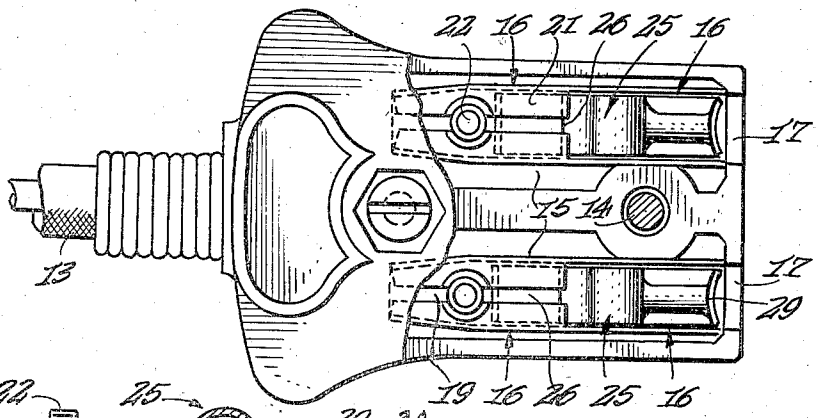
Jan. 21, 1947. R. BORZA 2,414,630

ELECTRICAL CONTACTOR

Filed Dec. 8, 1945

FIG. 1.



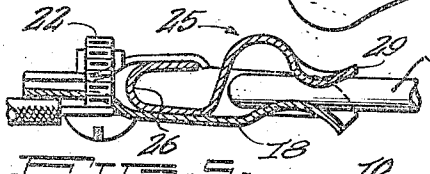


FIG. 5.

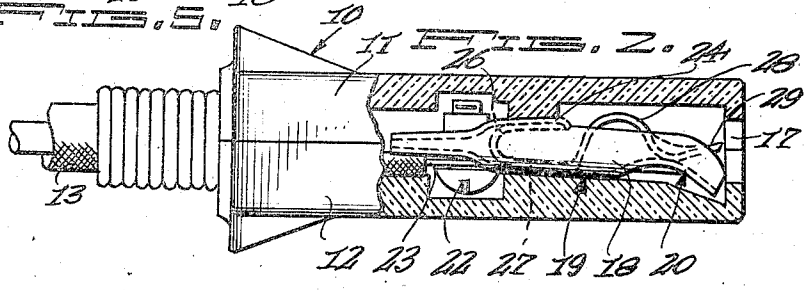
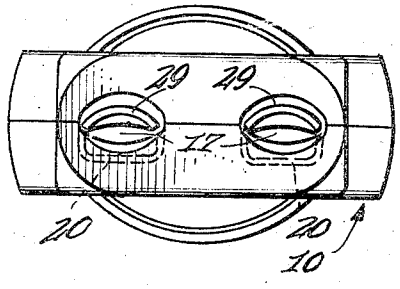


FIG. 2.

FIG. 4.



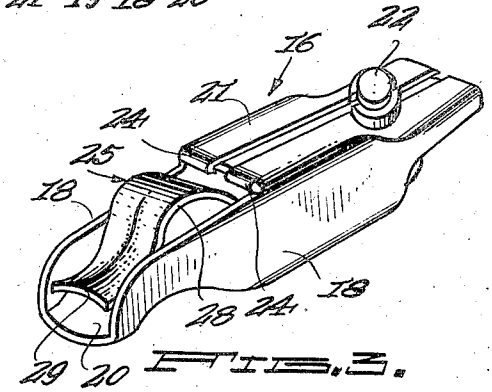


FIG. 3.

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ELECTRICAL CONTACTOR

Raphael Borza, New York, N. Y.

Application December 8, 1945, Serial No. 633,618

9 Claims. (Cl. 173—332)

1

This invention relates to electric contactors in general, and more particularly to electric adapters or plugs for connecting electric appliances with electric current outlets, and aims to provide certain new and useful improvements whereby the electric contact between the male prong on the appliance, such as a toaster, stove, iron, etc., and the female socket in the adapter is greatly increased in force, and whereby the efficiency and life of the adapter contacts are substantially increased.

Another object of the invention is the provision as part of the adapter contacts, of a separable, readily insertible or removable resilient contact element of strong and durable construction, so that in the event that the element wears out or becomes damaged it may be readily replaced by a new element.

The above broad as well as other and more specific objects will become apparent in the following description, wherein characters of reference refer to like-numbered parts in the accompanying drawing. It is to be noted that the drawing is intended for the purpose of illustration only, and that it is neither desired nor intended to limit the invention necessarily to any or all of the details of construction shown excepting insofar as they may be deemed essential to the invention.

Referring briefly to the drawing,

Fig. 1 is a fragmentary plan view of an adapter plug equipped with the invention.

Fig. 2 is a side elevational view of the plug, with parts broken away and partly in section.

Fig. 3 is a perspective view of the metallic contact element per se.

Fig. 4 is an end view of the plug.

Fig. 5 is a side elevational view, partly in section and with parts broken away, showing the same with a male prong inserted thereinto.

Referring in detail to the drawing, the numeral 10 indicates the usual composition or plastic housing of an adapter plug, which is commonly made of two complementary sections 11 and 12, and into which the flexible conductor cord 13 leads, the two sections being held together by a screw 14. Longitudinal recesses 15 are provided in the housing 10 for positioning the contact elements shown generally at 16, having their forward ends or entrances adjacent and in alignment with the holes 17 at the forward end of the plug for reception of the male prongs, not shown, of an electrical appliance, not shown.

