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. The publishers of this paper guarantee to advertisers a circulation of not less than 50,000 copies every veekly issue.

Chard's Extra Heavy Machinery Oil.

Chard's Anti-Corrosive Cylinder Oil.

Chard's Patent Lubricene and Gear Grease R. J. Chard, Sole Proprietor, 6 Burling Slip, New York.

Brick Presses for Fire & Red Brick, and Brickmaker's

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Greene, Tweed & Co., 118 Chambers Gu, M. ... John K. S. Stout, Engineer at Beadleston & Woerz's For best low price Planer and Matcher. Chamber Covering on Steam Pipes, Heaters, and Tanks, and your Special Coverings for Cold Water Tanks and Pipes, I takepleasure in saying that all of them are su even better than stated by you."

The Celebrated "Schenck" Planers and Matchers other Wood-Working Machines. H. B. Schenck Matteawan, N. Y.

Small Brass and Iron Rivets made to order by Blake & Johnson, Waterbury, Conn.

Clark Rubber Wheels adv. See page 172.

Wanted.-Single or double engine, 1,000 horses power. Description and price to C. W. Copeland, 24 Park Place. Fine Gray Iron Castings to order. A. Winterburn,

Foundry, 16 De Witt St., Albany, N. Y. Recipes and Information on all Industrial Proce

Park Benjamin's Expert Office, 50 Astor House, N.Y. Experts in Patent Causes and Mechanical Counsel.

Park Benjamin & Bro., 50 Astor House, New York. Corrugated Wrought Iron for Tires on Traction En

gines, etc. Sole mfrs., H. Lloyd, Son & Co., Pittsb'g, Pa Malleable and Gray Iron Castings, all descriptions, by Erie Malleable Iron Company, limited, Erie, Pa.

Apply to J. H. Blaisdell for all kinds of Wood and Iron Working Machinery. 107 Liberty St., New York. Send for illustrated catalogue.

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

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

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Power, Foot, and Hand Presses for Metal Workers. Lowest prices. Peerless Punch & Shear Co. 52 Dey St., N.Y, The Brown Automatic Cut-off Engine; unexcelled for

workmanship, economy, and durability. Write for information. C. H. Brown & Co., Fitchburg, Mass.

For the best Stave, Barrel, Keg, and Hogshead Machinery, address H. A. Crossley, Cleveland, Ohio.

Best Oak Tanned Leather Belting. Wm. F. Fore-paugh, Jr., & Bros., 531 Jefferson St., Philadelphia, Pa. National Steel Tube Cleaner for boiler tubes. Adjust-

able, 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.

Stave, Barrel, Keg, and Hogshead Machinery a specialty, by E. & B. Holmes, Buffalo, N. Y.

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

Presses, Dies, and Tools for working Sheet Metal. etc. Fruit & other can tools. Bliss & Williams, B'klyn, N. Y. Hydraulic Jacks, Presses and Pumps. Polishing and Buffing Machinery. Patent Punches, Shears, etc. E. diameter or square, and say 12 to 16 feet in length. Lyon & Co., 470 Grand St., New York. (5) W. H. W. asks: 1 Are not the

Sheet Metal Presses, Ferracute 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.

For Mill Mach'y & Mill Furnishing, see illus. adv. p.147. For Separators, Farm & Vertical Engines, see adv.p.157.

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling, see Frisbie's ad. p. 157. For Patent Shapers and Planers, see ills. adv. p. 156.

Pa. Diamond Drill Co. Box423, Pottsville, Pa. See p. 157.

Binders, and Paper Mills. Large knife work a specialty. Also manufacturers of Soloman's Parallel Vise. Taylor Stiles & Co., Riegelsville, N. J.

National Institute of Steam and

Wanted-The address of 40,000 Sawyers and Lumbermen for a copy of Emerson's Hand Book of Saws. New edition 1880. Over 100 illustrations and pages of valuable information. Emerson, Smith & Co., Beaver Falls, Pa.

