

G. B. THOMAS.
ATTACHMENT PLUG.
APPLICATION FILED SEPT. 9, 1916.

1,249,247.

Patented Dec. 4, 1917.

Fig. 1.

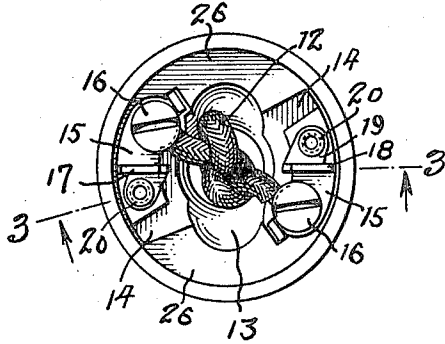


Fig. 2.

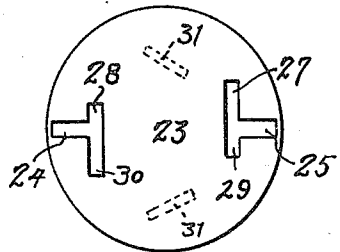


Fig. 3.

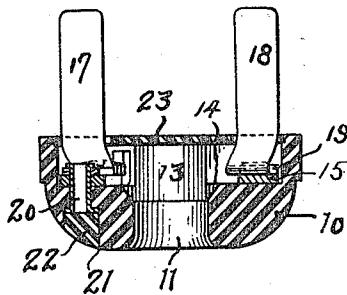


Fig. 4.

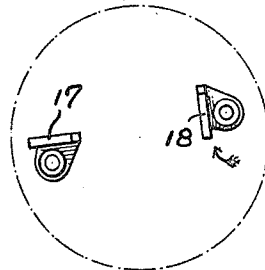


Fig. 5.

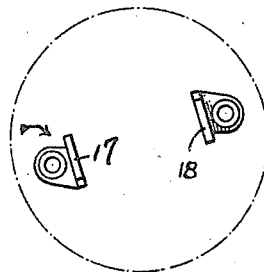


Fig. 6.

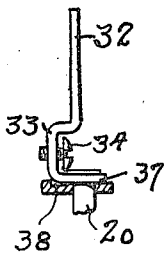


Fig. 7.

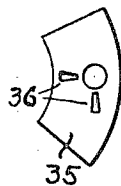


Fig. 8.

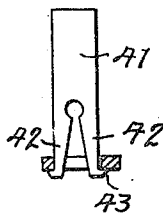
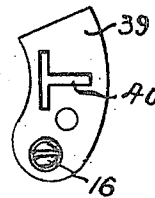


Fig. 9.



Attest:
Wm. J. ...

Inventor:
GEORGE B. THOMAS
by *Strom and Strom*
his Attys.

UNITED STATES PATENT OFFICE.

GEORGE B. THOMAS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE BRYANT ELECTRIC COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ATTACHMENT-PLUG.

1,249,247.

Specification of Letters Patent.

Patented Dec. 4, 1917.

Application filed September 9, 1916. Serial No. 119,294.

To all whom it may concern:

Be it known that I, GEORGE B. THOMAS, a citizen of the United States of America, and residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Attachment-Plugs, of which the following is a specification.

My invention relates to attachment plugs and particularly to plugs of the jack blade type, the object of my invention being to provide a plug in which the jack blades may be shifted to various relative positions to cooperate with receptacles of different types in which the receiving contacts are variously arranged.

In the accompanying drawings,

Figure 1 is an inverted plan view of an attachment plug in which my invention is illustratively embodied;

Fig. 2 is a plan of a positioning disk of insulating material which may be used to hold the jack blades in adjusted position;

Fig. 3 is a section on the line 3—3, Fig. 1;

Figs. 4 and 5 are diagrams showing the jack blades of the plug in different relative positions;

Fig. 6 is a side elevation of a modified form of jack blade, with the base plate in section;

Fig. 7 is a plan of the base plate alone;

Fig. 8 is a side elevation of another modified form of jack blade with its base plate in section; and

Fig. 9 is a plan of this base plate alone.

Attachment plugs having their plugging jacks arranged substantially parallel or in tandem or (in a polarized plug) with their blades at right angles to each other, are well known devices on the market. In many cases the cooperating receptacles are constructed with contacts adapted to receive a plug of only one of the three types referred to, although certain receptacles have been recently provided in which the receiving contacts are adapted to cooperate with two or even all three of the types. So far as I am aware, however, no one has heretofore made a plug having its jack blades adjustable so that they may be arranged to cooperate with any of the three types of receptacle contacts. This I have accomplished in the constructions shown herewith, and the improvement is one of particular importance to the manufacturer of electrical household

appliances who sells his article with an attachment plug connection, but without knowledge—or even the possibility of knowledge—of the type of receptacle installed in the ultimate consumer's house. To such a manufacturer, the possibility of supplying a plug which can be adapted to any one of these different types of receptacles, is a point of considerable commercial importance.

This adjustability of the plug contacts may be accomplished in various ways and I have shown only a few in the accompanying drawing.

Referring to Figs. 1 to 5 the present plug comprises an insulating body 10 pierced at 11 to admit the lead wires 12 and recessed to form an elliptical chamber 13 in which the strain relief knot in the wires may be seated. On opposite sides of the chamber 13 are depressed ledges 14 on which are mounted wire terminal plates 15 carrying binding screws 16. The jack blades 17 and 18 are pivotally secured to these terminal plates by base flanges 19 through which pass any suitable securing means such as diametrically opposite, tubular rivets 20, the heads of which lie in wells 21 (Fig. 3) opening to the outer face of the plug and normally filled with insulating wax 22 or the like after the rivets have been inserted.

