

Business and Personal.

The Charge for Insertion... about eight words to a line.

The Buckeye Engine Co. make a specialty of fitting plain engines with their Automatic Cut-off and Condensers.

Vertical Scientific Grain Mills. A.W.Straub & Co., Phila. For Town and Village use, comb'd Hand Fire Engine & Hose Carriage.

Climax Washing Machine. Reliable Agents wanted. Descriptive circulars furnished.

The great Wheelock Engine, which furnishes the power to the machinery of the American Exhibit at the Paris Exposition this year, is lubricated by Patent Lubricene and Cups.

Wanted.—A Back Geared, Screw Cutting, Foot Power Lathe.

A Microscope with 100 mounted objects for one dollar; circulars free.

Velvet Looms Wanted.—Manufacturers please send price lists to W. Lillenthal, 40 Lispenard St., N. Y. city.

Electrical and Mechanical Engineer and Expert. James Hamblet, 114 Tremont St., Boston, Mass.

Wanted.—Cash prices and description, 15 and 30 horse power Stationary Engines and Boilers.

Wanted cheap for cash.—A good second-hand Back Geared Screw Machine.

For New and Second Hand Boilers, send to Hilles & Jones, Wilmington, Delaware.

Friction Clutches for heavy work. Can be run at high speeds, and start gradual.

Polishing Tools and Supplies. Send for new price list. Greene, Tweed & Co., 18 Park Place, N. Y.

For Mill Gearing, Shafting, Pulleys, and Hangers, address T. B. Wood & Co., Manufs., Chambersburg, Pa., for price.

Steam Yacht "Hiawatha" for sale.—Length, 40 ft.; beam, 8 ft. 5 in.; engine, 12 H. P.; speed, 12 miles.

24 inch Second-hand Planer, and 12 inch Jointer, or Buzz Planer, both in first-class order, for sale by Bentel, Margedant & Co., Hamilton, Ohio.

Wrenches.—The Lipsey "Reliable" is strongest and best. Six inch sample by mail 60 cents.

Cornice Brakes. J.M. Robinson & Co., Cincinnati, O.

Bolt Forging Machine & Power Hammers a specialty. Send for circulars.

The Cameron Steam Pump mounted in Phosphor Bronze is an indestructible machine. See ad. back page.

For Solid Wrought Iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Safety Linen Hose for factories, hotels, and stores, as protection from fire. Greene, Tweed & Co., 18 Park Place, N. Y.

John T. Noye & Son, Buffalo, N. Y., are Manufacturers of Burr Mill Stones and Flour Mill Machinery of all kinds, and dealers in Dufour & Co.'s Bolting Cloth.

Power & Foot Presses, Ferracute Co., Bridgeton, N. J.

Solid Emery Vulcanite Wheels.—The Solid Original Emery Wheel—other kinds imitations and inferior.

1,000 2d hand machines for sale. Send stamp for descriptive price list.

Steel Castings from one lb. to five thousand lbs. Invaluable for strength and durability.

For Best Presses, Dies, and Fruit Can Tools, Bliss & Williams, cor. of Plymouth and Jay Sts., Brooklyn, N.Y.

Hydraulic Presses and Jacks, new and second hand. Lathes and Machinery for Polishing and Buffing metals.

Sperm Oil, Pure. Wm. F. Nye, New Bedford, Mass.

Bound Volumes of the Scientific American.—I have on hand bound volumes of the Scientific American, which I will sell (singly or together) at \$1 each.

For Boulton's Paneling, Moulding, and Dovetailing Machine, and other wood-working machinery, address B. C. Machinery Co., Battle Creek, Mich.

Best Wood Cutting Machinery of the latest improved kinds, eminently superior, manufactured by Bentel, Margedant & Co., Hamilton, Ohio.

Patent Scroll and Band Saws. Best and cheapest in use. Cordesman, Egan & Co., Cincinnati, O.

Mill Stone Dressing Diamonds. Simple, effective, and durable. J. Dickinson, 64 Nassau St., N. Y.

Weldless Cold-drawn Steel Boiler and Hydraulic Tubes. Leng & Ogden, 212 Pearl St., N. Y.

For Best Insulated Telegraph Wire, Telephone Wire, and Flexible Cordage, Eugene F. Phillips, 67 Stewart St., Providence, R. I.

Hand Fire Engines, Lift and Force Pumps for fire and all other purposes. Address Rumsey & Co., Seneca Falls, N.Y., U.S.A.