Scientific American.

The "Fitchburg" Automatic Cut-off Horizontal En gines. The "Haskins" Engines and Boilers. Send for pamphlet. Fitchburg Steam Engine Co., Fitchb'g, Mass For Wood-Working Machinery, see illus. adv. p. 190. Eclipse Portable Engine. See illustrated adv., p. 189. Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p.188. Elevators, Freight and Passenger, Shafting, Pulleys and Hangers. L. S. Graves & Son. Rochester, N. Y.

Nellis' Cast Tool Steel, Castings from which our specialty is Plow Shares. Also all kinds agricultural steels and ornamental fencings. Nellis, Shriver & Co., Pittsburg, Pa. Hydraulic Cylinders, Wheels, and Pinions, Machinery

Castings; all kinds; strong and durable; and easily worked. Tensile strength not less than 65,000 lbs. to For best low price Planer and Matcher. and latest

Penfield (Pulley) Blocks, Lockport, N.Y. See ad. p.189.

4 to 40 H P. Steam Engines. See adv. p. 189.

Lightning Screw Plates and Labor-saving Tools, p. 190





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 SUPPLE-MENT referred to in these columns may be had at this office. Price 10 cents each.

(1) O. V. D.-In replying to your query as to the proper strength for telephone magnets, in last issue of this paper, an obvious error occurs. The magnet should support three or four times its own weight, instead of three-fourths as there given.

(2) W. H. C. asks: 1. What kind of boiler and fuel should be used in close apartment to run a small engine without vitiating the air? A. You can use a tubular (upright) boiler with gas or alcohol lamps, but you should provide a pipe to carry off the products of combustion. 2. Also what is the best book for a student of mechanical drawing to begin with having no previous considerable knowledge of geometry or mathematics ? A. Professor MacCord's drawing lessons in SCIENTIFIC AMERICAN SUPPLEMENT will meet your wants.

(3) W. P. asks if quicklime is a proper disinfectant for a cellar where milk is kept. A, Yes.

(4) W. writes: The exhaust pipe from a 200 horse power steam engine has a back pressure valve in it. The escaping steam, after passing the valve, makes a disagreeable noise. How can this be avoided cheaply? A. The noise will be very much reduced by surrounding the outlet or escape, with a wood pipe, 2 feet or 21/2 feet

(5) W. H. W. asks: 1. Are not the continuous lines of metallic pipes for gas, water, etc., in city buildings a considerable protection from the injurious effects of lightning? A. Yes, they form an excellent and extensive ground. 2. Do they not render any severe injury to the inmates improbable by affording the electricity a ready escape to the earth? A. It is undoubtedly true that accidents have been averted by the presence of the pipes, and it is also true that the pipes afford so manyavenues of escape for the lightning that under certain conditions the danger is increased. For Mineral Lands Prospected, Artesian Wells Bored, by example, suppose a person standing in the path of the lightning between the striking point and the nearest Machine Knives for Wood-working Machinery, Book | pipe, it is probable that he would be selected as a conductor. 3. Will not a metal roof with water conductors leading to drain afford some protection? A. Yes, to a | Foot rest and boot jack, combined, L.C. Boyington 231,529 ing, Bridgeport, Conn. Blast Furnace Construction and ing their lower ends with the gas and water pipes, and by Management. The metallurgy of iron and steel. Prac- extending them eight or ten feet in a trench made in earth tical Instruction in Steam Engineering, and a good situa- that is continnally moist and filled with coke packed around the rod, your protection will be as good as it is possible to secure. 4. Would the risk from lightning be materially increased by placing a wooden pole, with an iron pin on top for a weather vane, two or three feet above a low chimney on a city house with gas and water pipes. metal roof, etc., but without a lightning rod? A. The risk would be increased. All elevated points are sources of danger unless provided with a good rod, well grounded.

or destroyed on the work they are chargeable, also all Hose Pipe, J. Bestwick necessary repairs while used on the work are chargeable

