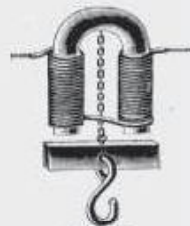


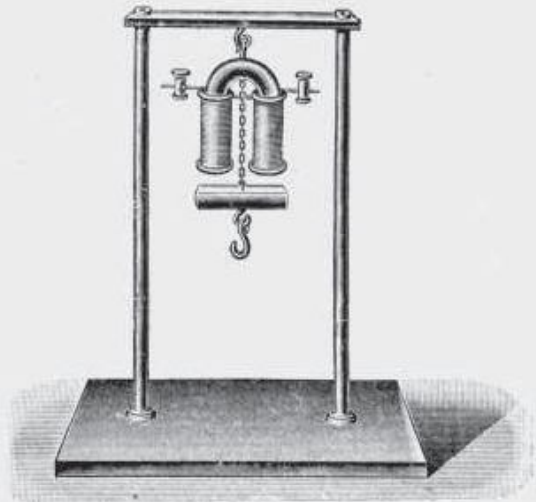
6435.



6443.



6439.



6445.

Electromagnetic Action of the Current.

Deviation of a magnetic needle by an electric current. Apparatus consisting of stirrup with voltaic couple of copper and zinc with magnet needle. See No. 6203, p. 207.

6435. — for connection with an independent current generator. With 2 points on which magnet needle No. 4847 can be supported. [Fig. $\frac{1}{8}$ nat. size.] \$ 2,50

The apparatus is placed in the magnetic meridian, that is in the direction north and south, and the two terminals connected with the poles of a cell No. 5559, p. 198. If the magnet has been put on one of the points it is observed that it changes its direction at the moment the circuit is made, oscillates backwards and forwards and finally takes up a fixed position at an angle depending on the strength of the current. On fixing the needle on the other point its north end is deflected to the opposite side. The direction of deflection of the needle depends on the direction of the current and may be foretold by the following rule. Imagine a swimmer moving in the direction of the needle; the north pole of the needle will be deflected towards his left hand.

6439. **Fundamental experiment in electromagnetism.** A copper spiral *b* is wrapped round half the length of a glass tube *a d* closed at one end; an iron rod fits in the glass tube. [Fig. $\frac{2}{3}$ nat. size.] * 0,50

The glass tube is placed horizontally and the iron rod adjusted so that it touches the closed end of the tube. On passing a current through the coil the rod is attracted into the coil. Holding the tube vertical, with the closed end below, the same thing happens, but on breaking the circuit the rod fall out of the coil. On examining the projecting end of the rod whilst the current is passing, by the aid of a magnet needle, it is found that it is a north pole if the current passes round the coil in a left handed direction but a south pole if the current pursues a right handed course.

6443. **Electro-magnet, horse-shoe form,** with keeper on chain, without binding screws. Attractive force with 1 bichromate cell, 8–10 kilos. [Fig. $\frac{1}{4}$ nat. size.] * 0,90
6445. — larger, with winding on wooden reels. On strong stand, with terminals. [Fig. $\frac{1}{8}$ nat. size.] * 7,50
6449. **Electro-magnet,** after Weinhold. (W. D. Fig. 551, p. 844.) With armature fitted with eye, and hook for suspending the magnet * 6,50