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.

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Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.

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Let me sell your patent. I have buyers waiting. Charles A. Scott, Granite Building, Rochester, N. Y.

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Want you to read our Ad. on page 455. A Money-making Metalworking and Stamping plant for sale.

Inquiry No. 3545.—For a mashine for pouring jam.

Machinery designed and constructed. Gear cutting, The Garvin Machine Co., 149 Varick, cor. Spring Sts., N.Y.

Inquiry No. 3546.—For waterproof paper bags.

Manufacturers of patent articles, dies, stamping tools, light machinery. Quadriga Manufacturing Company, 18 South Canal Street, Chicago.

Inquiry No. 3547.—For dealers in scrap buck horn.

FOR SALE.—Patent on cheap contrivance that is indispensable in every store. Certain to sell quickly. A. L. & O. Sovelius, Hancock, Mich

Inquiry No. 3548.—For a small, direct-current motor for battery circuits, to run on 15 to 25 v. current.

The largest manufacturer in the world of merry-go-rounds, shooting galleries and hand organs. For prices and terms write to C. W. Parker, Abilene, Kan.

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We manufacture anything in metal. Patented articles, metal stamping, dies, screw mach. work, etc. Metal Novelty Works, 43 Canal Street, Chicago.

Inquiry No. 3550.—For makers of automobile passenger vehicles or caretts.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

Inquiry No. 3551.—For makers of voting machines.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, $5. Munn & Co., publishers, 361 Broadway, N.Y.

Inquiry No. 3552.—For a set of machinery for polishing, burnishing and grading pecan.

We manufacture on contract: patented hardware specialties, tools, dies, metal stampings, special machinery, etc. Edmonds-Metzel Mfg. Co., 778 West Lake Street, Chicago.

Inquiry No. 3553.—For makers of hydraulic presses for bending the cranks of crank shafts for weaving looms.

Gasoline Automobile Batteries. William Roche's "Autogas" used properly will carry vehicle twice as far as any other battery of same weight. William Roche, inventor and manufacturer, 42 Vesey Street, New York, N. Y., U. S. A.

Inquiry No. 3554.—For dealers in Robinson's odontograph.

To Ambitious Persons.

A prominent business man of New York City writes that he would like to come in touch immediately with a few well-recommended people who desire a higher education. This gentleman (whose name is withheld at his request) has at his disposal a limited number of Free Tuition Contracts in a well-known educational institution for home study. This school can teach you to become a Practical Engineer, Electrical Engineer, Electric Railway Engineer or Telegraph Engineer, Illustrator, Caricaturist Ad-writer, Journalist, Proof-reader, Bookkeeper, Stenographer. If you are awarded one of these Free Tuition Contracts, the only expense to you while you are studying will be the cost of instruction papers, postage, etc., this you can pay during the first four months. If you are ambitious to improve your station in life, we should strongly recommend that you write to this gent'eman at once. Address W. L. B., P. O. Box 53 Madison Square, New York City. Be sure to mention Scientific American.

Inquiry No. 3555.—For dealers in sheet, round, rod and flat bar aluminium.

☞ 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. 3556.—For machines for coiling or making coiled wire mats.

Inquiry No. 3557.—For makers of tide and wave motors.

Inquiry No. 3558.—For manufacturers of hard compressed paper pulp articles.

Inquiry No. 3559.—For the makers of Bulner's air pump.

Inquiry No. 3560.—For the agents of the S. & C. Wordlaws steels.

Inquiry No. 3561.—For makers of lace edging for jersey ribbed underwear.

Inquiry No. 3562.—For makers of hay presses operated by animal power.

Inquiry No. 3563.—For dealers in the Sawyer patent cuff holder.

Inquiry No. 3564.—For makers of chrome steel rods or bars.

Inquiry No. 3565.—For makers of mills for grinding mustard seed.

Inquiry No. 3566.—For wood turners of white-wood or poplar turnings; large quantities required.

Notes and Queries.

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.

(8769) L. W. B. says: Will you kindly tell me what are the contents of a piece of timber, board measure, in feet, 6x6 at one end and 18x18 at the other end, 12 feet long, and the mode of calculating same? One party claims 156 feet, another 144, and a third one 180. A. The tapering piece of timber whose contents you wish to know in board measure is a frustum of a pyramid. The easiest way to find its board measure will be to calculate its cubic contents and multiply these by 12 to change to board measure. Its volume is found by the following rule: Find the area of the two ends and the mean proportional between them. Add these together, and multiply the sum by one-third of the length of the frustum.

Large end.....	1.5 x1.5	= 2.25 sq. ft.
Small end.....	.5 x .5	= .25 sq. ft.
Mean proportional..	√2.25x .25	= .75 sq. ft.
Sum		3.25 sq. ft.

Volume, $3.25 \times \frac{12}{3} = 13$ cubic feet.

Board measure, $13 \times 12 = 156$ feet.

(8770) E. B. H. says: Can you suggest a remedy for the removal of rats from the yard? Such a remedy as will not kill domestic animals and such a remedy as will not destroy plants. A. All of the rat poisons, of which white arsenic is the most efficient and most frequently used, are equally poisonous to other animals. Putting a lot of broken glass into their burrows is said to be effective in driving away the rats, as they cut themselves badly in gnawing and burrowing. A ferret turned loose in the yard would quickly kill or drive away the pests.

(8771) J. J. O'B. writes: With the view of settling some technical mechanical problems, I respectfully ask that the following question be answered through the columns of the SCIENTIFIC AMERICAN. Is the elasticity of steel or metal spiral springs (of first-class construction) accurate enough to be employed in the regulating of a time mechanism, either as main parts thereof or as auxiliary parts to pneumatic retarding pistons, such as are employed in the modern photographic shutters? A. The resilience of a well-tempered steel spring is the greatest and most perfect in all parts of its range of any known metal. Its endurance when kept free from rust is also greater than other metals. Its time movement is also perfect if not retarded by other and frictional elements, as the piston and other mechanism of a photographic shutter.

(8772) J. T. M. asks: Do you know of any machine by which shavings and sawdust could be pressed and made available for fuel under boilers? A. Sawdust and shavings are now largely utilized in firing boiler furnaces by blowing the loose material into the furnace. The briquetting of sawdust and shavings has been tried and found inconvenient and expensive. In many woodworking factories the entire waste is burned under the boilers. It is drawn from the machines by a suction fan and deposited in bins at a higher level than the boiler furnaces, to which it is passed by a chute in measured quantities. In other factories it is moistened by a water jet as it passes into a vertical chimney through which the air from the fans passes off, and all dust saved and the nuisance of wood dust in the neighborhood is avoided. The firemen shovel the moist sawdust from the bottom of the chute to the furnace.

(8773) T. C. asks how to make a simple electric water heater suitable for heating a small glue pot, by using the current that supplies the ordinary incandescent light; some sort of arrangement that could be set in the water if possible. A. For an electric heater to be used in place of an ordinary incandescent lamp you should not take more than one ampere of current. German silver wire may be used, No. 24 being a good size. If the current is of 110 volts pressure, 330 feet will be required. If it is 52 volts, about 150 feet will answer. This must be wound and insulated by asbestos, else the fire insurance is void. It should be inclosed in a metallic tube, in order to place it in the water to be heated. Twice the length of iron wire may be used.

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