

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.

Chard's Extra Heavy Machinery Oil. Chard's Anti-Corrosive Cylinder Oil. Chard's Patent Lubricine and Gear Grease. R. J. Chard, Sole Proprietor, 6 Burling Slip, New York.

For Sale, ready for instant delivery, 16" x 42" Corliss Beam Engine, 16" x 2" wheel, thorough repair. Price, f. o. b. at tide water, in New England, \$1,250. S. C. Forsaith & Co., Manchester, N. H.

Gun Powder Pile Drivers. Thos. Shaw, 915 Ridge Avenue, Philadelphia, Pa.

Requests for samples for steel pens from firms and the professions will meet with prompt attention by addressing the Esterbrook Steel Pen Co., 26 John St., N. Y.

Full book on batteries, etc., 25 cts. T. Ray, Ipswich, Mass.

Magic Lanterns, Stereopticons, and Views of all kinds and prices for public exhibitions. A profitable business for a person with small capital. Also lanterns for home amusement, etc. Send stamp for 116 page catalogue to McAlister, Mfg Optician, 49 Nassau St., New York.

Light and Fine Machinery to order. Foot Lathe catalogue for stamp. Chase & Woodman, Newark, N. J.

Mr. Ely, of Afton, N. J., cut thirteen acres of heavy grass in five hours, July 2, with the Eureka Mowing Machine. It is the best mower made. Farmers send for illustrated circular to Eureka Mower Co., Towanda, Pa.

Palmer's Computing Scale Wanted. Address J. R., Box 773, New York.

Blake's Belt Studs. The strongest and best fastening for leather and rubber belts. Greene, Tweed & Co., N. Y.

Wanted.—A first-class Corliss Engineer wants a situation. Is a machinist by trade. Good reference given. Address, stating salary, to F. C. M., 32 Derne St., Boston, Mass.

Caution to Manufacturers and Others.—The attention of those interested is called to the fact that materials for covering hot air and steam pipes, boilers, etc., which purport to contain asbestos, should bear the name of H. W. Johns, 87 Maiden Lane, N. Y., who is the inventor, patentee, and sole manufacturer of genuine asbestos materials, comprising paints, coatings, cements, sheathings, roofing, etc.

Parties desirous of contracting for the construction of Wells of extra large capacity, may address P. O. Box 1150, New Haven, Conn.

For Sale, on account of increase of power, one 20 x 48 Corliss Engine, with three boilers and equipment complete. Now in use, but deliverable in November next. For particulars address Natchez Cotton Mills Company, Natchez, Miss.

Wanted.—A Practical Mechanic to take charge of Pruning and other Shears Manufacturing. Address A. Flesher, Leesburg, O.

Leather Belting, Cotton Belting, Rubber Belting, Polishing Belts. Greene, Tweed & Co., 118 Chambers St., N. Y.

The E. Stebbins Mfg Co. (Brightwood, P. O.), Springfield, Mass., are prepared to furnish all kinds of Brass and Composition Castings at short notice; also Babbitt Metal. The quality of the work is what has given this foundry its high reputation. All work guaranteed.

Saw Mill Machinery. Stearns Mfg. Co. See p. 269.

The "1880" Lace Cutter by mail for 50 cts.; discount to the trade. Sterling Elliott, 262 Dover St., Boston, Mass.

The Tools, Fixtures, and Patterns of the Taunton Foundry and Machine Company for sale, by the George Place Machinery Agency, 121 Chambers St., New York.

For Sale, on account of increase of power, one 24 x 48 Corliss Engine, with three boilers and equipment complete. Now in use, but deliverable in November next. For particulars address Natchez Cotton Mills Company, Natchez, Miss.

Improved Rock Drills and Air Compressors. Illustrated catalogues and information gladly furnished. Address Ingersoll Rock Drill Co., 1 1/2 Park Place, N. Y.

Collection of Ornaments.—A book containing over 1,000 different designs, such as crests, coats of arms, vignettes, scrolls, borders, etc., sent on receipt of \$2. Palm & Fechteler, 403 Broadway, New York city.

The Boomer & Boschert Press Co. have in daily operation, at the Am. Inst. Fair, a complete cider mill and cider jelly manufactory. New York Office, 15 Park Row.

Packing once tried always used. Phoenix Packing from 1-16 up in spools or on coils. Phoenix Packing Company, 108 Liberty St., N. Y.

Blake "Lion and Eagle" Imp'd Crusher. See p. 269.

Gas Machines.—Be sure that you never buy one until you have circulars from Terri's Underground Meter Gas Machine, 39 Dey St., New York.

Experts in Patent Cases and Mechanical Counsel. Park Benjamin & Bro., 50 Astor House, New York.

