

candle power incandescent lamps will be lighted, each lamp requiring a voltage of 9 to 12 and amperage 1 to 1½? A. Ten or eleven. 2. How many 3 candle power lamps, each lamp requiring a voltage of 6 to 7 and amperage 1 to 1½? A. Twenty. 3. What size of pure lead wire will 8 amperes fuse? A. A wire 0'04 inch in diameter (approximately).

(6370) F. C. S. writes: How can I melt about two pounds of glass? Can it be done in an ordinary stove in a crucible or not, and will a plaster of Paris mould answer to pour it into? A. Glass cannot be manipulated as you specify. A high and prolonged heat is required, and it must be shaped in moulds by blowing or pressing. Plaster of Paris moulds will not answer. Simple pouring into a mould will not answer.

(6371) J. E. G. asks: 1. In making a machine as described by Mr. Bonetti in the SCIENTIFIC AMERICAN of May 26, 1894, is it necessary to shellac the glass disks, if glass is used? A. Shellac the glass disks. 2. What is mosaic gold that is used to excite the machine and how is it made? A. Bisulphide of tin; it is made by igniting at a low red heat 12 parts tin, 6 mercury, 6 salammoniac, 7 flowers of sulphur. The "mosaic gold" remains in the bottom of the crucible. 3. Are the collectors a set of combs like those on an ordinary Winshurst machine? A. Yes. 4. Are there any acids that I could depend upon to go through glass to make an inch and a quarter hole, and how must I do it? A. Use a copper or brass tube, with emery powder and turpentine. Cement a cork to the glass for a guide and fix the tube in a carpenter's brace and grind through it. No acid can be used. 5. Is plaster of Paris a non-conductor when thoroughly dry and made into moulds? A. It is a very poor one.

(6372) V. M. writes: What is the reason that arc incandescent electric lamps are not in use much or not at all? A. As a matter of practical lighting, the electric profession has settled upon using the full arc or ful incandescent lamp. The intermediate types do not present the advantages of either extreme type.

(6373) C. H. M. asks whether a Leyden jar or an electric condenser can be charged with an ordinary battery. A. The jar or condenser can be charged, but unless the battery were of very high voltage the charge would be weak.

(6374) C. H. P. writes: I would like to know the output in volts and amperes of a 50 light 50 volt transformer used as a common induction coil, the coarse coil connected to a 50 volt circuit with ten 16 candle power 50 volt lamps in series. Primary has 2 layers No. 4 wire. Secondary 12½ pounds of No. 14. A. You do not give relative number of turns of wire. It will approximately reproduce the voltage of the primary lighting circuit for which it was constructed, provided it is excited by the secondary alternating current of such a circuit. For amperage divide the voltage by the resistance (about 2½ ohms) of the zinc coil.

#### TO INVENTORS.

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January 15, 1895,

AND EACH BEARING THAT DATE.

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