The Turbine Wheel made by Risdon & Co., Mt. Holly, N. J., gave the best results at Centennial test.

Vertical & Yacht Engines. N.W. Twiss, New Haven, Ct.

Dead Pulleys, that stop the running of Loose Pulleys and Belts, taking the strain from Line Shaft when Machine is not in use.

NEW BOOKS AND PUBLICATIONS.

OLD HOMES MADE NEW. By William M. Woollett. Published by A. T. Bicknell & Co., New York city.

This is a collection of plans, exterior and interior views, illustrating the alteration and remodeling of several suburban residences.

We have received the reports and awards of the Judges of Groups 21, 23, 24, 26, and 27 from the publishers, Messrs. J. B. Lippincott & Co., Philadelphia.

Notes & Queries

W. McE.—See answer 36, p. 155, vol. 37.

T. W.—From your description we are unable to judge.

R. F. B.—See "Business and Personal" column, for addresses.

M. B. H.—You can find descriptions and details in Weisbach's "Mechanics and Engineering."

M. E. S.—You cannot find all the directions in a book. Bourne's "Catechism of the Steam Engine," and Forney's "Catechism of the Locomotive," contain useful information on the subject.

J. T. E.—You do not send enough details to enable us to form a decided opinion.

H. R. B.—See answer No. 19, p. 155, issue of March 9, 1878.

(1) C. H. & Co. write: We are manufacturers of cream colored earthen ware.

(2) H. P. S. asks how to make an umbrella cover waterproof. A. Apply first a strong hot aqueous solution of soap, then solution of alum, sulphate of alumina, or lead acetate (sugar of lead); again the soap solution, and finally wash with hot water.

(3) W. D. S. asks: 1. Would it be possible for me to run hydrogen gas through the gas pipes of my house for lighting purposes instead of common illuminating gas? A. Hydrogen gas, when burning, gives a very pale bluish flame, insufficient for illuminating purposes.

(4) W. C. S. writes: Please give me a recipe for making a good quality of shoemakers' ink, to blacken the sole edges and heels of boots and shoes while damp.

(5) F. L. W. writes: The ceramic fever has led me to ask if there is any mode of transferring an engraving from the paper on which it is originally printed to any object, without requiring pressure to any great amount?

(6) R. H. L. writes: I wish to etch broad letters and figures on glass by means of hydrofluoric acid gas. What wax or varnish is used which can be readily removed from the surfaces to be etched?

(7) C. A. A. writes: After the fruit is removed from peach cans we find the tin inside beautifully mottled like pearl.

(8) J. S. B. asks: Does the Jablochhoff electric candle throw out much heat? A. Compared with the illuminating power, the amount of heat radiated from the candle is relatively small.

(9) S. K. S. asks: What quantity and number of covered wire must I use to make the strongest horseshoe electro-magnet, having a 1/2 inch core, using a Daniell battery of six cups, and what length should

each coil be? A. Wind a sufficient quantity of No. 20 copper wire (magnet insulation) to make each spool 1 1/2 inch in diameter and 3/4 inches long.

(10) C. W. asks: 1. How strong should telephone magnets be? A. They should be able to lift about their own weight of iron.

(11) G. A. A. writes: I wish to run a steam pipe from a boiler to my house, a distance of 300 feet underground. What is the best non-conductor, for packing the pipe, and how should it be laid?

(12) F. H. M. asks: What is the rule for making a counterbalanced face wheel for engines? I had a crank engine (portable) that did not stand steady.

(13) C. H. S. asks: In fastening two pieces of wood with nails, which will make the stronger joining, to bore the outside piece, or force the nail through in the common way? A. The latter, we think.

(14) D. C. asks: How is the cold rolled shafting made so true as it is? A. By being passed through the rolls under heavy pressure.

(15) E. C. asks: 1. Which would be the best boiler to use for driving a thrashing machine, one built on locomotive style, or vertical? A. There is not a great deal of difference.

(16) S. W. H. writes: A person here says that it takes 25 per cent more coal to make steam from water that is returned to the boiler from the steam radiators used in warming buildings, than if water from a river or well were used.

(17) G. F. P. writes: I think that a 2 horse power engine will give 4 horse power by connecting a 5 inch pulley on its main shaft to a 10 inch pulley on its driver shaft, by a belt, losing, of course, half the original speed.

(18) R. N. writes: J. C. can melt small quantities of brass easily in a common cylinder stove with a good draught, using hard coal, and setting the crucible well down into the fire.

