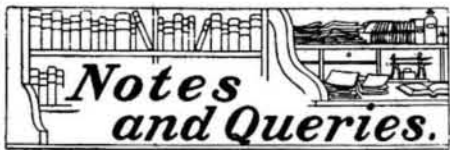


Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry.

MUNN & CO.

Marine Iron Works. Chicago. Catalogue free. Inquiry No. 4039.—For dealers in small furnishings or model parts, cams, small springs, gearing, etc. DRAFTSMAN WANTED.—Excellent opening. Engineering Agency, Chicago. Inquiry No. 4040.—For parties engaged in making steel struts of original design. AUTOS.—Duryea Power Co., Reading, Pa. Inquiry No. 4041.—For makers of oil pumps for gasoline motors. For hoisting engines. J. S. Mundy, Newark, N. J. Inquiry No. 4042.—For makers of wood-distilling apparatus. "U. S." Metal Polish. Indianapolis. Samples free. Inquiry No. 4043.—For manufacturers of furnaces. Coin-operated machines. Willard, 284 Clarkson St., Brooklyn. Inquiry No. 4044.—For a 5 h. p. waterturbine and dynamo for same. Blowers and exhausters. Exeter Machine Works, Exeter, N. H. Inquiry No. 4045.—For makers of acetylene gas generators. Handle & Spoke Mchy. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O. Inquiry No. 4046.—For makers of egg cases fillers and testers. Mechanics' Tools and materials. Net price catalogue. Geo. S. Comstock, Mechanicsburg, Pa. Inquiry No. 4047.—For a cheap split basket with stiff handles. Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt. Inquiry No. 4048.—For manufacturers of hard fiber, also for makers of automatic or lever chucks for use on turret lathes. PATENT FOR SALE.—A. L. & O. Sovelius' Twine Holder. Price, \$6,000. Hancock, Mich. Inquiry No. 4049.—For a machine for pasting and rolling together pulp board. WANTED.—Machinists for light work. Steady employment. W. W. Oliver Mfg. Co., Buffalo, N. Y. Inquiry No. 4050.—For makers of ornamental iron fence for lawns and cemeteries. Let me sell your patent. I have buyers waiting. Charles A. Scott, Granite Building, Rochester, N. Y. Inquiry No. 4051.—For wholesale dealers in hardware, farm implements, machinery and mechanical tools of every description. Inventions developed and perfected. Designing and machine work. 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MONEY-MAKING PATENT.—I will sell my patent on hat fastener, which will sell rapidly when introduced. Geo. Schmitt, Monongahela Club, Pittsburg, Pa. Inquiry No. 4057.—For catalogues of agricultural implements, novelties, special tools, etc., for export trade. The celebrated "Hornsbys-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York. Inquiry No. 4058.—For a printing machine for use in printing dies in caps, etc. The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$5. Munn & Co., publishers, 361 Broadway, N. Y. Inquiry No. 4059.—For makers of white cork paint for iron castings, and information as to how to apply same. FOR SALE.—3 h. p. marine gasoline engine. Patterns for 3 h. p. and 6 h. p. and reversing propeller. Drawings for reversing propeller. Drawings for 3 h. p. and 6 h. p. and drawings for 5 h. p. and 10 h. p. Mr. John La Force, 3 Ketchum St., Rochester, N. Y. Inquiry No. 4060.—For a steel hull 30 feet long, flat bottom, to draw not over ten inches loaded, propelled by stern wheel driven by gasoline engines. Wanted—Revolutionary Documents, Autograph Letters, Journals, Prints, Washington Portraits, Early American Illustrated Magazines, Early Patents signed by Presidents of the United States, Valentine's Manuals of the early 40's. Correspondence solicited. Address C. A. M., Box 775, New York. NOTICE TO TUNNEL CONTRACTORS. Sealed proposals marked "Bid for Tail Race Tunnel" will be received by the undersigned until noon, May 11, 1903, for the construction of a tail race tunnel for the Toronto and Niagara Power Co., of Toronto, Ontario. Plans and specifications for this work are on file, and can be seen after March 30, 1903, at the company's offices at Home Life Building, Toronto, Ontario, and Niagara Falls, Ontario, or office of F. S. Pearson, No. 29 Broadway, New York, Room 220. The right is reserved to reject any or all proposals. Frederic Nicholls, Vice-President and General Manager, Home Life Building, Toronto, Ontario. WANTED.—A six or eight block iron frame draw bench for drawing wire from No. 7 to No. 12; give full description. Address C. B., Box 775, New York.



HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication. References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all either by letter or in this department, each must take his turn. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(8935) T. S. asks: In a dispute I contend that substances such as iron, the heavier woods, i. e., those that have a specific gravity decidedly greater than water, will sink to the bottom of the ocean, even to its greatest sounded depths. I contend that this would be the case with iron were that depth 20 miles. I take my stand on the very slight compressibility of water. A. Water is compressible to only one twenty-thousandth part for one atmosphere, or 15 pounds per square inch. Sea water is still less compressible, its coefficient being 44 millionths for one atmosphere. At the depth of one mile it will be but a one-hundredth part greater. Water does not increase much in density from the surface to the bottom of the ocean, even at its greatest depths. Any article which will sink at the surface of the ocean will continue to sink till it rests upon the bottom. There is no level at which sunken ships and men float and cease to sink.

(8936) A. H. P. asks: The lower half of the wires in an upright piano have rusted, so that one wire broke. What treatment can be given the wires to remove the rust and prevent further damage? Would a box of charcoal or lime set inside be of any service? A. Kerosene oil is one of the best articles to remove rust from iron or steel. If the wires of your piano are wiped over occasionally with it, they will not rust. Charcoal would not be of any service to prevent rust, and lime would be of little service.

(8937) O. D. asks: What composition is used to make the Welsbach gaslight mantles? A. A fabric of cotton is woven of the desired form, and this is impregnated by repeated dipping in a solution of thorium and cerium nitrates. On ignition, the cotton burns away and the nitrates are converted into oxides, which give the intense luminosity. Other nitrates of the rare earths, as also of zirconium and magnesium, have been used; but the thorium-cerium mixture gives the best results. A ratio of 99 per cent thorium and 1 per cent cerium has been found to give the maximum luminosity.

(8938) F. P. C. says: Please advise me which side of a 500-volt railway generator is connected to the rails. A. The negative side of a street railway generator is connected to the rails, and the positive side to the trolley wire. See Tooter's "Electrical Engineer's Pocket Book," page 508, etc.

(8939) H. P. W. asks: If I run the exhaust pipe of a gasoline engine into a well lined with brick, and run a pipe from top of well into open air, what would be the exhaust pressure at top of pipe out of well? Well 4 feet in diameter, 8 feet deep; engine cylinder 11x18 inches; revolutions 200 per minute; engine has 65 pounds compression. Or, if we assume that the exhaust is relieved at 50 pounds pressure at exhaust port, what would be the actual and theoretical pressure at end of pipe leading out of well? A. The back pressure of your exhaust pipe at its end, as you describe, will depend on the size of the pipe. It should be no more than three pounds per square inch if the pipe from the well is one size larger than the engine exhaust pipe.

(8940) I. L. G. asks: Is there any kind of a composition or solder to solder copper and cast iron together, or is there any way to prepare cast iron so that it can be united with copper? A. Cast iron and other metals may be soldered together by first tinning the cast iron surface. This may be done on small work by a tinsmith's copper and pure tin. The cast-iron surface must be scraped with a file and rubbed with sal-ammoniac, when the tin may be rubbed on the surface with the hot copper.

(8941) C. P. L. asks for some formula for a fireproof cement suitable for setting earthenware tiles around a fireplace. Portland cement and cement and mortar, will not stand the action of the fire. A fire clay mixed with silicate of soda solution has given good satisfaction: only as much should be made up at a time as can be used immediately, as it has a strong tendency to harden. A mixture of equal parts of powdered peroxide of manganese and zinc white, mixed with silicate of soda solution, is also very good. Use immediately.

(8942) B. H. G. asks: How much power will it require to run a 1 horse power electric generator? And if a generator can be run by a water motor? The address of a house that handles generators? A. One and a quarter actual horse power will run a one horse power generator. Water power is proper, and the most economical wherever available.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending April 7, 1903, AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing various inventions and their patent numbers, including Agricultural purposes, motor tractor for, Air and gas engine, J. B. O'Donnell, 724,606, and many others.

Table listing various inventions and their patent numbers, including Clothes line prop attachment, F. G. Kliman, 724,713, and many others.

(Continued on page 305)