

Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

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

The Chester Steel Castings Co., office 407 Library St., Philadelphia, Pa., can prove by 20,000 Crank Shafts and 15,000 Gear Wheels, now in use, the superiority of their Castings over all others. Circular and price list free.

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. Mention this paper.

Pays well on small investment.—Stereopticons, Magic Lanterns, and Views illustrating every subject for public exhibitions. Lanterns for colleges, Sunday-schools, and home amusement. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., N. Y.

Calcium Light Apparatus and Stereopticons at low prices. C. Beseler, 218 Centre Street, New York.

Design Patent for Sale.—Handsome Hanging Vase. Address Mrs. Rose L. Allen, Romolo, Centre Co., Pa.

From Galveston City Railroad Co., }
Galveston, Sept. 22, 1882.

To H. W. Johns Mfg Co., 81 Maiden Lane, N. Y.
Gentlemen: By mail of this date I send you photograph of our Beach Pavilion on which was used your Liquid Paints, and I am pleased to advise you that same have given perfect satisfaction.

Very respectfully, W. H. Sinclair, President.

Paragon Drawing Paper is the only reliable. Send for samples. Keuffel & Esser, 127 Fulton St., New York.

Garmore's Artificial Ear Drums for relief of partial or entire deafness. Invented by one who has been deaf thirty years. Simple and scientific in construction; not observable in use. Send for circular. John Garmore, S. W. cor. 5th and Race Sts., Cincinnati, O.

American Fruit Drier. Free Pamphlet. See ad., p. 237.

Fire Brick, Tile, and Clay Retorts, all shapes. Bornberg & O'Brien, M'Frs, 23d St., above Race, Phila., Pa.

Drop Forgings of Iron or Steel. See ad., page 236.

For best Portable Forges and Blacksmiths' Hand Blowers, address Buffalo Forge Co., Buffalo, N. Y.

Brass & Copper in sheets, wire & blanks. See ad. p. 236.

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

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

Eagle Anvils, 10 cents per pound. Fully warranted.

Bostwick's Giant Riding Saw Machine, adv., page 238.

Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 236.

Pure Nickel Anodes, Nickel Salts, and all Polishers' Supplies. Greene, Tweed & Co., New York.

For Mill Mac'by & Mill Furnishing, see illus. adv. p. 236.

See New American File Co.'s Advertisement, p. 238.

Renshaw's Ratchet for Square and Taper Shank Drills. The Pratt & Whitney Co., Hartford, Conn.

Woodwork'g Mach'y. Rollstone Mach. Co. Adv., p. 238.

Trevor's Patent Key Seat Cutter. Trevor & Co., Lockport, N. Y. See page 237.

Wanted.—Liberal inducements and facilities for locating large iron works. Address Iron, Manchester, N. H.

Schools open.—Send for Catalogue of Drawing Materials. Keuffel & Esser, New York.

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

50,000 Emerson's Hand Book of Saws. New Edition. Free. Address Emerson, Smith & Co., Beaver Falls, Pa.

Cope & Maxwell Mfg Co.'s Pump adv., page 220.

The Berryman Feed Water Heater and Purifier and Feed Pump. L. B. Davis' Patent. See illus. adv., p. 220.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 222.

Red Jacket Adjustable Force Pump. See adv., p. 220.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 220.

Common Sense Dry Kiln. Adapted to drying of all material where kiln, etc., drying houses are used. See p. 222.

4 to 40 H. P. Steam Engines. See adv. p. 220.

Collection of Ornaments.—A book containing over 1,000 different designs, such as Crests, Coats of Arms, Vignettes, Scrolls, Corners, etc., will be mailed free on receipt of \$1. Address Palm & Fechteler, 6 West 14th Street, New York.

Drop Forgings. Billings & Spencer Co. See adv., p. 205.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 205.

Lightning Screw Plates, Labor-saving Tools. p. 206.

Engine, 10s to 50 horse power, complete, with governor, \$250 to \$550. Satisfaction guaranteed. Six hundred in use. For circular address Heald & Morris (Drawer 127), Baldwinville, N. Y.

Improved Skinner Portable Engines. Erie, Pa.

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

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.

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. E. 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. Hotchkiss, 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.

Rubber Hose, Linen Hose, lined and unlined, all sizes. Greene, Tweed & Co., 118 Chambers St., New York.

For Power & Economy, Alcott's Turbine, Mt. Holly, N. J.

Presses, Dies, Tools for working Sheet Metals, etc. Fruit and other Can 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. The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physical science. Address Munn & Co. Publishers, New York.

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

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

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

Presses & Dies (fruit cans) Ayar Mach. Wks., Salem, N. J.

