

UNITED STATES PATENT OFFICE

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PLUG SWITCH

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This invention pertains to plug switches for electric cables, and has particular reference to the means for interlocking the separable parts of the device to prevent inadvertent or accidental separation of the parts in service.

Each half of the device is adapted to receive and grip the end of an insulated cable, the two conducting wires emerging from each cable being connected to a pair of terminals suitable for engagement with a corresponding pair of terminals in the other half of the device when the two halves are brought together into operative relationship. It is customary to connect the terminals of the line cable to tubular sockets, and of the load cable to projecting plugs adapted to enter the line sockets so as to complete circuits there-through.

In the endeavor to design the device so as to permit ready separation in response to a pull by the operator, and yet prevent inadvertent separation while otherwise handling the switch or cables, the plugs have been made to fit snugly into the sockets either by turning them to proper diameter or by providing for spring contact between plug and socket. Such expedients, however, have not worked well. In service the carefully fitted plugs, after a few separations, become too loose to function properly as a means for holding the plug together, and the spring-like plug-and-socket arrangements are objectionable because they add complications to and impair the efficiency of the parts of the switch which are called upon to transmit current.

Attempts have also been made to provide auxiliary devices aside from the plugs and sockets to accomplish the desired purpose, but so far as I am aware none has been satisfactory. They are either clumsy, or ineffective, or expensive, or otherwise objectionable.

The object of the present invention is to provide a plug which is effective in operation even after long use, attractive in appearance, and of very low cost of manufacture.

Further and other objects will be apparent from the accompanying specification, and from the drawings which by way of illus-

tration show what is now considered the preferred form of the invention.

Fig. 1 is a perspective view of the device.

Fig. 2 is a front view of the device, with its parts separated and partly broken away.

Fig. 3 is a cross-section on the line 3—3 of Fig. 1.

Fig. 4 is a view of a grip plate, on the line 4—4 of Fig. 3.

Fig. 5 is a perspective view of the locking element.

The device comprises two substantially similar body members 10 and 12, both made of rubber, bakelite, or similar insulating material. Each member provides a groove 14 to accommodate the end of an insulated cable such as line cable 16 and load cable 18. Each cable is clamped in place by a locking plate 20, secured to its corresponding body member by screws 22, and provided with projecting corrugations 24 so placed as to enter groove 14 and engage the insulation of the cable to take any pull on the cable.

The end of each wire 26 of line cable 16 is attached by a screw 28 to a tubular metallic socket 30 imbedded in member 10. In like manner wires 32 of load cable 18 are connected to a pair of cylindrical plugs 34 having projecting ends 36 of proper diameter to enter sockets 30 and make electrical contact therewith when the two body members of the device are placed together as in Figs. 1 and 3. Terminal plugs 36 are slotted and their ends slightly spread apart to insure close resilient contact with sockets 30.

The switch as described above can function as a device for operatively making or breaking electrical connections between cables 16 and 18, but the two members are liable to come apart in service because they are held together only by the resiliency of plugs 36. To avoid accidental separation I provide an additional impositive locking means in the form of a spring clip 40 formed from a flat strip of spring metal, preferably bronze. The strip is bent upon itself to form at the middle of its length a hollow cylindrical portion 42, while the free ends are formed in the shape of hollow semi-cylinders 44 so disposed as to form a split cylinder when the free ends