Nov. 18, 1924. 1,516,415

G. B. THOMAS

ATTACHMENT PLUG

Filed Nov. 20, 1919

Fig. 1.

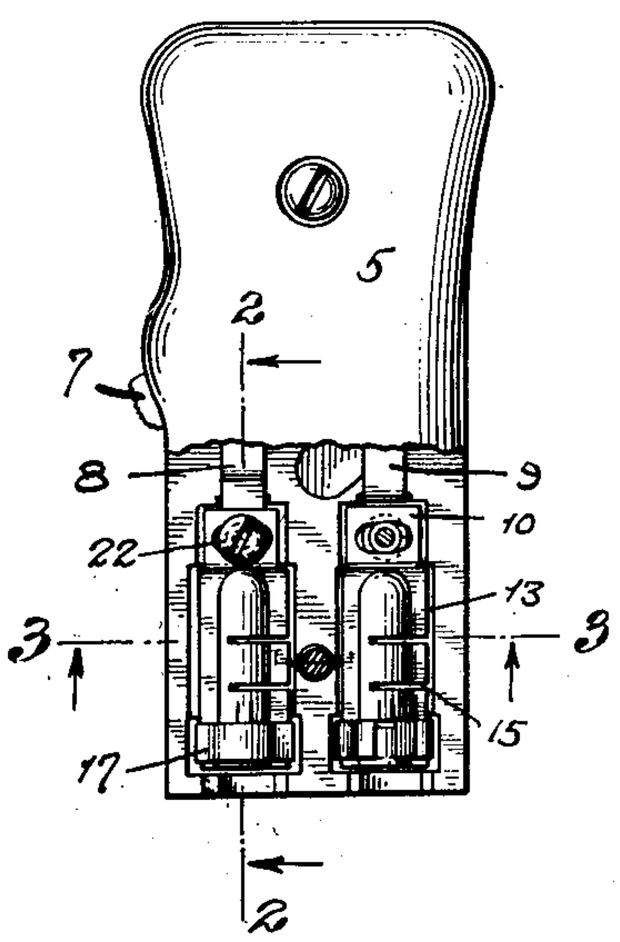


Fig. 2.

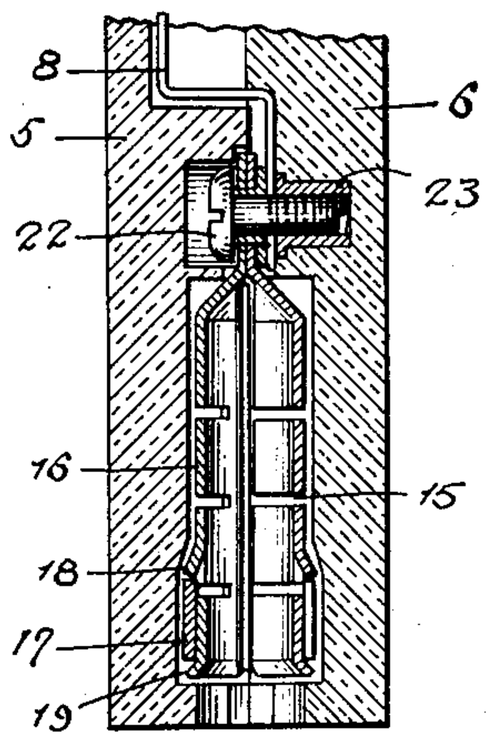


Fig. 4.

