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(8576) C. F. C. asks: 1. Are lantern slides (which are printed by contact) more sensitive to the light than carbon velox? For instance, a plate that printed a good clear picture on carbon velox in 15 seconds, being held 12 inches from a large size house lamp, would a lantern slide take longer or shorter time to print it? A. Lantern slide plates are always slow plates, much less sensitive than ordinary plates. A longer exposure is required. 2. Have you a SUPPLEMENT telling how to make lantern slides? A. We can send you "Photo-Miniature Lantern Slides," price twenty-five cents, and Elmendorf's "How to Make and Color Lantern Slides," price \$1 by mail. We can send you SUPPLEMENT 483, 517, 724, 1062, 1082, on slide making, for ten cents each. 3. Also, how to make a lantern slide camera for making slides from 4 x 5 negatives? A. SUPPLEMENT 625 tells how to make a bellows for a camera to take 4 x 5 negatives, and in Elmendorf's book there is a chapter on working with a camera in slide making. 4. Is there a magic lantern made which takes standard slides and burns oil for the light? Is this done, and are the pictures clear when thrown on the screen? A. Yes. The pictures cannot be enlarged more than four feet in diameter with oil lamps since the light becomes so faint by diffusing it over so large a screen.


(8577) G. W. H. asks: How can I connect the wires on the carbon element of an open circuit, home-made battery which I have? I use sal ammoniac. They work fine for about two weeks, when I have to renew connections on the carbon. It seems the fluid rises within the carbon and corrodes the wire. Have tried paraffine and also rubber on the outside, but to no avail. The carbons are arc-light pencils, well put out of the fluid. A. Dip the tops of the clean and dry carbons into melted paraffine till they are saturated with the paraffine as far as the surface of the liquid, so that the sal ammoniac cannot climb through the carbon, nor over the outside of it. In sal ammoniac cells usually there is a thick head of composition on the upper end of the carbon.

(8578) H. S. asks: 1. Kindly inform me through your Notes and Queries how I would find the carrying capacity of bare copper bars. A. The carrying capacity of a conductor is rated so that it will not be heated above a certain temperature, usually about 130 deg. F. With bare copper radiating freely into the air this will allow 3,000 to 4,000 amperes per square inch of cross section of bar. 2. What causes one of the poles of a 110-volt D. C. fan motor to hold the armature tight up against the pole, and how repair same? A. Adjust the bearing so that the armature will turn freely.

(8579) E. B. asks: 1. I want to magnetize an ordinary twist drill, making a magnet of it. Will I have to draw the temper of the drill first, or can I make a magnet of it as it is? A. The cutting end is already hard enough for your purpose. Heat the other end to redness and plunge into water, then magnetize. 2. How many amperes of current will it take to magnetize it by means of a coil of 6 or 8 layers of No. 18 silk-covered wire, the current being 110 volts? A. You must be governed by the heating of your coil. Use only so much current as will not heat the coil so that the insulation burns. That would destroy the coil. 3. In making a permanent magnet of tool steel, shall I first soften the steel before magnetizing it, or should it be hardened at the ends? A. Harden the bar at the ends glass hard.


(8580) H. N. B. asks: 1. Can the simple induction coil described in "Experimental Science" be used to transmit messages by wireless telegraphy? If so, how far would it be possible to transmit messages by same? A. Yes; perhaps a mile. 2. Is it necessary to have the air exhausted from a coherer, for short distances? A. No. 3. What is the smallest spark which will transmit messages about six hundred feet, and how high a pole would be needed? A. We do not know. Perhaps a quarter inch. A pole is not required. Plates such as Hertz employed will transmit farther than that. If you wish to use a pole, put one up a rod or so high.

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