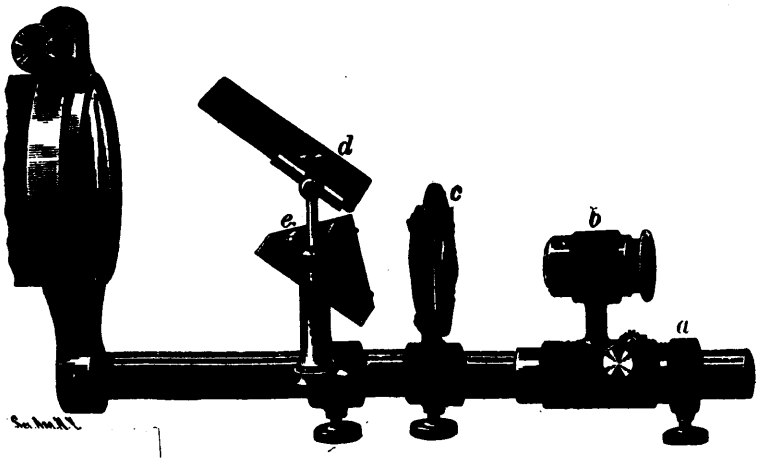

FIG. 3.—LANTERN POLARISCOPE.

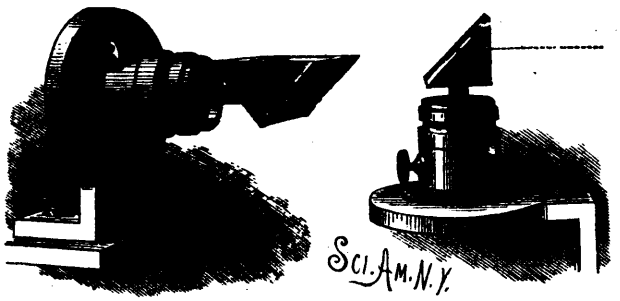

FIG. 5. FIG. 4.

APPLICATION OF THE 90 DEGREE PRISM.

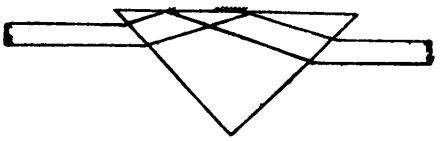

FIG. 6.—COURSE OF THE RAYS THROUGH THE ERECTING PRISM.

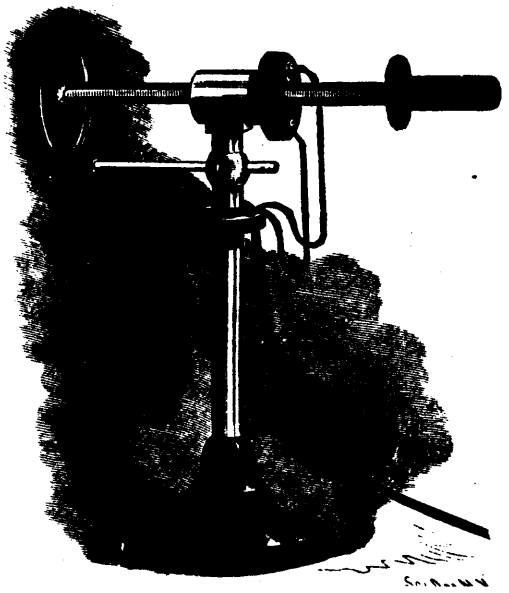

FIG. 7.—ARRANGEMENT OF ELECTRIC CANDLE FOR LANTERN USE.

front of the lantern and the hinged plate, and hold it in position. The reflecting prism (Fig. 5), or a plane mirror, is placed over the object to direct the light to the screen.

The improvements in the lantern and the attachments thus described are the result of a long experience with lanterns of various kinds. It is believed that it fulfils most requirements. It can readily be adapted to all the uses for which a scientific lantern is required.

To prevent the escape of stray light a wire frame is attached to the body of the lantern, so as to support a black cloth canopy, which covers the entire front of the lantern and extends downward below the support bar. It is provided with an aperture in front for the passage of the projected beam. In addition to this protection, the larger objectives may be provided with disks like that shown in Fig. 2. These precautions in regard to the escape of light are particularly necessary in microscopic and polariscopic projection, which require a thoroughly darkened room. In the projection of plain microscopic objects, it is found advantageous to place a plano-convex lens of three-fourths inch focus behind the stage.

An analyzer, formed of a series of three glass plates, and arranged to show both transmitted and reflected beams, is desirable. By a second reflection of the reflected beam it may be combined with the transmitted beam, showing that the reunion of the complementary colored beams produces white light.

In Figs. 4 and 5 are shown two applications of the 90° prism. In Fig. 4 it is shown in position for erecting the image produced by the lantern. The course of the rays is clearly indicated in Fig. 6.

The totally reflecting prism, when used to render the beam