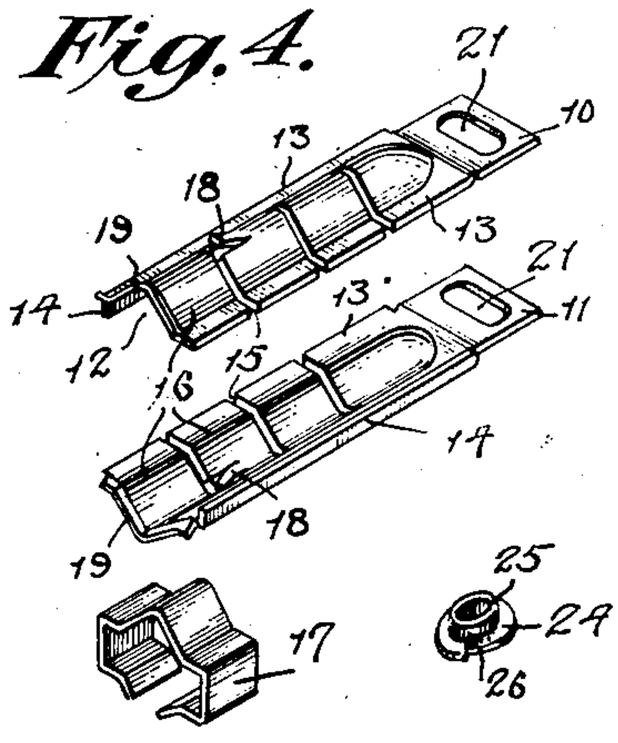
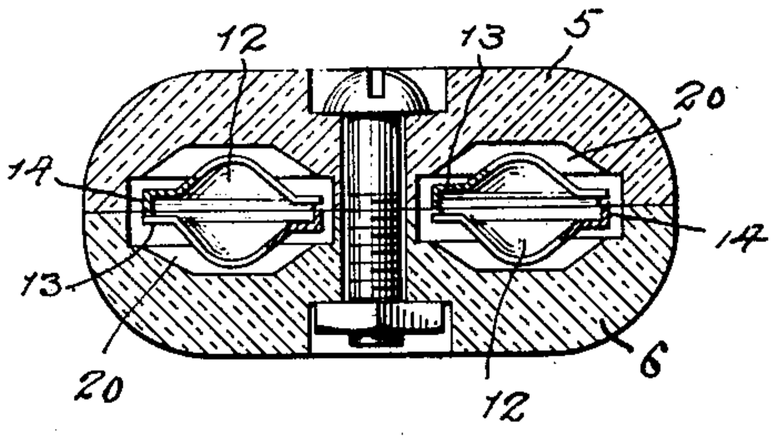


Fig. 3.



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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.

Application filed November 20, 1919. Serial No. 339,286.

To all whom it may concern:

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

My invention relates to attachment plugs, and particularly to the jack-receiving terminals thereof, the object of my invention being to provide a plug of improved terminal construction adapted to cooperate with jacks of different types and spacings so as to render the plug substantially universal in its utility.

In the accompanying drawings—

Fig. 1 is a broken elevation of a plug in which my invention is embodied in one form;

Figs. 2 and 3 are sections on the lines 2—2 and 3—3 of Fig. 1; and

Fig. 4 is a dropped perspective of one of the terminals.

The attachment plug to which my invention relates is of the type in which the terminals are connected to a source of electric current which they deliver to an appliance such as a toaster, chafing-dish, percolator, or the like in which the current is utilized. It is necessary for safety, therefore, that the terminals be housed in an insulating casing. It often happens that in fittings of different makes, the jacks are spaced apart different distances, or are of different types, such as blades rather than posts. It is the object of my invention to provide an attachment plug, the terminals of which are adapted to cooperate with either type of jacks, and to so arrange the terminals that they "float" and are thus free to accommodate themselves to jacks of different spacings, while at the same time maintaining good electrical connection with the conductors with which the terminals are associated.

In the accompanying drawing, the attachment plug comprises a pair of insulating blocks 5 and 6 of the same contour, recessed on their meeting faces to afford suitable chambers for the electrical conductors housed therein. The present plug is of switch type, the switch mechanism not being shown, but being operated by the switch button 7. Conducting straps 8 and 9 lead to the plug terminals to which my invention relates.

These terminals comprise a pair of plates 10 and 11 of identical shape, centrally channeled at 12 to afford, when juxtaposed, a more or less circular recess for the accommodation of a jack of the post type. The side margins 13 of the plates are maintained flat to bear against the marginal areas of a cooperating jack blade, while flanges 14 at one side of each plate form spacing elements which hold the plates sufficiently far apart to permit the entrance of the blade, and at the same time afford lateral guides which engage the edges of the jack blade and confine it within the terminal.

In order to make good electrical contact with a jack of either type, each plate is transversely slotted at 15 from one margin to form a series of spring fingers 16. The channel opening is less than the diameter of the usual post jack, and the spacing afforded by the side flanges 14 is less than the thickness of the usual blade jack, so that a good wiping contact between the jacks and the spring fingers 16 is secured by providing a spring band 17 surrounding the free ends of the juxtaposed plates 10 and 11 to hold the latter together. This spring band is kept in place on the one hand by tongues 18 struck outward from one of the spring fingers and bearing against the inner edges of the spring band 17. The band is retained at its other edge by its engagement with the outwardly flared lips 19 at the entrance end of the terminal. These lips have thus the double function of retaining the spring band 17, and of affording a guide for the entering jack.

