

Business and Personal.

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Notes & 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 This is for our information and not for publication.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.

(7222) G. M. M. writes: May I not ask you a few questions about the little alternating current dynamo described in your issue of Sept. 11th? 1. Can the body or ring be made of band iron welded together and shrunk on to each other, or wound up and riveted, and in that way make up the thickness? A. Band iron strips rolled and welded together and shrunk on in layers would answer the requirements electrically, but would require additional work and would not be as good mechanically, as this construction would require the bearing plates being bolted on the sides, which is a less rigid method than bolting through the edge of a solid ring. 2. Will wrought steel studs, without such big heads and no nuts, do just as well? Will cast brass spoils do? A. Wrought iron studs with smaller heads would answer in place of bolts if you have devised an approved method of attaching them to the ironing. 3. Cannot the bearing plates be cast iron or brass and bolted to the sides of the ring instead of on the edge? A. If cast brass spoils are used they must be turned down as thin as the built up spoils in order to hold the same amount of wire. If the brass coil is thicker, the magnet will be further from the coil and less active. 4. Will the linear measure you give answer for enlargement to double or treble the size machine? A. The measurements given may be enlarged to twice or three times the size, but bolts and fittings must be enlarged in proportion also, as well as the thickness of the ring, etc. 5. Would sheet iron, say 20 or 24 gage, do for the armature on a larger machine? A. The sheet iron for the armature must be the thinnest procurable for efficiency. An armature for an alternator built from thick iron sheets is very wasteful. 6. Will wrought iron or soft steel do as well as brass on any part of the machine? A. Wrought iron or soft steel will answer in place of brass, for bearing plates and trimmings. 7. Would larger gage wire be best for a larger machine? A. Wire for a larger machine must be determined by calculation. Wire for the larger armature is a matter of requirements of the machine, and must be worked out by one familiar with the designing of dynamos. 8. Will this dynamo work as a motor? A. The machine is not intended to act as a motor. Single phase generators may be made to run as motors by putting them "in step" with a proper alternating current, as they are not self-starting.

(7223) C. V. S. asks: 1. Will you please give me a cement that will stand alcohol? A. For a cement which will resist alcohol use the best glue; pour on it an equal quantity of water, let it soak over night and then add fine Paris white or white lead. Mix well and add a little acetic acid, carbolic acid or oil of cloves. 2. What kind is used in fish aquarium? A. We can send you two papers on receipt of twenty cents which will give you formulas for aquarium cements. 3. Can you tell how to solder glass, and if it is practical to do so? A. Soldering glass and porcelain with metals may be performed by M. Cailletet's process as follows: The portion of the tube that is to be soldered is first covered with a thin layer of platinum. This deposit is obtained by covering the slightly heated glass, by means of a brush, with very neutral chloride of platinum, mixed with essential oil of chamomile. The oil is slowly evaporated and, when the white and odoriferous vapors cease to be given off, the temperature is raised to a red heat. The platinum is then reduced and covers the glass tube with a bright layer of metal. On fixing the tube thus metallized, and placed in a bath of sulphate of copper, to the negative pole of a battery of suitable energy, there is deposited upon the platinum a ring of copper, which should be malleable and very adhesive if the operation has been properly performed. In this state, the glass tube covered with copper can be treated like a genuine metallic

tube and be soldered by means of tin to iron, copper, bronze, platinum, and all metals that can be united with tin solder. The resistance and strength of such soldering are very great. M. Cailletet has found that a tube of his apparatus for liquefying gases, the upper extremity of which had been closed by means of an adjutage thus soldered, resists pressures of more than 300 atmospheres. The tube, instead of being platinized, may be silverized by raising the glass covered with nitrate of silver up to a heat bordering on red. The silver thus reduced adheres perfectly to the glass, but numerous experiments have caused platinizing to be preferred to silverizing in the majority of cases.

(7224) N. F. asks: Will you kindly inform me through Notes and Queries how to silver glass by nitrate of silver process, also if a gold deposit can be put on, and by what process? Refer me to any SUPPLEMENTS on the subject. A. Good formulas for silvering glass are given in the SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 105, 501, 895 and 1006. Information on the electroplating of glass will be found in SUPPLEMENT, No. 85, price 10 cents each by mail.

(7225) N. S. F. writes: I want to make a small camera, using a single achromatic lens, capacity 4x5. The focal length will, I suppose, be about 6 or 7 inches, and I propose to use three stops, 1/8, 1/16 and 1/32 focus. 1. How far in front of the lens should the stops be placed? A. Near; say 1/8 inch. 2. How much range should I give the sliding parts to focus from 5 to 50 or 100 feet? A. About 2 inches. 3. Should the lens be mounted with the convex part in front like a telescope or with the plane face front? A. Plane face in front. 4. If I should want to use the same lens for an enlarging camera, should the face that is front in the photographic camera face the negative or the enlargement? A. Plane face in front.

(7226) C. S. says: Please inform me through the SCIENTIFIC AMERICAN, in the Notes and Queries columns, of the numbers of SCIENTIFIC AMERICAN and SCIENTIFIC AMERICAN SUPPLEMENT containing illustrations of modern war vessels. A. In our SUPPLEMENT catalogue, which is mailed free to any address, you will find a large number of illustrations of war vessels listed and arranged according to countries. We shall be pleased to furnish to prospective purchasers of the paper lists of the vessels which have been published in the SCIENTIFIC AMERICAN.

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INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted OCTOBER 19, 1897, AND EACH BEARING THAT DATE.

Table listing various inventions with their respective patent numbers and dates. Includes items like 'Adding machine, typographical, T. A. Trent, Jr.', 'Air or water wheel, C. W. Hunt', 'Amalgamating apparatus, L. Baudendistie', etc.

Advertisements.

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Star Foot power Lathes Automatic Cross feed 9 and 11-inch Swing. New and Original Features. Send for Catalogue B. Seneca Falls Mfg. Company, 695 Water St., Seneca Falls, N.Y.

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Table listing various mechanical and industrial items with their respective prices. Includes items like 'Carpet stretcher, J. E. Drake', 'Carriage, folding baby, Craig & Taylor', 'Carriage cases, die for making, W. Mason', etc.

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