

UNITED STATES PATENT OFFICE.

JOHN H. KLIEGL, OF NEW YORK, N. Y.

PLUG-SWITCH.

963,733.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN H. KLIEGL, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Plug-Switches, of which the following is a specification, reference being had to the drawing accompanying and forming part of the same.

My invention relates to plug-switches or "cut-out plugs," carrying one or more contacts adapted to make electrical connection with a corresponding contact or contacts carried by a device into which the plug is inserted. The contacts of a plug of the kind referred to are electrically connected with the terminals of the electrical conductors through which a circuit is to be established.

One object of the invention is to provide a plug in which the insulation at the ends of the conductors shall be effectively protected, so as to prevent raveling, undue wear, or other injury thereto.

Another object is to provide a plug in which the connections of the conductors and plug contacts shall be relieved of substantially all strain, such, for example as might otherwise be exerted on such connections when the conductors are grasped and pulled to withdraw the plug from the device into which it had been inserted.

A still further object is to provide a plug of this character which shall be simple and compact, and capable of being easily and quickly attached to its conductors.

The invention itself, which consists in the novel features and combinations hereinafter described and more particularly set forth in the claims, will be more readily understood from a description of its preferred form. The latter is illustrated in the annexed drawing, and is designed especially for use with the "cut-out box" described in the prior patent of Anton T. Kliegl and myself, No. 782,857, dated February 21, 1905.

In the drawings, Figure 1 is a side view of the plug attached to a cable containing two conductors. Fig. 2 is an edge view of the plug with the head or top portion of the plug in section. Fig. 3 is an edge view of a modification.

The body, 1, and the head or top, 2, of the plug are of insulating material and are preferably integral with each other and of rectangular cross section, as shown. In the top or head is an aperture or socket 3 large

enough to receive the end of the conductor to which the plug is to be attached, in the present instance a cable, 4, containing two conductors, 5, 6. The insulation of the cable at the end thereof is thus inclosed in the top of the plug and so protected from raveling or other injury.

Extending downwardly and laterally from the aperture or socket 3 are two passages, 7, 8, opening preferably at the shoulders at the base of the top or head portion, adjacent to the upper ends of the contacts 9 and 10 mounted on the body 1. Through these passages extend the conductors 5 and 6, as shown, to permit of their being connected to the contacts 9, 10. For the purpose of connecting the conductors to these contacts I prefer to employ terminal members, for example of the type illustrated, each comprising a socketed portion 11, in which the end of the conductor is secured, as by soldering, and a flat portion 12. The latter portions of the terminal members are bound to the upper ends of the contacts 9, 10, by suitable binding screws 13, 14. As shown, the passages 7, 8, are made large enough to permit the terminal members to be passed down through them from the aperture or socket 3, so that the terminal members may be attached to their conductors first, and the latter then inserted in the plug, as illustrated.

For the purpose of binding the cable firmly in the socket 3 the upper portion of the head of the plug is cut away, to a depth sufficient to expose the cable in the socket; and on this cut away portion is a plate 15, preferably provided with teeth or ribs 16 where it engages the cable. The plate is then brought down firmly on the cable by means of screws 17, extending through the plug. The screw holes in the plug are preferably countersunk to receive the screw heads, as indicated in dotted lines at 18 in Fig. 2. This binding plate, particularly when provided with ribs or teeth, as shown, binds the cable securely in its socket, thus effectively preventing any pull or other strain on the cable from being communicated to the connections of the conductors 5, 6, with the contacts 9, 10.

In order to locate the heads of the screws 13, 14, well below the surfaces of the contacts 9, 10, the body of the plug is constructed at the point where it joins the head, as shown. This construction permits the body of the