It will be noted that the recesses 20, in which the terminals are housed, are of sufficient area to permit the latter to expand against the action of the restraining spring 16, and also to move laterally therein to accommodate the terminals to the spacing of the cooperating jacks. In order to permit the lateral play of the terminals in their recesses 20, and at the same time to maintain the same in parallel, while also insuring a satisfactory connection with the contract straps 8 and 9, I slot the ends of the plates 10 and 11 at 21 to receive the securing screw 22, which passes therethrough and takes into a tapped rivet 23 moulded in the insulat-

ing block 6. To prevent the plates from being bound in fixed position by the screw 22, I provide a spacing thimble 24, the shank 25 of which is of slightly greater length than the combined thickness of the two 10 and 11. The loose engagement thus insured permits the terminals to float transversely in their housing chambers 20, so as to maintain their parallel relationship irrespective of the spacing of the jacks. Good electrical connection with the end of the strap 8 or 9, underlying the head of the thimble 24, may be assured by arranging a spring washer on the screw 22, or, more simply, by slotting the head flange of the thimble 24 and offsetting the tongue 26, so formed, which thus constitutes a spring brush contact which establishes constantly a good electrical connection between the plates and the straps 8 and 9. It will be noted, however, that this spring may be omitted, since the entering jack spreads the plate sufficiently to press the head of the thimble down upon the strap.

The terminals are readily made from sheet metal, are readily assembled and secured in position, while the securing means is such that they maintain their parallelism at all spacings, firmly grip the inserted jack, of whatever type, and maintain good electrical connection with the conducting straps 8 and 9, the insertion of the jacks assisting in the establishment of this connection.

Various modifications in detail of construction will readily occur to those skilled in the art without departing from what I claim as my invention.

I claim—

1. In an attachment plug, an insulating body, a pair of substantially parallel jack-receiving terminals freely housed therein, fixed conductors in electrical connection with said terminals, and securing means carried by the body and serving to hold said conductors in fixed position thereon, and also engaging said terminals, at least one of said terminals having lateral play with respect to said securing means to permit variation in the spacing of said terminals while maintaining their substantially parallel relationship.

2. An attachment plug terminal comprising a pair of opposed terminal plates adapted to receive between them a cooperating jack and being apertured in alignment at one end to receive a securing screw, and means at said securing point electrically connecting the terminal plates to a conductor with freedom to separate at said connection under the action of an inserted jack.

3. An attachment plug terminal comprising a pair of opposed terminal plates adapted to receive between them a cooperating jack, and means electrically connecting the same to a conductor with freedom to separate at said connection and to move laterally with relation thereto under the action of an inserted jack.

4. An attachment plug terminal comprising a pair of opposed independent terminal plates transversely slotted to afford a series of spring fingers, a flat spring band surrounding the spring fingers at the jack-receiving end of the terminal, and means for holding said band in position on said plates.

5. An attachment plug terminal comprising a pair of opposed terminal plates with flared lips at the jack-receiving end of the terminal, a spring band yieldingly uniting said plates and engaging said lips at one edge, together with a tongue struck from at least one of said plates and engaging the other edge of said band to maintain the same in position.

6. A connector terminal apertured to receive a binding screw, a bushing through which the screw passes, said bushing having a spring flange operative to maintain the terminal in frictional engagement with the head of the binding screw.

7. A connector terminal transversely slotted at one end to accommodate a binding screw passing therethrough, a bushing entering said slot and through which the stem of the screw passes, said bushing having a spring flange underlying the terminal and serving to maintain the same in frictional engagement with the head of the binding screw.

8. In an attachment plug, an insulating body, a pair of parallel jack-receiving terminals freely housed therein, conductors for leading current to said terminals, and securing means uniting said terminals to the conductors with freedom of lateral play to vary their spacing, and spring means for insuring good electrical connection between said conductor and terminals irrespective of said play.

In testimony whereof I have signed my name to this specification.

GEORGE B. THOMAS.