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.

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

SUERTO PLATA, SAN DOMINGO, July 1, 1880.
H. W. Johns M'f'g Co., 87 Maiden Lane, New York:
I have ordered to-day through Messrs. R. H. Allen & Co., a lot of Roofing. Your Asbestos Roofing, which I have sold during the past three years, has given good satisfaction. Yours truly, W. O. BARTLETT.

Telephones repaired, parts of same for sale. Send stamp for circulars. P. O. Box 205, Jersey City, N. J.

The novel Shading Pen. Sample writing and circular free. See notice and cut this paper, May 1. A set of three sizes by mail, $1. Address J. W. Stoakes, Milan, O.

Metallic Pattern Letters, at reduced rates, manufactured by H. W. night, Seneca Falls, N. Y.

For Sale or Rent, at a merely nominal figure, the Camden and Amboy R. R. Shops at Bordentown, N. J. For descript ve rcular, addres Board of T de, Bordentown, N. J.

Partner Wanted, with Capital, to take half interest in a New and Valuable Invention which is now being tried by order of U.S. Government. atent just allowed. Address G. W. Turner, Tremont House, 365 Broadway, N.Y.

For Sale.—Shapley & Welles Engine, 8 H.P.; as good as new. Lathe swing, 24 in. x 9 ft. T. & K., Box 246, Owego, Tioga Co., N. Y.

Penfield (Pulley) Blocks, Lockport, N.Y. See ad. p. 62.

Paper Board Manufacturing Companies will please send address to J. B. Parker, Memphis, Tenn.

Asbestos Board, Packing, Gaskets, Fibers, Asbestos Materials for Steam & Buildin Purposes. Boiler & Pipe Covering, Asbestos Pat. Fiber Co ,limited, B'way, N.Y.

Corrugated Wrought Iron for Tires on Traction Engines, etc. Sole m'f'rs., 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 orking Machinery. 107 L berty St., New York. Send for illustrated catalogue.

Our new Stylographic Pen (just patented), having the duplex interchangeable point section, is the very latest improvement. The Stylo raphic Pen Co., Room 13, 169 Broadway, N. Y.

Advertising of all kinds in all American Newspapers. Special lists free. Address E. N. Freshman & Bros., Cincinnati, O.

For Separators, Farm & Vertical Engines, see adv. p. 28.

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., man acture the Sweetland Combination Chuck.

Power, Foot, and Hand Presses for Metal Workers. Lowest prices. Peerless Punch & Shear Co., 52 Dey S ., 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, Clev land, Ohio.

Best Oak Tanned Leather Belting. Wm. F. Forepaugh, Jr., & Bros. 531 e erson St., Philadelphia, Pa.

For Patent Shapers and Planers, see ills. adv. p. 28.

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., Ph ladelphia, Pa.

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

Pat. Steam Hoisting Mach'y. See illus. adv., p. 61.

Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, impo er Vienna lime, crocus, etc. Condit Hanson & Van inkle 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 & lliams B'klyn, N. Y.

Instruction in Steam and Mechanical Engineering. A thorough practical education, and a desirable situation as soon as competent, can be obtained at the Na ional Institute of Steam Engineering, Bridgeport, Conn. For particulars, send for pamphlet.

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

Forsaith & Co., Manchester, N. H., & 207 Centre St., N. Y. Bolt Forging Machines, Power Hammers, Comb'd Hand Fire Eng. & Hose Carriages, New & 2d hand Machinery. Send stamp for illus. cat. State just what you want.

Air Compressors, Blowing Engines, Steam Pumping Machinery, Hydraulic Presses. Philadelphia Hydraulic Works, Philadelphia, Pa.

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

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

For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys Cut-off Coupling, see Frisbie's ad. p. 28.

For Mill Mach'y & Mill Furnishing, see illus. adv. p. 29.

Mineral Lands Prospected, Artesian Wells Bored, by Pa. Diamond Drill Co. Box 423, Pottsville, Pa. See p. 381.