INDEX OF INVENTIONS FOR WHICH

Letters Patent of the United States were Granted in the Week Ending August 24, 1880,

AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any natent 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 patent desired and remit to Munn & Co., 37 Park Row, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

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	Adjustable chair. J. M. Taggart Air engine, A. K. Rider (r)	231,63
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ì		
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31,631 Oil vapor, apparatus for fractionally condensing, Paper machines, felt cleaning apparatus for, o. Holloway Paper, etc., machinery and apparatus for glazing . 231.579 or for coloring and glazing the surface of J. Jeffs..... Paper strip from which to manufacture paper 231.585 Picture frame, L. Brower.... 231,473 Pillows, beds, etc., material for stuffing, R. Stil-..... 231,459 Planing blind slats, machine for, G. W. Austin..., 231,389 Planter and fertilizer distributer, seed, R. M. Pneumatic engine, O. S. Presbrey 231.446 Pocket, F. J. Rosenberg..... 231.618 Pulp, etc., conversion of marine plants into, E.V. Pumps, detachable bracket for steam, E.E.Miller. 231,44 Radiator, T. Fairbanks..... 231,413
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[OFFICIAL.]

tion when competent. Send for pamphlet.

Rollstone Mac. Co.'s Wood Working Mach'y ad. p. 172.

For Yale Mills and Engines, see page 173.

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.

Improved Solid Emery Wheels and Machinery, Au tomatic Knife Grinders, Portable Chuck Jaws. Important, that users should have prices of these first goods. American Twist DrillCo., Meredithville, N. H.

For Standard Turbine, see last or next number.

Burgess' Non-conductor for Heated Surfaces; easily applied, efficient, and inexpensive. Applicable to plain or curved surfaces, pipes, elbows, and valves. See p. 284. Fire Brick, Tile, and Clay Retorts, all shapes. Borgner & O'Brien, M'f'rs, 23d St., above Race, Phila., Pa.

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Diamond Drills, J. Dickinson, 64 Nassau St., N. Y. Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

(6) T. W. O. asks: 1. Can you give me a process of bleaching animal size, such as is used by papermakers? A. Try a small quantity of alum and sulphite of soda (freshly prepared). 2. What will prevent the forming of rosin size. The size is made of rosin and sal soda. A. A trace of fine sperm or olive oil will probably obviate the difficulty. An excess must be avoided.

(7) "Enterprise" asks: What tools, if any, is a machinist supposed to furnish, at his own expense. when in the employ of other parties? A. All of what are usually termed "hand" tools; but if any are lost

dus irom hydrocurbon nquia una water, appa-	
ratus for making illuminating, E. E. Holmes. 231,423	Spokes, gauge for sawing, J. Dewitz 231.546
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Scientific American.

September 25, 1880.

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TRADE MARKS.

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Slates, manufacture of, R. A. Coffin, Slatington, Pa. Sleeping berth, E. A. McMann, Cleveland, Ohio. Speed regulator for steam engines, J. B. Sheppard, Philadelphia, Pa

Water heater and purifier, G. H. Zschech, Indianapolis, Ind.

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HOUSE DRAINAGE.—BY EDWARD S. Philbrick, C.E. A lecture delivered before the students of the Massachusetts Institute of Teehnology, discus-sing the very important subject of the construction of the drains situated within the house walls; pointing out the proper method of arranging the plumbing fixtures, what materials should be used for main drains, soil pipes, small waste pipes, etc., how these should be con-structed, and how arranged to effect the most perfect drainage and prevent the exhalations of noxious gases. With three illustrations. Contained in SOIEVIPIC AMERICAN SUPPLEMENT, NO. 243. Price 10 cents. To be had at this office and from allnewsdealers. The same number contains an illustrated description of an "Appa-ratus for Clearing Sewage."

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50 Elegant, All New, Chromo & Scroll Cards, no 2 alike, North ford, Ct.

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