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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 This is for our information and not for publication.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. We are 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.

(7092) C. E. B. asks how to make a paste or glue that will answer to paste a photograph or lithograph on glass, and not to show the paste, and how to treat same. A. To mount prints take 4 ounces gelatine and soak half an hour in cold water, then place in a glass jar, adding 16 ounces of water; put the jar in a large dish of warm water and dissolve the gelatine, add a small quantity of glycerine, say 1 ounce. When dissolved pour into a shallow tray. Have your prints rolled on a roller, albumen side out; take the print by the corners and pass rapidly through the gelatine, taking great care to avoid air bubbles. Hang up with clips to dry; when dry squeeze carefully on to the wet glass. The better the quality of glass, the finer the effect.

(7093) G. G. W. asks for a copper polish to be used for cleaning the work board in a saloon. Until lately I have been able to buy a polish that answered all requirements, but am unable to get it at present. It was a powder of a reddish cast and required no rubbing whatever. Could you give me an idea as to its composition? Have tried bichromate potash and pumice stone and got nearly the same action, but it stained the hands. A. Rub the metal with rottenstone and sweet oil, then rub off with a piece of cotton flannel, and polish with soft leather. A solution of oxalic acid rubbed over tarnished brass soon removes the tarnish, rendering the metal bright. The acid must be washed off with water, and the brass rubbed with whiting and soft leather. A mixture of muriatic acid and alum dissolved in water imparts a golden color to brass articles that are steeped in it for a few seconds. The red powder you mention is probably rouge.

(7094) S. F. asks: Will you please a constant reader of your valuable paper by answering the following question? Is there a cement that is insoluble; in other words, a cement that will not liquefy with heat? A. The following are formulas for fireproof cements. Our correspondent fails to give the use to which the cement is to be put, which is necessary to give a formula which will apply. 1. Iron filings, 140 parts; hydraulic lime, 20; quartz sand, 25; salamoniac, 3. These are formed into a paste with vinegar, and then applied. The cement is left to dry slowly before heating. 2. Iron filings, 180 parts; lime, 45; common salt, 8. These are worked into a paste with strong vinegar. The cement must be perfectly dry before being heated. By heating it becomes stone hard. 3. Linseed or almond meal, mixed to a paste with milk, lime water, or starch paste, resists a temperature of 500° Fah. (260° C.) 4. Clay is puddled with water, and to it is added the greatest possible quantity of sand, which has been passed through a hair sieve; the whole is worked up in the hands, and applied in coats more or less thick on vessels needing protection from the direct action of the fire. 5. 1 part of sifted manganese peroxide, 1 part pulverized zinc white, sufficient commercial soluble glass to form a thin paste. To be used immediately. Becomes very hard, and presents a complete resistance to red heat and boiling water. 6. As a coating for glass vessels, to protect them from injury during exposure to fire, pipe clay and horse dung are made into a paste with water. This composition is applied by spreading it on paper; it is used by pipe makers and will stand the extreme heat of their furnaces for twenty-four hours without damage. 7. Shredded tow or plumbago is substituted for the horse dung. 8. Clay, 5 parts; iron filings, 1 part; and linseed oil varnish q. s. to

mix. 9. 10 parts common clay dried and pulverized; 4 parts iron filings; 1 part common salt; 1 part borax; 2 parts manganese peroxide.

(7095) H. J. F. asks: 1. If I build dynamo illustrated in SUPPLEMENT, No. 600, twice the size given, what will the production be? A. The power of a dynamo should vary with the fifth or sixth power of its lineal dimensions. The power of dynamos of lineal ratio 1:2 should be 1:32 or 1:64. It would be safer to take the mean, say 1:48. 2. I wish to build a 25 light dynamo; what type would you recommend? A. The bipolar drum armature type such as given in our SUPPLEMENT, Nos. 600 and 855. The latter for 75 lamps is highly recommended. 3. Can I obtain drawings in detail of either an Edison or Westinghouse dynamo of about 25 or 50 lights? A. The nearest we have is the SCIENTIFIC AMERICAN dynamo in SUPPLEMENT, No. 865, just alluded to. 4. I wish to make a voltmeter. Can you furnish me a SUPPLEMENT describing same? A. See our SUPPLEMENT, Nos. 853, 852, 556; for alternating current see Nos. 668, 734, 933. 5. Can I remould carbons by first pulverizing and adding a solution to make a paste and then baking them? A. The manufacture of moulded carbons is described in our SUPPLEMENT, No.

(7096) W. C. asks what calcium tungstate is that is used for X ray fluoroscopes. A. It is a white, somewhat crystalline or granular salt, made by heating together sodium tungstate and a calcium salt, such as calcium chloride. By treatment of the cooled mass with water the sodium salt formed is dissolved, leaving the insoluble calcium tungstate. Its formula is CaWO4.

(7097) B. M. asks how the copper deposit on carbon stick is put on. Can the same be done with graphite? If so, how? A. It is put on by electric deposition, just as any article is copper plated. The same cannot be done with loose graphite, on account of the impossibility of avoiding "electrolytic soldering" or joining of the particles by the copper deposit.

(7098) A. B. W. asks how to arrange to operate an ordinary 3 inch electric elevator bell from a motor circuit. The elevator is run by an electric motor using a 500 volt circuit and it is desired to take off about 5 volts of this current to operate the bell; will this be practical? If so, how can I construct a simple, inexpensive, and efficient resistance box, which I suppose is necessary for the bell circuit? How much resistance will be required, and of what material? A. The best plan is to take off the current in shunt. By testing find two portions of the circuit sufficiently removed from each other to work the bell satisfactorily, if its line terminals are connected thereto. There will be no trouble in finding such points unless the line from street to motor is very short. A resistance box on so high a voltage is not advisable. If this cannot be done, the resistance can easily be calculated.

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