Rollstone Mac. Co.'s Wood Working Mach'y ad. p. 29.

Machine Knives for Wood-working Machinery, Book Binders, and Paper Mills. Large knife work a specialty. Also manufacturers of Soloman's Parallel Vise. Taylor, Stiles & Co., iegelsville, N. J.

Don't buy until you see the $4 Drill Chuck; holds 0 to 9-16. A. F. Cushman, Hartford, Conn.

For Sale Cheap.—A Springfield Gas Machine, with 500 light capacity. D. L. E., 16 White St., New York.

Upright Engine, 16 x 28 in., in good order, and now running in this city, will be sold low. Belcher and Bagnall, 40 Cortlandt St., New York.

Wanted—First-class Iron Lathe, 20 to 24 in. swing, 17 to 20 ft. bed. Wm. Anderson, 23d and Wood St., lla.

$325 Horizontal Engine, 20 H. P. See page 61.

Improved Solid Emery Wheels and Machinery, Automatic Knife Grinders, Portable Chuck Jaws. *Important*, that users should have prices of these first class goods. American Twist Drill Co., 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 su ace , pipes, elbows, and valves. See p. 284.

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

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

Steam Hammers, Improved Hydraulic Jacks, and Tube pande s. R. u eon, 24 Columbia St., New York.

Wanted—The address of 40,000 Sawyers and Lumbermen for a copy of Emerson s H nd ook of Saws. New edition 1880. Over 100 ll s rations and pages of valuable information. Emerson, Smith & Co., Beaver Falls, Pa.

The "Fitchburg" Automatic Cut-off Horizontal Engines. The "Haskins" Engines and Boilers. Send for pamphlet. Fitchburg Steam Engine Co., Fitchb'g, Mass.

For Wood-Working Machinery, see illus. adv. p. 62.

Eclipse Portable Engine. See illustrated adv., p. 62.

Elevators, Freight and Passenger, Shafting, Pulleys and Hangers. L. S. G ves & Son, Rochester, N. Y.

Tight and Slack Barrel machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 61.

For Alcott's Improved Turbine, see adv. p. 45.

Wheels and Pinions, heavy and light, remarkably strong and durable. Especially suited for sugar mills and similar work. Circulars on application. Pittsburg Steel Casting Company, Pittsburg, Pa.

C. J. Pitt & Co., Show Case Manufacturers, 226 Canal St., New York. Orders promptly attended to. Send for illustrated cat lo ue with prices.

4 to 40 H P. Steam Engines. See adv. p. 63.

For best low price Planer and Matcher, and latest improved ash, Door, and Blind ac iner , Send for catalogue to Rowley & ermance Williamsport, Pa.

Elevators.—Stokes & Parrish, Phila., Pa. See p. 61.

NEW BOOKS AND PUBLICATIONS.

AN ELEMENTARY TEXT BOOK OF BOTANY. From the German of Dr. K. Prantl. Revised by S. H. Vines, M.A., D.Sc., F.L.S. Illustrated. Philadelphia: J. B. Lippincott & Co.

Professor Prantl bases his text book on the voluminous "Lehrbuch" of Professor Sachs. The English editor of the translation has adopted the general classification of thallophytes proposed by Professor Sachs in the fourth edition of his work, and has rearranged the various families of the group to correspond. Otherwise Professor Prantl's text has been for the most part closely followed.

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) P. C. C. asks: What will remove stains from silk caused by new rich milk? The fabric was dyed an indigo blue; the original color was ashes of rose (a species of drab). Have tried lustral spirits, which is a distilled benzine preparation, also chloroform, ether, alcohol and ammonia, detersive soap, etc. A part of the spot is removed, apparently the oleaginous, but a stain remains. A. Rub well into the spots purified ox gall, mixed with an equal volume of soft water and a small quantity of fuller's earth; wash out with soft water, press between sheets of filtering paper with a hot iron, and brush. If the color has been discharged the judicious application of a little aniline blue or indigo extract dissolved in water will revive the parts.

