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(8584) G. C. T. asks how to solder a piece of carbon and a piece of brass together. I think the carbon has to be lined in some way. A. Copper the carbon with a battery, then attach the brass with soft solder.

(8585) J. F. C. asks: 1. What advantages has the double pole receiver over the single pole (as they are called) electrically? Why would not one coil, the same resistance of the two, placed on one pole of a permanent horseshoe magnet (traversed by an alternating current) affect the magnet flux as much as the two coils of half the resistance, one placed on each pole? A. A horseshoe magnet is always stronger than a bar magnet of the same number of turns of wire upon its poles, and so a double pole magnet in a telephone will act more powerfully than a single pole of a straight magnet. 2. Is pure soft iron free from resistance to magnetic flux? What is the resistance of the air to magnetic flux as compared to pure Norway iron? A. The number of lines of force which will pass through iron as compared with air under the same degree of magnetization varies with the degree of magnetization. It may be as much as 5,000 times as many, and it may be only a few times as many when saturation is nearly reached. See the table of permeability in electrical works such as Foster's "Pocket Book," price \$5 by mail. 3. Which is correct to say, that a magnet attracts a piece of soft iron because it lowers the resistance of the magnetic flux, or that an opposite magnet is induced in its mass by induction? A. When a piece of iron approaches a magnet it both becomes a magnet and furnishes an easier path for the lines of force than the air. 4. Is the greatest force of attraction exerted in a magnet in attracting opposite poles of itself? A. We do not know whether a magnet works most in attracting its own poles or not. 5. What electrical disturbance is made by the action of the wind on telephone wires that a receiver takes it up? A. The noise to which you refer in a telephone is produced by vibrations caused by induction of adjacent wires and not by the friction of the wind. The wind produces no electrical disturbances.

(8586) M. W. and C. P. write: We would like to know, through the columns of your valuable paper, how a boiler of 15 horse power, that is only in use about three months during a year, should be left. Should it be filled with water or empty, and should the smokestack be protected. A. A boiler to be laid up for a season should be thoroughly cleaned on the inside, filled with water with steam on, so as to be full of hot water that has been boiled, up to the safety valve. The flues and fire surface of the boiler should then be cleaned; ashes and soot removed from every part where such lodge. Then close fire doors, ash pit, and put a cap on the smokestack. With this treatment laid-up boilers do not rust inside or outside. It is the moist air drawn through a laid-up boiler that does damage by rust.

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