Corrugated Wrought Iron for Tires on Traction Engines, etc. Sole mfrs., H. Lloyd, Son & Co., Pittsb'g, Pa.

National Steel Tube Cleaner for boiler tubes. Adjustable, durable. Chalmers-Spence Co., 40 John St., N. Y.

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

Eclipse Portable Engine. See illustrated adv., p. 252.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts. Importers Vienna lime, crocus, etc. Condit, Hanson & Van Winkle, Newark, N. J., and 92 and 94 Liberty St., New York.

Emery, Solid Walrus Wheels, Leather for Covering wood wheels. Greene, Tweed & Co., 118 Chambers St., N. Y.

Presses, Dies, and Tools for working Sheet Metal, etc. Fruit & other can tools. Bliss & Williams, B'klyn, N. Y.

Clark Rubber Wheels adv. See page 237.

Hydraulic Jacks, Presses and Pumps. Polishing and Buffing Machinery. Patent Punches, Shears, etc. E. Lyon & Co., 470 Grand St., New York.

Sheet Metal Presses, Ferracite Co., Bridgeton, N. J.

Wright's Patent Steam Engine, with automatic cut off. The best engine made. For prices, address William Wright, Manufacturer, Newburgh, N. Y.

4 to 40 H. P. Steam Engines. See adv. p. 252.

National Institute of Steam and Mechanical Engineering, Bridgeport, Conn. Blast Furnace Construction and Management. The metallurgy of iron and steel. Practical Instruction in Steam Engineering, and a good situation when competent. Send for pamphlet.

For Separators, Farm & Vertical Engines, see adv. p. 250.

Reed's Sectional Covering for steam surfaces; any one can apply it; can be removed and replaced without injury. J. A. Locke, Agt., 32 Cortlandt St., N. Y.

For Yale Mills and Engines, see page 252.

Silent Injector, Blower, and Exhauster. See adv. p. 284.

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

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

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

50,000 Sawyers wanted to send their full address for Emerson's Hand Book of Saws (free). Over 100 illustrations and pages of valuable information. How to straighten saws, etc. Emerson, Smith & Co., Beaver Falls, Pa.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 284.

For Wood-Working Machinery, see illus. adv. p. 285.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 285.

Elevators, Freight and Passenger, Shafting, Pulleys and Hangers. J. S. Graves & Son, Rochester, N. Y.

For Patent Shapers and Planers, see illus. adv. p. 284.

Comb'd Punch & Shears; Universal Lathe Chucks. Lambertville Iron Works, Lambertville, N. J. See ad. p. 285.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 284.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 284.

Penfield (Pulley) Blocks, Lockport, N. Y. See ad. p. 284.

Catechism of the Locomotive, 625 pages, 250 engravings. The most accurate, complete, and easily understood book on the Locomotive. Price \$2.50. Send for a catalogue of railroad books. The Railroad Gazette, 78 Broadway, New York.

C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 284.

For best low price Planer and Matcher, and latest improved Sash, Door, and Blind Machinery, Send for catalogue to Rowley & Hermance, Williamsport, Pa.

Elevators.—Stokes & Parrish, Phila., Pa. See p. 284.

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.

(1) W. M. asks: 1. What is the best method of washing a pair of common working pants that is tolerably greasy so as not to discharge the color? Is there any way of fastening the dye before washing? A. It is impossible to wholly prevent the washing out of such dyes; still, if treated in the following manner, and not allowed to remain too long in the water, the effect of the washing on the dyes will be less apparent: water 1 gallon, soap 1/2 lb.; boil to dissolve; add two oz. borax; dilute with about 8 gallons of water, work the goods through as quickly as possible, and rinse without wringing. An aqueous solution of 1 part copperas and 7 parts logwood extract may be used for reviving the faded color of cheap black goods. 2. How can I clean off the hard scale that has collected on the zinc of a medical battery? A. Try sulphuric acid diluted with two or three parts of water, and use a stiff wire brush. 3. What is the reason that copper is the only metal used for the apparatus in distilling spirits? A. Copper is a better conductor of heat, can be worked to better advantage, is less affected by the liquids, and less liable

to color or otherwise affect the distillate. 4. Would wrought iron pipe do for a worm for distilling whisky? A. Spirit could be distilled in such a vessel.

(2) G. G. G. writes: 1. In directions for making an induction coil in SUPPLEMENT No. 160, it says the secondary coil is made of No. 36 copper wire. What gauge is understood? A. American. 2. In making coils of other dimensions, is wire of the same size used? A. Yes. 3. Can you tell me what kind of cement will fasten leather to metal, and will not be affected by bisulphide of carbon? A. Gelatine dissolved in acetic acid.