(2) F. S. B. writes: I desire to know the proper acid mixture by which I can etch names upon steel, by melting a thin layer of beeswax upon the steel, then writing the name, and then putting on the acid. A. The etching fluid may consist of: 1. Nitric and acetic acid, each 1 part, water 3 parts. 2. Sulphate of copper, alum, and salt, equal parts, moistened with vinegar. 3. A strong solution of pyrogallic acid in water. The first is more active. Better use as a ground a mixture of equal parts asphaltum, Burgundy pitch, and beeswax. Melt together, pour into water, press out, and wrap in two thicknesses of silk. Rub this over the warm steel plate or surface.

(3) J. A. writes: In looking over my paper this evening (SCIENTIFIC AMERICAN, May 29th), I noticed vats for nickel plating. Thinking there was nitric or other acids used for plating, and as they appeared to be made with wood, I thought I might get some information that would help me out of what we find a great difficulty. We require a nitric acid bath 34 inches long, 30 inches high, 27 wide, for striping silk ribbons, etc., for redyeing. Of course the acid is diluted, say ¾ water to ¼ acid. they be made with wood to last any time? If so, what wood is best, or is there any thing better? A. Vessels of stoneware, glass, or porcelain-enameled iron are used for this purpose. Wood will not answer.

(4) W. H. I., referring to an article by Mr. Chase in No. 219, SUPPLEMENT, on building a canoe, asks whether it is to have a keel project from the bottom or is to be smooth. If smooth, should there not be a notch cut in the bottom of the pieces for bulkheads to admit keelson? A. There is to be no keel; the bulkheads to be jogged on keelson.

(5) L. J. O. writes: 1. I am making a telephone transmitter as described in your issue of May 8, 1880. I am desirous of having my battery at one end of the line, instead of one at each end, as one end will be exposed to frost in winter. Could you show me how the connections should be made? I can put up several wires if required. A. The battery should in all cases be near the transmitter. You should use some form of battery that will not freeze, or protect the battery in some way from the frost. 2. Is the carbon used in electric lighting by incandescence the same as is used in the ordinary electric light? A. Yes, but the pencil is usually much smaller in diameter.

(6) R. R. W. writes: Suppose a vessel is placed in a rain storm when the rain is falling exactly perpendicular; now, if the same vessel is placed in a storm when the rain is falling slanting, that is, at an angle, will the vessel contain the same amount of water each time, everything being equal? A. The vessel would receive less water when the rain falls at an angle, all other things being equal. Supposing the column of rain drops entering the vessel to be circular, the angular direction of the rain would give an elliptical section to the column which would be larger than the top of the vessel, and as a consequence some of the rain would fall outside the vessel.

(7) R. P. J. asks: What will drive away house ants? I have some at my house and they are very troublesome, and I have tried various things, but with no success. A. Dalmatian insect powder. Powdered borax with a little sugar. Blow into the cracks and crevices with a small bellows.

(8) B. F. V. writes: 1. I have a boat hull, extreme length 25 feet 7 inches; width, 5 feet 3 inches; depth at prow 3 feet, at stern 2 feet 3 inches, outside measure; the sides are 2 inches thick. It is made of well seasoned cotton wood, ⅞ inch thick, sawed to shape, not bent; then the pieces were well matched and nailed down, piece upon piece, with eightpenny nails, the nails about six inches apart. Thus the hull is built up of layers of strips, 7-8 x 2 inches without rubbing, etc., on the inside of the hull. The weight of hull is appropriately about 1,000 lb. Her prow is long and tapers well. The keel tapers away from the prow to about midway aft, where the bottom becomes flat. How much canvas will she safely carry, and what style of rigging is best suited for inland waters, taking into account appearance and ease of handling? A. We can give no opinion about the amount of sail that can be carried, not knowing the model. We should say a jib and a shoulder of mutton sail, mast say 20 to 22 feet in length. You will probably have to carry ballast and add to the keel. 2. If steam were used, what power would be required to make about ten miles an hour? Would one horse power do? A. Neither one horse nor four horse will do it. 3. What size, pitch, and revolution of screw? A. A screw could not be used with success on account of the light draught of water.

