Business and Versonal.

The Chargefor Insertion under this head is One Dollar a line for each insertion: about eight words to a line Advertisements must be received at Imblication office as early as Thursday morning to appear in next issue. The publishers of this paper quarantee to advertisers a circulation of not less than 50,000 copies every

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Chard's Anti-Corrosive Cylinder Oil. Chard's Patent Lubricene and Gear Grease

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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.

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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, patentae, and sole manufacturer of genuine asbestos materials, comprising paints, coatings, cements, sheathings, roofing, etc.

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The E. Stebbins Manuf'g 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.

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Collection of Ornaments.-A book containing over 1,000 different designs, such as crests, coats of arms, vignettes, scrolls corners borders, etc., sent on receip 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. Phœnix Packing from 1-16 up in spools or on coils. Phœnix 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 Terril's Underground Meter Gas Machine. 39 Dey St., New York.

Experts in Patent Causes 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 Peck's Patent Drop Press. See adv., page 268.

Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, limited, Erie, Pa.

Skinner & Wood, Erie, Pa., Portable and Stationary Engines, are full of orders, and withdraw their illustrated advertisement. Send for their new circulars.

Sweetland & Co., 126 Union St., New Haven, Conn. manufacture the Sweetland Combination Chuck.

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Recipes and Information on all Industrial Processes Park Benjamin's Expert Office, 50 Astor House, N. Y. For the best Stave, Barrel, Keg, and Hogshead Ma-

chinery, address H. A. Crossley, Cleveland. Ohio. Best Oak Tanned Leather Belting. Wm. F. Fore paugh, Jr., & Bros., 531 Jefferson St., Philadelphia, Pa. Green River Drilling Machines. See ad. p. 269.

able, durable. Chalmers-Spence Co., 40 John St., N. Y. Stave, Barrel, Keg, and Hogshead Machinery a specialty, by E. & B. Holmes, Buffalo, 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.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, importers Vienna lime, crocus, 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.

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.220.

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

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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 Freenwood & 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 ills. 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.

Leather Belting, Cotton Belting, Rubber Belting, Polings. The most accurate, complete, and easily under-ishing Belts. Greene, Tweed & Co., 118 Chambers St., N.Y. stood book on the Locomotive. Price \$2.50. Send for a catalogue of railroad books. The Railroad Gazette, 73 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 Blin 1 Machinery, Send for catalogue to Rowley & Hermance, Williamsport, Pa.

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



HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless ccompanied with the full name and address of the

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 ame the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after 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 lahor to obtain such information without remuneration.

Any numbers of the Scientific American Suppleoffice. Price 10 cents each.

(1) W. M. asks: 1. What is the best od 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

National Steel Tube Cleaner for boiler tubes. Adjust- 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. writes: 1. In directions for making an induction coil in Supersement, No. 160, it says the secondary coil is made of No. 36 copper wire. What gauge is understood? A. American. 2. In mak Eclipse Portable Engine. See illustrated adv., p. 252. | ing 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 afetc. Condit. Hanson & Van Winkle, Newark, N. J., and spected 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 Sheet Metal Presses, Ferracute Co., Bridgeton, N. J. | 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 cir cuit-thatis, 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

6) W. S. asks: 1. Is the Siemens-Halske Eyeglass, S. Levin 232,985 Eyeglass, S. Levin 233,019 Farm and garden tool, W. S. Rabb 233,019 232,942 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 Catechism of the Locomotive, 625 pages, 250 engrav | Prud'homme battery have the same substance in the porous cup as the Leclanche? 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.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for one dollar. In ordering please state the number and date of the granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

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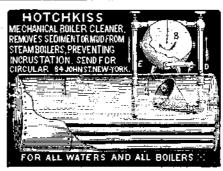
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