

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry.

MUNN & CO.

- Marine Iron Works, Chicago. Catalogue free.
Inquiry No. 6126.—For quotations on packing tin in parts, also for the necessary machinery in putting them together.
AUTOS.—Duryea Power Co., Reading, Pa.
Inquiry No. 6127.—For makers of tire-setting and shrinking machines.
"U. S." Metal Polish, Indianapolis. Samples free.
Inquiry No. 6128.—For parties to manufacture agricultural implements in quantities.
Perforated Metals, Harrington & King Perforating Co., Chicago.
Inquiry No. 6129.—For makers of iron tanks for storing water, about 50 barrel capacity, for country residence.
Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.
Inquiry No. 6130.—For makers of outfits for plating silverware.
If it is a paper tube we can supply it. Textile Tube Company, Fall River, Mass.
Inquiry No. 6131.—For an engine of the vertical inverted, fore and aft compound or triple expansion type, having high-pressure cylinder about 4 inches diameter and 2 to 4 1/2 inches stroke, with proportions of intermediate and low pressure cylinders suitable to work an initial pressure as high as 700 pounds to run the engine at about 400 pounds under ordinary work.
Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.
Inquiry No. 6132.—For makers of wire nail-making machines.
Agents wanted to sell the Ryede puzzle. Sample by mail for 10c. Ryede Specialty Works, Rochester, N. Y.
Inquiry No. 6133.—For makers of pocket electric lights, having the liquid system, not dry battery.
If you wish to buy patents on inventions or sell them, write Chas. A. Scott, 340 Cutler Building, Rochester, N. Y.
Inquiry No. 6134.—For manufacturers of German silver seamless hard-drawn tubing 3/16-1/8 inches O. D.
We manufacture anything in metal. Patented articles, metal stamping, dies, screw mach. work, etc. Metal Novelty Works, 43 Canal Street, Chicago.
Inquiry No. 6135.—For makers of "Feather Weight Stereotypes."
Patented inventions of brass, bronze, composition or aluminum construction placed on market. Write to American Brass Foundry Co., Hyde Park, Mass.
Inquiry No. 6136.—For the address of the "Union Cash Register Co."
The celebrated "Hornby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company, Foot of East 138th Street, New York.
Inquiry No. 6137.—For manufacturers of machines for making mandolin and guitar bass strings.
Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, machinery and tools. Quadriga Manufacturing Company, 15 South Canal Street, Chicago.
Inquiry No. 6138.—For the present address of the Tower Coupler Co.
Adding, multiplying and dividing machine, all in one. Felt & Tarrant Mfg. Co., Chicago.
Inquiry No. 6139.—For parties handling mail order novelties.
WANTED.—Address of the makers of latest machines for curling hair for upholstery purposes. C. Nolan & Sons, Devonshire Street, Cork, Ireland.
Inquiry No. 6140.—For an apparatus for quickly determining the intrinsic value of various coals.
FOR SALE.—Patent on wood split pulley can be bought at a bargain. There is none better manufactured. Address F. J. Ranford, 22 State St., Seneca Falls.
Inquiry No. 6141.—For manufacturers of cast steel wheel centers for locomotives, tenders and wagons.
Complete Machine Shop for Sale.—For manufacturing small articles and novelties. With stock of good-selling novelties and all orders. Price \$2,300. A. Wegener, 42 E. 71st Street, New York.
Inquiry No. 6142.—Wanted, to purchase or lease on royalty a good patent, preferably in the hardware line.
Send for new and complete catalogue of Scientific and other books for sale by Munn & Co., 361 Broadway, New York. Free on application.
Inquiry No. 6143.—For parties to make soft rubber goods, such as toy balloons.
Inquiry No. 6144.—For makers of plate mirrors suitable for mantels.
Inquiry No. 6145.—For manufacturers of a cotton candy-making machine.
Inquiry No. 6146.—For makers of small lamp chimneys used in railroad signals.
Inquiry No. 6147.—For dealers in stag horn for handles of knives; either cut in leaguers or whole horns.
Inquiry No. 6148.—For manufacturers of the "American Horse Saddle."
Inquiry No. 6149.—For machinery for making slat and wire fencing.
Inquiry No. 6150.—For makers of the "Black Diamond" incandescent gas mantles.
Inquiry No. 6151.—For wholesale dealers in supplies for making fishing poles, as split bamboo, handles, etc.
Inquiry No. 6152.—For manufacturers of wood-working machinery.
Inquiry No. 6153.—For manufacturers of boilers, engines, dynamos, incandescent lamps, pumps, wire, cord, sockets, etc.
Inquiry No. 6154.—For parties who build motor and delivery wagons.
Inquiry No. 6155.—For prices and particulars of steam stamp quartz mills.
Inquiry No. 6156.—For dealers in perforated zinc and coarse and fine woven wire screens.
Inquiry No. 6157.—For complete outfit for a foundry and machine shop for doing repair work from locomotives down.
Inquiry No. 6158.—For makers of tools for bent iron work.
Inquiry No. 6159.—For makers of legitimate, coin-controlled slot machines, moving pictures, etc.
Inquiry No. 6160.—For machines for moving, replanting and pulling up roots of trees.
Inquiry No. 6161.—For manufacturers of coin-counting machines.



HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.
References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.
Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.
Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.
Scientific American Supplements referred to may be had at the office. Price 10 cents each.
Books referred to promptly supplied on receipt of price.
Minerals sent for examination should be distinctly marked or labeled.

(9472) M. K. says: I take the liberty of addressing you in view of securing the following information, for which I thank you in advance. Kindly tell me how the field of an alternating-current motor, of the Westinghouse type, is wound. A. There are many forms of alternating-current motors made by the Westinghouse Company, the windings of which differ from each other. Each one is wound after its kind. If you apply to the Westinghouse Company, they will doubtless be willing to explain to you any particular type in which you may be interested. In general, it may be said that the polyphase motor does not resemble a dynamo in its windings as closely as does the direct-current motor. Polyphase motors have a stationary and a rotating part; the stationary part is called a stator, and the rotating part is called a rotor. The stator in most motors has sets of coils in which the polyphase currents produce a rotary field. The rotor has closed coils in which the field produces closed currents, with the result that a torque or pulling force is produced, which causes the rotor to turn around, following the pull of the rotary field. The coils of the rotor may be copper bars imbedded in slits of the laminated steel or iron core. These bars are connected to copper collars at the ends of the rotors. Such an arrangement is called a squirrel-cage rotor, or armature. See Sheldon's "Alternating Current Machines," price \$2.50.

(9473) E. H. A. asks: Would not an expanding jet of steam travel slower at its expanded end than at its issuing end? If so, is it not paradoxical or illogical to enlarge the compound end of the Parsons steam turbine, so as to cause the blades at that end to revolve at a higher speed than the first sections of buckets getting the liveliest steam? A. The velocity of steam in an expanding nozzle varies adiabatically and inversely with the increasing area of the nozzle. Its expansion in the inverted cone does not increase its velocity, but does increase its area of impact on the blades of the turbine, and so balances the loss of velocity. The velocity of steam issuing from a nozzle to the atmosphere at 100 pounds pressure is 895 feet per second; while if issuing into a vacuum from the same pressure it is 1,700 feet per second, which suggests the enlarged terminal sections of the steam turbine as a condensing engine.

(9474) R. G. B. asks: 1. Is there any constant relation between watts and foot pounds per second? 550 foot pounds per second equals 1 horse power. 746 watts equals 1 horse power. Can foot pounds be calculated in watts, and vice versa? A. You say "550 foot pounds per second equals 1 horse power, and 746 watts equals 1 horse power." Since things which are equal to the same thing are, in the same sense, equal to each other, why do you not say, 550 foot pounds per second equals 746 watts? 746 watts will in 1 second exert a horse power in a motor, and will continue to do so as long as the motor runs. Watts and foot pounds are interchangeable as given above. 2. How can the horse power of a single-cylinder, vertical, two-cycle, gasoline engine be determined, when the apparatus necessary for calculating the brake horse power is not at hand? A. There are but two reliable methods of testing the power of a gasoline engine. First, the indicated power as registered on a card by an indicator, from which the mean pressure may be measured and the indicated horse-power computed. Second, the actual or brake horse-power taken by a Prony or any other form of brake. The difference between the indicated and brake horse-power is the power lost by the friction of the engine. Third, a method based on the heat units of the fuel fed to the engine in a given time, from which must be deducted the heat units carried off in the exhaust by the cooling water, and by radiation, leaving a balance assignable to indicated power. Still another method of determining the power is the Renard dynamometric fan described in SUPPLEMENT, No. 1460.

(9475) H. H. C. asks: Will you kindly answer me in the Notes and Queries column of the SCIENTIFIC AMERICAN the following question: I find that when the street-car tracks are connected with a direct line to the dynamo, a current of about twenty volts

and high amperage results. When the car is at the place tapped, the voltage is highest, and diminishes as the car proceeds from that point; also when the car stops the current stops, thus causing a current which is not continual. Will passing the current through a storage battery, or some other receptacle, produce a continual current between the "governor" and dynamo? A. You say you find a drop of voltage of twenty when a wire is taken from a street rail direct to the dynamo, which is highest when the car is at the place tapped. The voltage is then highest because the resistance in ohms is less from the trolley wire to the dynamo. As the car goes away further from the dynamo, the resistance increases from the trolley to the dynamo, and thus the drop of voltage from the place tapped to the dynamo is less. There are the same volts all the time from the plus wire to the dynamo, except for the drop between the dynamo and the trolley along the plus wire, which is usually the upper wire, on which the trolley bears. When the car stops, current is shut off, and of course none shows on the wire you have cut in between the rail and the dynamo. Passing the current through a storage battery will not help the current. If a storage battery is charged from the return current of a trolley line, that battery can be afterward used.