(9) A. K. D. asks whether the pressure in a steam boiler is greater under the water than it is above the water? If so, why? A. It is. To get the pressure on the bottom, add to the steam pressure one pound for every twenty-six inches depth of water.

(10) J. N. S. writes: I want to get a cylinder large enough to force in with force pump 6,000 cubic feet of coal gas. How large a cylinder will it require, and at what pressure to the square inch? Please give size of cylinder in diameter and length, also the pressure to the square inch. A. If the 6,000 feet gas, approximately, be at the pressure of the atmosphere, and it is forced into a cylindrical receiver 43 inches diameter by 10 feet in length, the pressure will be 295 lb. per square inch, providing the temperature of the gas remains unchanged at the end of the process.

(11) I. S. asks: What will set the colors in cotton goods before washing? It is said turpentine will set blue, but how much? and what will set reds, green, and yellows, and how if two of these colors are in the same piece? Even the browns wash out. A. The attempt to render such colors on finished goods fast is likely to prove unsatisfactory and unprofitable. In washing such goods a little salt may be advantageously added to the waters, which should be soft and not too hot, and the cloth should not be allowed to remain longer in the water than is absolutely necessary.

(12) M. H. D. asks: What will remove printer's ink from linen or paper? A. Plenty of naphtha or benzole, strong, hot, caustic soda, or potash solution (in water).

(13) J. H. C. asks if a canoe, 13 feet long, 24 inches wide, and 18 inches deep, could be run by a hand pump, sucking the water in at one end, and sending it out the other, through a nozzle, made so as to form the rudder. If so, what kind of a pump? A. No; a pump would move the boat, but with much less rapidity than with the same power applied to oars.

(14) G. J. L. asks: 1. Which of the primary mechanical powers is illustrated in the action of a spring, a clock for example? A. Neither. It operates by its elasticity and is merely a reservoir of power. 2. What is the use of the bar magnet in the telephone, described in SUPPLEMENT, No. 142 (Fig. 4), as I can see no connection between it and any other part? A. The diaphragm of the telephone is always attracted by the magnet, but the force of this attraction is varied by the electrical impulses in the helix which surrounds the magnet. The electrical impulses are generated by the vibration of the diaphragm in front of the magnet of another similar instrument. This changes the force of the magnet and induces currents in the helix surrounding the magnet. These currents, being conveyed to the helix of the receiving instrument, vibrate the diaphragm and reproduce the sounds which vibrated the diaphragm of the transmitting instrument.

(15) S. M. R. asks (1) how to melt brass in an ordinary fire. A. Place it in a sand crucible with a little borax. A coal fire with a good draught will melt it. Place the crucible well down in the fire. 2. How to anneal brass to make it hard or soft. A. To make brass soft heat it to a low red and plunge in water. It cannot be hardened except by rolling or hammering.

(16) J. V. asks how to make bisulphite of lime in a simple way, in small quantities, say ten gallons or so. A. Pass sulphurous acid (gas), derived from burning sulphur, through granular dry slaked lime until the lime will absorb no more. Keep the lime cool.

(17) W. M. S. writes: Can you give me the ingredients and proportions for making a soft solder that will melt quickly at a low temperature, over an ordinary candle or lamp, and to be used for mending tinware? A. Pure lead and tin 1 part each.

(18) F. A. T. asks: How can I restore to their natural color a half dozen ink-stained shirts? A. Most ink stains are readily removed by the application alternately of strong aqueous solutions of oxalic acid and chloride of lime (calcium hypochlorite). Rinse well with water before soaping.

(19) H. J. L. writes: Will you please inform me of the best and also quickest method of dissolving and precipitating pure gold a hundred ounces at a time, also the proportions to be used of chemicals? A. Gold is dissolved by a warm mixture of 3 parts muriatic and 1 part nitric acids. Boil down gold solution when complete, nearly to dryness, dilute with 4 or 5 volumes of water, filter, and add strong solution of sulphate of iron (copperas) until no further precipitate forms. The dark precipitate is finely divided metallic gold. Settle, decant, or filter, and wash with clean water.

