adv. page 28.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co., Box 423, Pottsville, Pa. See p. 29.

4 to 40 H. P. Steam Engines. See adv. p. 28.

Pure Water furnished Cities, Paper Mills, Laundries, Steam Boilers, etc., by the Multifold System of the Newark Filtering Co., 177 Commerce St., Newark, N. J.

Red Jacket Adjustable Force Pump. See adv., p. 13.

Malleable and Fine Gray Iron Castings to order, by Capital City Malleable Iron Co., Albany, N. Y.

"Abbe" Bolt Forging Machines and "Palmer" Power Hammers a specialty. Forsaith & Co., Manchester, N. H.

List 23, describing 3,600 new and second-hand Machines, now ready for distribution. Send stamp for same. S. C. Forsaith & Co., Manchester, N. H., and N. Y. city.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, polishing compositions, etc. Complete outfit for plating, etc. Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

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

First Class Engine Lathes, 20 inch swing, 8 foot bed, now ready. F. C. & A. Rowland, New Haven, Conn.

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

Jas. F. Hitchkiss, 84 John St., N. Y.: Send me your free book entitled "How to Keep Boilers Clean," containing useful information for steam users & engineers. (Forward above by postal or letter; mention this paper.)

Steel Stamps and Pattern Letters. The best made. J. F. W. Dorman, 21 German St., Baltimore. Catalogue free.

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

For Power & Economy, Alcott's Turbine, Mt. Holly, N. J. Presses & Dies (fruit cans) Ayar Mach. Wks., Salem, N. J.

Wood Working Machinery of Improved Design and Workmanship. Cordesman, Egan & Co., Cincinnati, O.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocum & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other (an) Tools. E. W. Bliss, Brooklyn, N. Y.

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.

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.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

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 this 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) H. L. writes: 1. Please let me know how to make a top which is kept in motion by electricity? A. You will find an illustrated description of the electrical gyroscope on p. 335, No. 22, vol. xxxviii, SCIENTIFIC AMERICAN.

(2) H. W. asks: 1. What proportions of nitric and muriatic acids are strongest for dissolving gold? A. Use a mixture of 3 parts hydrochloric (muriatic) and 1 part nitric acids.

(3) N. L. T. asks: Of what is the substance composed that is used by frame makers for decorating frames? Its appearance is similar to putty.

(4) C. T. asks: Will a given volume of steam raise the same quantity of water by means of an injector as it would if applied to the piston of a pumping engine? Or does steam through the jet of an injector exert its full mechanical energy on the water before being condensed, the full energy being that due to its initial or boiler pressure added to its expansive power between the initial pressure and the pressure of the head of water against which the injector works?

(5) D. C. W. asks: Can you recommend anything special to me, through your SCIENTIFIC AMERICAN, to keep mice out, jellies, jams, etc., from working and spoiling? A. You should try Barf's new antiseptic, boric glyceride. See SUPPLEMENT, No. 332.

(6) H. M. G. writes: In a 16 foot 35 horsepower boiler, would you advise filling up behind the bridge wall and carrying the inverted arch back from throat of the bridge wall to the end of the boiler?

(7) H. S. writes: Myself and friend have got into an argument, from which we have decided you shall help us out. Dispute is this: I say one ton of coal coked is capable of making one ton of pig iron from ore that contains seventy-five per cent iron.

(8) J. B. asks: Which are the best and most recent publications considering the manufacture of wines from gooseberries, currants, rhubarb, etc.?

(9) J. H. M. writes: I am about to make an air pump, and I wish to make it as perfect an exhaustor as possible. Would cast nickel make good valves, and would it be proper to have the barrel of cast brass lined with nickel?

German silver, which if made hard will make excellent, but expensive, working parts. Ordinary beeswax is used in the ground ball joint.

(10) D. A. Y. writes: A friend and I have a dispute as to whether pure limestone, ground to the fineness of flour, is better than lime for a fertilizer.

(11) W. H. K. asks: How can I best make a filter for filtering roof rain water for drinking only—say two quarts per day? How can I keep it? Shall I filter and then keep, or filter slowly? Shall I keep in stone or wood?

(12) A. W. G. writes: Would like you to inform me through the columns of your paper how I can make the cement used for fastening the rubber tubes on a bicycle.

(13) L. McN. writes: I wish to produce an intense heat in a small blast furnace. If I use coke and a blast of oil (in the form of an atomizer for fuel, will it produce the desired result?

(14) F. B. writes: 1. I am building a post fence in alkali soil. The earth ends decay very fast. A good cheap preventive would be in demand.

(15) S. R. W. writes: I would like to know what is the best available application (paint or other wise) to the outside of a galvanized iron boat, to protect it from the corrosive action of salt water, and also, perhaps, from barnacles.

(16) J. G. M. writes: In No. 23 of the SCIENTIFIC AMERICAN I find an article on crystalline glass, which reminds me of some of my own experiments. One day (in the winter) I was staining some boards imitation walnut with a water stain.

Table with 2 columns: Name of inventor and date of patent. Includes entries like Ash barrel and coal hod cover, J. A. Brown... 260,364; Atomizer, T. E. Studley... 260,505; Auger, W. L. Parmelee... 260,497.