Each of the two contact elements 16 comprises a main body substantially trough-shaped, having the side walls 18 and the floor 19. The forward end of the floor 19 is bowed as shown at 20, to deepen and enlarge the mouth end of the element. The rear portion of the element has a roof, which is split longitudinally, formed by extensions of the side walls 18. Near the rear end of the element openings are provided through the roof and floor for the reception of a binding post screw 22 for attaching the lead wire 23 to the element.

2

The forward edges 24 of the split roof 21 are turned down somewhat, as shown in Figs. 2 and 3, for the purpose which will presently become apparent.

A spring contact finger 25 comprises the movable half of a socket of which the bowed floor 20 comprises the fixed half, and the male prong, not shown, is forced in between these parts. The finger 25 is preferably made of tempered steel to give it strength and durability. It comprises a V-shaped rear end or portion which is positioned so to speak on its side, as shown in Fig. 2, with the extremity of the upper arm of the V engaging the turned down roof edges 24 and the lower arm engaging the floor 19. It is to be noted that the upper arm 26 of the V, in the mounted and assembled condition shown in Fig. 2, lies in full contact with the under surface of the roof 21, and that the lower arm 27 likewise lies in full contact with the floor 20.

Passing forward from the V, the contact finger 25 comprises further a wave-shaped body 28 terminating in an upwardly extending and transversely arched tongue 29. As a prong, not shown, is forced inward between the tongue 29 and the bowed floor 20, the wave-shaped forward portion of the finger 25 is forced upward and at the same time it is flexed, but all of the flexure and resilient force are not taken up in this forward portion, for obviously a portion of it is taken up by the V-shaped rear end. Thus the entire finger 25 is flexed throughout, whence the strain on any part thereof is minimized with a consequent long life. As in the case of all such plugs as that shown, the male prong, not shown, enters only between the floor 20 and the base of the tongue 29 and does not extend inward as far as the base or root of the forward body 28.

The screw 22 serves, in addition to a binding post, as a means of tightening the element 16, that is, of bringing the roof 16 closer to the floor 19, and hence of bringing the roof edges 24 down. Conversely, by loosening the screw 22 the roof edges 24 are permitted to rise slightly and sufficiently to permit removal of the finger 25. In this manner a worn or damaged finger 25 may be removed and a new one inserted. Hence it is not

necessary to discard the entire plug, as is commonly necessary, if the contact finger is damaged or loses its resiliency. And by making the finger of tempered steel as above mentioned, the loss of resiliency is very greatly diminished or retarded.

Obviously, modifications in form and structure may be made without departing from the spirit and scope of the invention.

I claim:

1. An electrical contactor comprising a hollow elongated housing including a floor and a roof, said roof having a transverse elongated downward projection intermediate the length of the housing, a contact spring finger comprising a substantially V-shaped rear portion and a substantially wave-shaped front portion positioned in said housing with one arm of said V positioned substantially against the floor of the housing and the other arm thereof positioned substantially against said roof, the extremity of said last-named arm registering against said downward projection of said roof.

2. The device set forth in claim 1, said roof being made of resilient material, and means for forcing said roof in a direction toward said floor thereby moving said downward projection downward to enhance the interlocking therewith of said last-named arm.

3. An electrical contactor comprising a trough-like housing having a floor and side walls, said housing having a roof over the rear portion thereof, said roof having a downward projection at its forward edge, a contact spring finger comprising a substantially V-shaped rear portion and a substantially wave-shaped front portion positioned in said housing with one arm of said V positioned substantially against the floor of the housing and the other arm thereof positioned substantially against said roof, the extremity of said last-named arm registering against said downward projection of said roof.

4. The device set forth in claim 3, said wave-shaped portion of said spring finger extending forward in said housing beyond the forward edge of said roof.

5. The device set forth in claim 3, said roof being made of resilient material, and means for compressing said roof edge toward said floor.

6. The device set forth in claim 1, said roof being made of resilient material, a screw extending through said roof and floor rearward of said downward projection, tightening of said screw forcing said roof downward toward said floor thereby enhancing the interlocking of said extremity of said last-named arm with said downward projection.

7. The device set forth in claim 3, said roof being made of resilient material, a screw extending through said roof and floor rearward of said downward projection, said roof being longitudinally split to enhance the resiliency thereof, tightening of said screw forcing said roof downward toward said floor thereby enhancing the interlocking of said extremity of said last-named arm with said downward projection.

8. In combination with an adapter plug having an elongated housing therein, said housing having a floor and a roof, said roof having a downward projection at its forward edge, a contact spring finger comprising a substantially V-shaped rearward portion and a substantially wave-shaped front portion adapted to be positioned in said housing with said V having one arm substantially in contact with said floor and the other arm thereof substantially in contact with said roof, the extremity of said last-named arm registering against said downward projection of said roof, the intersection of said arms of said V lying rearward of the extremities of said arms and said wave-shaped portion extending forward of said V.

9. The combination set forth in claim 8, said roof having means thereon engaging said last-named arm thereby releasably locking said finger in said housing.

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