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

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) J. G. M. writes: I have often heard said by men who run machinery (flour mills, for instance) by water power, that (as they express it) the water is heavier at night than in the daytime, and that they are obliged to let the water-gate down at night or else the machinery would run away. A. This question respecting water power has been carefully examined, and there appears to be no good ground for the assertion. 2. Blacksmiths also say that they can get a piece of iron to a welding heat quicker at night than at daytime. Will you please inform me through Notes and Queries if this is really so? A. This is also fallacious. It is an optical deception.

(2) G. C. C. writes: I have a double cylinder engine, 1½ inch bore, 2 inch stroke, with a steam pressure of 100 pounds, and 400 to 500 revolutions per minute. How large a boat can I propel with it at a speed of six to seven miles per hour? A. Hardly large enough to carry one man to run the engine and move the vessel. 2. What diameter and pitch of wheel would I require for the engine and boat? A. Larger and more pitch than the engine would drive. If your boat is small enough to get the speed it would be little more than a large toy. A boat, say 10 or 12 feet long, and 3 or 3½ feet beam, might be driven by this engine 4½ or 5 miles per hour.

(3) W. writes: In SCIENTIFIC AMERICAN, No. 43, vol. xiv., first page, Fig. 15, there is a cut of polarized bell. Will you state what size of wire should be used for magnet and what quantity, in length or weight? A. Use No. 24 silk insulated copper wire, and make the depth of the winding equal to the diameter of the iron core.

(4) J. L. W. asks: What is the name of the acid that is used in shell stores in polishing and cleaning large shells—is it silicic acid? A. Yes. Hydrochloric acid diluted with water is also much used to cleanse them.

(5) E. McD. writes: By mistake a piece of oiled silk was placed between the leaves of a book and remained there until the oil, thick and soft, had penetrated through several of the leaves. Please inform me how the oil can be removed or hardened without effacing the print. A. Press powdered Fuller's earth lightly upon the greasy spot and allow it to soak the oil out.

(6) J. O'K. sends the following receipt for whitewash: Lime slaked with a solution of salt in water, and then properly thinned with skim milk from which all the cream has been taken, makes a permanent whitewash for outdoor work, and, it is said, renders the wood incombustible. It is an excellent wash for preserving shingles and for all farm purposes. And asks: Do you know of a better one; or, at least, can you suggest something that is good and more easily obtained than "skim milk"? A. You will find a receipt for a better and cheaper whitewash on page 52, vol. xiv.

(7) T. J. R. asks: Can you give me any information in regard to a whistle that is blown by water pressure? A. Whistles must be blown by air or steam, or any gas under pressure. Any steam whistle will blow effectively with air under the same pressure that is usually used with steam. Whistles made upon the same principles as organ pipes blow at very low pressures. The water jet would maintain a constant pressure, and with an easy blowing whistle would, no doubt, answer your purpose. This is supposing that you have considerable head of water and plenty of it; and may be made by setting up a long pipe perpendicular upon a chamber for holding the air and allowing the

water to separate from it; and from the bottom of the box raise a siphon pipe three or four feet high to carry off the water and maintain the pressure. Into the top of the main pipe throw a jet of water as strong as possible. This jet carries the air down the tube under considerable pressure, and with everything properly proportioned will furnish from the chamber sufficient air to blow a whistle.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

September 19, 1882,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1864, 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, corner of Warren Street, New York city. We also furnish copies of patents granted prior to 1864; but at increased cost, as the specifications not being printed, must be copied by hand.

Airbrake for railway cars, M. Brockway & Co. 264,617
Air compressor valve, H. C. Sergeant. 264,775
Auger blanks, die for heading, Myers & Andrews, 264,470
Automatic elevator, G. C. Tewksbury. 264,793
Axle, car, E. B. Orne. 264,474
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Bed bottom, Dunks & Glody. 264,641
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Bedstead or lounge, metallic, B. J. La Mothe. 264,711
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Bee smoking apparatus, T. F. Bingham. 264,614
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Blackening box holder, W. D. & C. A. Richardson. 264,566
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Boilers of road engines, device for leveling, T. F. & A. L. Wilson. 264,500
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Bottles, apparatus for packing or holding, Packham & Pelton. 264,744
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Bracelets, manufacturing, A. Lambert. 264,541
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Brake shoe, A. W. Sanborn. 264,569
Breast strap slide and hook, C. R. Furey. 264,685
Bricks and tiles, ornamentation of, J. C. Anderson. 264,505
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Button fastener, G. W. Prentice. 264,842
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Can opener, W. A. McFarlane. 264,549
Candlestick and loading tool combined, miner's, C. P. Des Moines. 264,636
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Coffee boiler, W. C. Salmon. 264,480
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Drawer pull, G. W. Tucker (r). 10,201
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Electric distribution and translation system, T. A. Edison. 264,642
Electric lights and conductors, support for, G. H. Allen. 264,599
Electric machine, dynamo, E. W. Siemens. 264,780
Electric machine, dynamo or magneto, T. A. Edison. 264,646 to 264,649
Electric machine regulator, dynamo, T. A. Edison. 264,658 to 264,673
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