In the position shown in Figs. 1 and 3 the jack blades 17, 18, are arranged in tandem in a plane passing through the axis of the plug. While the frictional grip of the securing means 20 may be sufficient to hold the blades in this position under ordinary conditions, I prefer to provide a guard disk 23 (Fig. 2) which is slotted at 24, 25, to fit over the blades and hold them in this position. When assembled the disk is seated in shallow depression 26 and lies substantially flush with the inner face of the plug and within its peripheral margin.

If it is desired to convert the tandem arrangement of the blades into an arrangement wherein they stand at right angles to each other and thus into a polarized plug, it is only necessary to remove the guard disk 23 and turn the blade 18 on its pivot to the position shown in Fig. 4. While the blade 17 is now substantially at right angles thereto, it can be made more accurately so by pushing it slightly farther outward toward the periphery of the plug. While

this results in moving the plane of the blade 17 slightly to one side of the axis of the plug, the arrangement is not objectionably eccentric. In this position of the blades
 5 the guard disk may be again adjusted, the blade 17 entering the slot 24, while the blade 18 enters the slot 27 lying at right angles to but communicating with slot 25. In order
 10 that the disk may be seated in its depression 26, the slot 27 is asymmetrical with relation to the slot 25 and extends farther to one side of the plane of the latter than the other side. Sufficient play between the sides
 15 of the slots and the blades is afforded to accommodate the blades in the slots 24 and 27 as indicated.

Should it be desired to use the plug with a receptacle having only parallel receiving contacts, the guard disk 23 is again removed and the blade 17 swung to a position parallel to blade 18, the latter being swung back slightly so that the plane passing through the middle of the blades is axial to the plug, as indicated in Fig. 5. The guard disk may be then readjusted, with blade 17 passing through slot 28 and blade 18 through slot 27, but at the end 29 of the latter opposite that occupied when in the position Fig. 4. In order to render the disk reversible,
 30 the slot 28 is extended at 30 so that it may be fitted over blade 18 in the polarized position (Fig. 4).

By locating the ledges on opposite sides of the short axis of the elliptical chamber 13 for the strain relief knot in the wires, and by arranging the terminal plates 15 toward the outer margins of the ledges, the blades 17 and 18 are kept sufficiently far away from the wires to prevent danger of accidental contact therewith, while at the same time the standard spacings for the blades in their different positions is retained.

Obviously other positions than those indicated can be secured, if desired. For instance, a polarized arrangement in which the blades lie at an obtuse angle to each other is shown in dotted lines at 31 (Fig. 2.). But this arrangement is little used and I have shown only such positions as have become standard on the market.

While there is little danger of defective contact between the terminal plates and the base flanges of the blades, I have shown in Figs. 6 and 7, a different arrangement in which the terminal wires are directly connected to the blades. Thus in this construction the blade 32 is bent back on itself to form a wiring pocket 33 and tapped to receive the binding screw 34 by which one of the wire ends is directly connected thereto. Since it would be impracticable to locate the upper bend of the wiring pocket 33 within the area of the plug or to enlarge the plug to make this possible so that the guard disk
 65 23 could be used, I have shown a different

method of holding the blades in adjusted position. To this end, the outer face of the terminal plate 35 is provided at suitable points with recesses or grooves 36, while the inner face of the base flange 37 of the jack blade has on its lower face a rib 38 which engages in one or the other of the grooves 36, depending upon the position of the blade. The blade is swung on its pivot 20, the rib 38 being sprung out of one groove 36 and into another, serving in either as sufficient means to hold the blade in proper position. More particularly is this so when it is realized that the adjustment once made is ordinarily not again changed during use since the receptacles in a given dwelling are ordinarily of uniform type.

A further modification for accomplishing the same result, is shown in Figs. 8 and 9. Here the base plate 39 is T-slotted as at 40, while the wire end of each jack blade 41 is split into a spring fork. The legs 42 of the latter have offset toes 43 which, when the fork is sprung through one or the other branch of the slot 40 in the base plate, catch beneath the metal at the ends of the slots and hold the blade fast against accidental withdrawal. To shift position of the blade it need only be disengaged from one branch of the slot and inserted in the other branch thereof.

The particular form of receptacle with which the present plug cooperates is immaterial. The plug shown is of the type commonly referred to as a cap, such as used with a separable attachment plug. But I do not limit the invention to this particular type nor to the details of construction shown, which may be variously modified and still accomplish what I claim as my invention.

I claim:—

1. An attachment plug having relatively adjustable jack blades and a perforated member through which said blades are inserted and by which they are held in adjusted position.

2. An attachment plug having relatively adjustable jack blades and a T-slot perforated member through which said blades are inserted and by which they are held in adjusted position.

3. An attachment plug having jack blades adjustable to different relative angular positions and a removable insulating disk pierced by said blades and serving to hold the latter in adjusted position.

4. An attachment plug having jack blades adjustable to different relative angular positions and a removable insulating disk pierced by a pair of substantially radial tandem slots, lying on opposite sides of the axis of said disk, and by a pair of parallel slots, lying substantially at right angles to a diameter of the disk and on opposite sides of its axis, said slots accommodating the jack

blades in different positions of relative angular adjustment and serving to hold the blades in their adjusted positions.

5 An attachment plug having an insulating body recessed in one face, wire terminal plates accommodated on said recessed face, jack blades projecting from said plates beyond the face of said insulating body, means for relative angular adjustment of said
10 blades and an insulating disk pierced to re-

ceive said blades in different relative angular positions, and lying against said recessed face in adjusted position.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

GEORGE B. THOMAS.

Witnesses:

G. W. GOODRIDGE,
H. M. WICHERT.