Figure 10
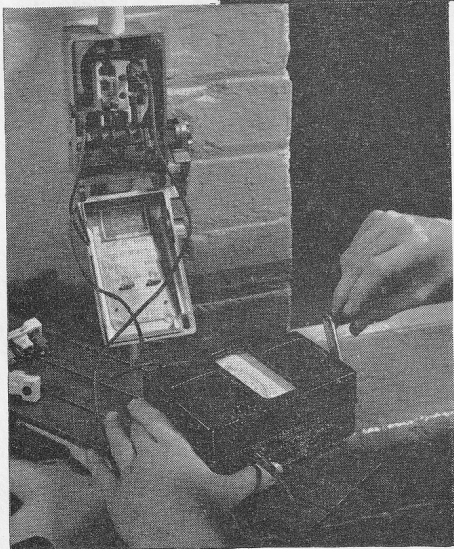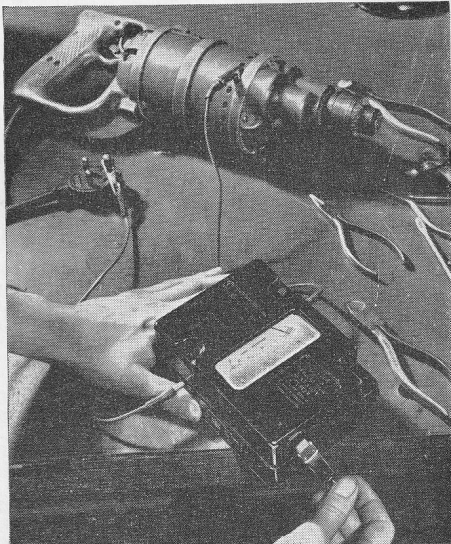Testing the earth-continuity conductor of a portable electric tool

Figure 11
Making an insulation test at a switch-fuse

This book deals with insulation continuity and polarity tests, and the requirements of the I.E.E. Regulations are briefly set out below.

Insulation tests. (*I.E.E. Regulations* 502 *and* 503)

These prescribe that electrical installations shall be tested on completion with a direct current pressure of not less than twice the working pressure, and that the insulation resistance of a completed installation shall not be less than 50 megohms divided by the number of outlets (points and switch positions) in the circuit, although no installation need have an insulation resistance greater than 1 megohm

$$\text{i.e. minimum insulation resistance} = \frac{50 \text{ megohms}}{\text{No. of outlets}}$$

For an incomplete installation, i.e. one without fittings, lamps, etc., the minimum insulation resistance should be not less than 100 megohms divided by the number of outlets.

Where p.v.c.-insulated cables are used, the equivalent values are $12\frac{1}{2}$ and 25 megohms divided by the number of outlets.

Earth-continuity conductor tests. (*I.E.E. Regulation* 508c)

Briefly this states that, provided no inductor (choke) is incorporated, it is normally satisfactory, where steel conduit forms the earth-continuity conductor, if a value of resistance not exceeding $\frac{1}{2}$ ohm is obtained.

Need for periodical testing

It should be realised that the insulation resistance of the wiring in a house will not always remain the same although the materials may be of the best quality, but will depend a good deal upon the amount of moisture and dirt present on the fittings and accessories. Periodical tests of insulation resistance on installations are therefore very desirable, so that any deterioration due to moisture, dirt, atmospheric conditions or age may be detected and remedied.