(3) F. R. R. asks (1) how to remove and replace the substance inside the porous cup of a Leclanché cell. What is the substance? A. Remove the cement at the top of the cell, take out the carbon and remove the filling of the cell, soak both carbon and cell in warm water. Replace the carbon and fill the cell with granulated black oxide of manganese. 2. What is the rule for the proportions of an electro-magnet to get the greatest power from a given current of electricity? A. The maximum magnetic force is developed when the resistance of the coils of the electro-magnets in circuit is equal to the resistance of the other parts of the circuit—that is, the conducting wires and battery.

(4) C. M. D. writes: I have about 600 feet No. 40 silk insulated wire and desire to make an induction coil. What size shall I make my spool, and how much wire shall I use for my primary, to get good results with one small bichromate cell? A. Use two layers of No. 16 silk covered copper wire. Make the core of your spool four inches long and five-eighths inch diameter. Your other query lacks data. Repeat, giving length of lines and diagram of connections.

(5) J. W. W. asks: 1. What is the cause of the heat produced in the armature core (iron) of a dynamo-electric machine? Is it not largely due to the rapid reversal of the magnetic polarity of the iron? A. Yes. 2. Supposing two dynamo machines alike in every respect with the exception that one armature is wound with No. 14 and one with the same length of No. 16, would not the one with No. 14 produce a current of greater quantity or more heating property than the 16? A. It depends on the construction of the machine. In a large machine, having strong field magnets, the larger wire would produce the most effective current; but with a very small machine the smaller wire would be best.

(6) W. S. asks: 1. Is the Siemens-Halske as strong as the chromic acid battery? A. No. 2. How long will either of the above batteries work without attention, if run constantly for eight hours per day on a circuit with a resistance of about two ohms? A. The S.-H. sulphate of copper battery will run for several months. The chromic acid battery will run two or three days only. 3. How many Smee batteries will be required to develop the same power as six of the above? A. Six Smees are about equivalent to six S.-H. sulphate of copper batteries. Eight Smees would be about the same as six chromic acid batteries.

(7) F. R. R. asks: Does the improved Prud'homme battery have the same substance in the porous cup as the Leclanché? A. We believe the porous cell contains granulated carbon.

(8) A. R. asks: 1. Will a magnet give more attractive force than its weight? If so, what are the proportions? A. A good magnet will lift several times its own weight; but the amount lifted depends on the form of the magnet, on the quality of steel from which it is made, and on the degree of magnetization. 2. Will a magnet lose its force by continual use? A. Yes, generally. It depends something on the manner in which it is used. If, as in some of the telephones, there is an armature constantly in contact with the poles, it will not lose its power.

COMMUNICATION RECEIVED.

On the Tin Mines of Maine. By C. W. H.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were

Granted in the Week Ending

October 5, 1880,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

Table listing inventions and their patent numbers, including Aerator, H. Kupfer; Air compressors and water pumps, automatic balance attachment for delivery valves of Connor & Do...; Air-tight can, C. L. Betts; Ammonia, method and apparatus for obtaining, H. P. Lorenzen; Animal shears, J. Clough; Annunciator, electric, J. I. Sabin; Asparagus buncher, J. & F. H. Weeks; Awning, shutter, J. Carey, Jr.; Axle box, car, G. F. Gear; Barrels or churns, head for, J. McDermaid; Bedstead, wardrobe, M. Crosby; Birds, manufacture of artificial, C. H. Bogurtha; Boiler tubes, apparatus for securing, W. Tully; Boot treeing machine, Crisp & Copeland; Boring bit gauge, W. F. Rutter; Brake shoe, G. A. Bullock; Broom, H. McConnell; Broom, Gallagher & Douglas.