NEW BOOKS, ETC.

HANDBOOK OF GASOLINE AUTOMOBILES. Association of Licensed Automobile Manufacturers. New York. 1904. Pp. 83.

It is seldom that we review a catalogue, but in the present instance it is merited, as it illustrates all the principal types of automobiles which are manufactured and imported under the license of the Association of Licensed Automobile Manufacturers, under the basic patent granted to George B. Selden. The catalogue is beautifully gotten up, and shows a very large number of types of machines. It is an admirable book of reference, and should be in the possession of all who are interested in automobiling.

GOLD ASSAYING. By H. Joshua Phillips. New York: D. Van Nostrand Company, 1904. 8vo.; pp. 138. Price, \$2.50.

This work is a practical handbook for the use of chemists and assayers. It contains, besides opening chapters on the natural appearance and forms of gold, its physical characters and chemical properties, and the sampling of gold ore, articles on the assay furnace, cupellation, parting, scorification, the assay of bullion, and assays in cyanidation, chlorination, and amalgamation processes, which are all thoroughly described. A valuable appendix contains much information about the coinage of the different countries, and the amount of gold produced by various well-known mining districts. A very complete index aids in making the book useful.

MODERN ELECTRICITY. By James Henry, M.E., and Karel J. Hora, M.Sc. Chicago: Laird & Lee, 1904. 12mo.; pp. 355; 150 cuts. Price, \$1.

This volume is intended as a practical handbook for students, apprentices, and electrical engineers. Besides the principles and formulas governing electricity, which, by the way, are presented in as simple a manner as possible, the book contains many practical examples and their answers, from the study of which much useful knowledge may be obtained. The scope of the book is considerable, dealing as it does in the first place with static electricity and ending with X-rays, wireless telegraphy, and radium. Besides having this wide scope, it also deals with electrical machinery, batteries, wiring, etc., in a very practical manner.

A TEXTBOOK ON CERAMIC CALCULATIONS. By W. Jackson, A.R.C.S. New York: Longmans, Green & Co., 1904. 12mo.; pp. 67. Price, \$1.

This book is not a practical work on pottery and porcelain manufacture, but is given up wholly to mathematical calculations and the like, which will be found of use to all students and workers in clay, pottery, and porcelain. Among other things, it treats of the loss of weight of potter's material on drying and firing; of the fitness of ground materials; the calculation of formulae of compounds from their percentage compositions, and vice versa; the compounding of mixtures of definite composition from substances of known chemical composition, and the application of this knowledge to the complete synthesis of mixtures of known formulae from raw materials of given composition. The rational analysis of clays, and the methods of calculation based upon it, as well as the application of such analysis to the synthesis of bodies, is another of the subjects dealt with.

TALKING MACHINES AND RECORDS. By S. R. Bottone. London: Guilbert Pitman, 1904. 12mo.; pp. 86; 40 illustrations. Price, 60 cents.

This book is the latest addition to the series on electric and scientific subjects from the pen of that well-known experimentalist, Mr. S. R. Bottone. It describes the principles and methods of constructing various sound-reproducing machines, and also gives practical directions for making a simple and efficient

phonograph. A brief historical outline of the work of different experimenters, which has led to the perfection of the phonograph, is also included.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending October 25, 1904

AND EACH BEARING THAT DATE

[See note at end of list about copies of these patents.]

Table listing inventions and their patent numbers. Includes items like Acid and making same, ureide of dialkyl-acetic, Fischer & von Mering (773,251); Advertising device, L. L. M. Salisbury (773,526); Air, apparatus for the electrical treatment of, Mitchell & Parks (773,407); Alloy, making, R. S. Anderson (773,450); Amalgamating machine, G. C. Scott (773,206); Antiseptic attachment for telephone mouthpieces, G. B. Grimm (773,286); Arch construction, G. L. Junge (773,149); Arc-facitor, A. P. Stokes (773,290); Automobile frame, F. W. Darnsnaedt (773,480); Automobile throttle and steering lever, C. W. Meyer (772,949); Awning locking device, O. H. Cloyd (773,311); Bag, H. S. Moses (773,514); Bake pan basting and roasting attachment, N. T. & R. E. Benford (772,907); Baling press, M. J. Foster (772,929); Baling press, W. T. Hulscher (773,325); Baling press, J. W. & W. C. Lindsay (773,510); Basin fixture and basin wash, C. H. Moore (773,408); Basket, folding, W. 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