(20) D. H. asks for information about artificial wood. What are its component parts? Whether it can be moulded, etc.? A. One preparation so-called consists of a mixture of sawdust and paper pulp moistened with glue water and subjected to hydraulic pressure.

(21) T. J. T. asks how to make a jet black varnish for small wood handles, that will make them smooth and shining, and that will make them hard and solid, so that they will not get dim by handling, or lose their gloss. A. The varnish consists of: Asphaltum, 3 oz.; boiled oil, 4 quarts; burnt umber, 8 oz.; and enough oil of turpentine to thin. The three first must be mixed by aid of heat and the turpentine gradually added (out of doors and away from fire) before the mixture has cooled. The work (dry) is given several coats, each being hardened in a japanner's oven. The last coat may be rubbed down, first with tripoli (applied on a soft cloth), then with a few drops of oil.

(22) W. H. T. asks: 1. What is the net percentage of gain from the use of the live steam jacket on steam engine cylinders? If there is no recorded experiments that will show it clearly, give your opinion as to its approximate value. A. There have been many experiments to determine the gain, and with very differing results. Under ordinary conditions it is probably not more than 5 per cent, often less. 2. Is the white oxide on zinc sheets poisonous? A. Yes. 3. Is any noxious gas given off during its formation? A. No.

(23) J. H. writes: We have a large lot of white bone tufting buttons, and on account of the color are no use to us. Can you tell me how we can color them a permanent black, or a good deep brown? A. Boil them in a strong aqueous decoction of logwood or logwood extract, then in solution of sulphate or persulphate or acetate of iron. 2. We also have a lot of beeswax, but entirely too black and dirty for our use in the business. How can we make it more clear so as to be useful? A light yellowish brown would do. A. Wax, 1 lb.; chloride of lime, 2 oz.; water, 1 pint. Heat the wax to about 212° Fah., and agitate with it the water and bleaching powder until the wax is whitened. Then agitate with a quantity of water containing about 5 per cent of sulphuric acid. Wash in boiling water, draw off and melt. Use lead lined vessels.

(24) M. A. D. asks: Will pumping the air out of an air tight vessel partially filled with water cause the water to freeze or turn cold? Would putting any kind of chemicals in another larger vessel around the air tight vessel help to turn it cold? If so, what kind of chemicals? What vacuum would have to be arrived at to freeze or turn very cold? A. Small quantities of water may be frozen in this way, provided the pumps are capable of maintaining a good overcurrent (say of 750 mm.); suitable provision i made for the rapid absorption of the aqueous vapor given off by the water and the vessel containing the water to be frozen is properly sheathed during the operation in non-conducting material. The absorbent for the vapors used may be strong sulphuric acid placed in a large vessel immediately adjoining the one containiug the water and intermediate between it and the pumps. Small machines on this principle, made by Carre, of Paris, are in use. See "Ice and Ice Machinery," Knight's New Mechanical Dictionary.

(25) R. M. writes: 1. In making brine for curing beef tongues it is customary to use, besides the salt and water, a little molasses and saltpeter. Now, can you tell me why the molasses and saltpeter are used? All market men know that it is the proper thing to do, but I cannot find one who can explain their action on the tongues. A. Sugar (or molasses) is a powerful antiseptic, and in connection with salt preserves the flavor of the meat better than salt alone. Niter in the brine keeps the meat red and of a healthy color. 2. What liquid produces the greatest degree of cold in evaporating? A. That which evaporates most rapidly. Liquefied hydrogen stands at the head of the list.

(26) J. E. H. asks: 1. What is the best lacquer or varnish to apply to the bright parts of a bicycle to prevent their rusting and still have them look bright? A. Use a thin, clear alcoholic solution of bleached shellac. 2. Should the grease be removed before putting on the varnish? A. Yes.

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