Table listing inventions and their patent numbers, including Building, fireproof, J. J. Schillinger; Bung, barrel, T. Powers; Burial casket, J. W. Brasure; Capsule machine, gelatine, V. E. Mauger; Car attachment for elevated railways, C. E. Powers; Car brake, railway, W. Gill; Car brake, W. P. Smith; Car coupling, J. P. Easley; Car coupling, W. L. Everit; Car coupling, A. B. Miller; Car coupling, W. S. Sampson; Car roof, A. P. Winslow; Car stock, S. R. Karis; Car wheel, J. Rigby; Cards, etc., making colored edged, O. B. Hastings; Carpet lining, manufacture of, J. R. Harrington; Cartridge assembling machine, G. P. Salisbury; Cartridge loading implement, J. Brown, Jr.; Cartridge shells, method and apparatus for annealing, T. G. Bennett; Chain, bead, T. Granbery; Cigar cutter, J. Wienhold; Cigarette, B. Baron; Clod cutter and harrow, combined, W. Wimpee; Cloth stretching and drying machine, J. Sinnamon; Clothes pin, A. C. Asild; Clothes pounder, D. C. Jordan; Coal shovel or scoop, C. M. Segume; Coffee pot, T. H. Harrison; Cooking vessel, H. C. White; Cord making machine, C. E. Barnes; Corn sheller, M. F. Remington; Corn sheller, C. E. Whitman; Corner stone for boundary lines, J. C. Isaac; Cornice, extension, M. Murphey; Corset, W. J. Miller; Corset steel, A. Bluntach; Creaming can, C. L. Betts; Crown sheet support, J. E. Jerrold; Cultivator, J. H. Bailey; Cultivator, A. Lupton; Cultivator tooth, J. S. Rowell; Cultivator tooth, L. S. Wood; Curtain fixture, W. H. Harrison; Curtain fixture, P. Osgood; Cutlery handle, pocket, B. McGovern; Damper regulator for steam boilers, H. Lyons; Dashes, machine for the manufacture of, Peters & Standish; Dental compound for preventing pain, H. E. Denett; Dish, butter, T. J. Pairpoint; Door hanger, C. Johnson; Door hanger, C. W. Pierce; Double gate or valve, P. Giovannini; Electric machine, dynamo, E. Thomson; Electric machine, dynamo, Thomson & Houston; Eyeglass, S. Levin; Farm and garden tool, W. S. Rabb; Faucet, W. S. Cooper; Faucet, C. H. Koetzner; Faucet, J. Quintenz; Fence material, device for cutting barbs on, T. V. Allis; Fence post, iron, Rainnie & Robinson; Fence wire, machine for barbing, A. Henley; Fertilizer distributor, J. W. Spangler; Firearm, breech-loading, T. D. Bartley; Firearm, breech-loading, G. W. Hadley; Firearm, breech-loading, C. Slotterbek; Firearm, magazine, B. Burton; Fire extinguisher, A. J. Sparrow; Foot bath, H. D. Partridge; Fuel economizer, R. Newton; Game board, D. L. Wilcox; Gas engine, I. Durand; Gas engine, C. Linford; Gas regulator, J. B. Cox; Gas regulator, J. B. Tiffany; Glassware, manufacture of handled, W. Fox; Glove fastener, E. Wright; Governor, D. F. Milne; Grain drill feed regulator, Outcalt & Kissner; Grain scouring apparatus, J. N. Knox; Grain scouring apparatus, Leas & Hanson; Grain scouring device, D. M. Richardson; Grate, R. Newton; Grinding mill, domestic, Parker & Chapman; Hame hook, M. C. Hargrave; Hat pounding machines, attachment for, E. B. Taylor; Hauling clip or griper, J. Hanson; Heel, rubber, H. Pennie; Hoe, R. G. S. Austin; Hood, S. N. Burridge; Horseshoe nails, making, J. M. Laughlin; Hub, vehicle wheel, S. Mitchell; Ice house, Lederle & Oberlein; Incased can, H. Sangster; Ironing machine, J. K. O'Neil; Jewelry ornament, F. Diffany; Knitting machine, M. Marshall; Knob, register, G. W. Lewin; Ladder, telescopic, F. W. Hofele; Lamp, C. R. Harrison; Lamp burner, Lotz & Lemon; Lamp, hydrogen, Rhind & Farthing; Lantern, E. P. Follett; Lantern, W. S. Rogers; Lasting machine, G. Hawkes; Level, spirit, W. Langdon; Life raft and settee, combined, E. Harding; Liquids, device for purifying, A. C. Humphreys; Lock strike, H. Fellows; Locomotive exhaust apparatus, E. Longstreth; Loom shuttle, J. A. Bergan; Loom temple, J. B. Stamour; Lubricating apparatus for steam engine cylinders, J. Wheelock; Mangle, A. V. Semrad; Metal from ores, apparatus for extracting, T. G. Hall; Metal shearing machine, J. Kinhart; Milk cooler, J. G. Smith; Mill for crushing and grinding grain, etc., C. S. Wenger; Millstone dressing machine, A. T. Teetor; Moulder, G. Sebold; Mower, E. Smith; Mucilage or paste vessel, C. Sabin; Musical instrument reed, H. Smith; Net for horses, fly, G. R. Ayres; Numbering or paging machine, G. Lautenschlager; Nut roaster, P. J. Rumsey; Oil cans, nozzle stopper for, J. H. Noyes; Oiler nozzle, S. S. Newton; Oven, H. McConnell; Package, tight, J. Naylor, Jr.; Packing for engines, etc., J. C. Febiger, Jr.; Paddlewheel, T. G. Stritter; Paper bag, J. Bowser; Paper bag machine, W. C. Cross.