(19) W. S. P. asks: How can I make a good quality of lemon sirup? A. Lemon juice (strained or defecated), 1 pint; sugar, 2 1/2 lbs.; dissolve by gentle heat and set it aside; in 24 hours remove the scum and decant the clear liquid.

(20) J. C. L. asks: Is steam visible before it comes in contact with the atmosphere? A. No.

(21) A. E. R. asks: 1. How can the power of the voice be increased? A. The effect, in public halls, may be increased by sounding boards and by attention to the laws of acoustics in constructing buildings; the actual power can only be increased by practice.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

G. M. P.—The specimen in the red box is a micaceous clay; might be useful to makers of wall papers.—J. F. K.—The talcose schist may be auriferous.

COMMUNICATIONS RECEIVED.

- The Editor of the SCIENTIFIC AMERICAN acknowledges with much pleasure the receipt of original papers and contributions on the following subjects: Pendulum Experiment. By O. T. Aerial Navigation. By H. C. H. Quackery. By T. A. Electrical and Acoustic Observations. By J. W. S. Rapid Locomotive Building. By J. M. D. Duration of Impressions on the Retina. By H. T. Estimation of Sulphur in Organic Compounds. By W. W. I. and C. F. The Metric System. By G. N. W. Astronomic Discrepancies. By L. S. B. Does the Sun Move? New Optical Apparatus. By J. V. C. What is Life? By T. R. McC. and E. R. E. A Brilliant Meteor. By R. D. S.

Advertisements.

Inside Page, each insertion --- 75 cents a line. Back Page, each insertion --- \$1.00 a line.

Engravings may head advertisements at the same rate per line, by measurement, as the letter press. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

WARRANTED THE BEST. 1 H. P. Boiler & Engine, \$150. 2 H. P., \$175. 3 H. P., \$200. Tested to 200 lbs. Steam. LOVEGROVE & CO., 152 N. 3d St., Philadelphia, Pa.

INCORUSTATIONS ON BRICK WALLS. By WILLIAM THATCHER. The various causes; Bricks Ruined with Coal Fires; Sulphate of Magnesia; Dampness; Effect of common Mortar. Remedies. Also Report of Sub-committee, on the same subject, appointed by the University of Pennsylvania.

SECOND-HAND ENGINES. Portable and Stationary at Low Prices. HARRIS IRON WORKS, TITUSVILLE, PA.

MINOTON'S TILES. Art, Decorative and Flooring. Remit 9 cents postage for circulars. Anderson Merchant & Co., 53 Broadway, N.Y.

THE ONLY Genuine GEISER SELF-REGULATING GRAIN SEPARATOR. Celebrated for its light and smooth movements, also REPAIRING and CLEANING all kinds of grain. Manufactured only by THE GEISER MFG Co., Waynesboro, Franklin Co., Pa.

SETON HALL College South Orange, N. J. Healthful, comfortable, modern.

LATEST and Best Books on Steam Engineering. Send stamp for catalogue. F. KEPPY, Bridgeport, Conn.

PIANO Beautiful \$1,600 Concert Grand Pianos only \$425. Superb \$1,100 Grand Square Pianos only \$255. Elegant \$800 Upright Pianos, \$155. New Style Upright Pianos, \$112.50. New Organs \$35. Handsome Parlor Organs, 12 Stops, Steel Magnets, Powerfully Chorded, 50c each. Tuned only \$104.50. Immense New Steam Factory soon to be erected. Paper with much information about cos. of Pianos and Organs SENT FREE. Address DANIEL F. BEATTY, Washington, N. J.

LEHIGH UNIVERSITY.—Tuition Free. CIVIL, MECHANICAL AND MINING ENGINEERING; CHEMISTRY AND METALLURGY; FULL CLASSICAL INSTRUCTION; FRENCH AND GERMAN; ENGLISH LITERATURE; INTERNATIONAL AND CONSTITUTIONAL LAW; PSYCHOLOGY AND CHRISTIAN EVIDENCES. For Registers address The Rev. John M. Leavitt, D.D., President, Bethlehem, Penna.

TELEPHONE MATERIALS SENT TO any address upon receipt of price, by draft, money order or registered letter. Wound Bobbins of correct size, and of Finest Silk-covered, Pure Copper Wire, 75c each; Silyl Changed, 50c each; Church Organs, 18 Stops, and Polished Wood Handles, 75c each; Binding Posts, 3c per pair; all the Parts for a Pair of First-class Telephones, except the Diaphragms, \$4.00. J. H. BUNNELL, 112 Liberty Street, New York.

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