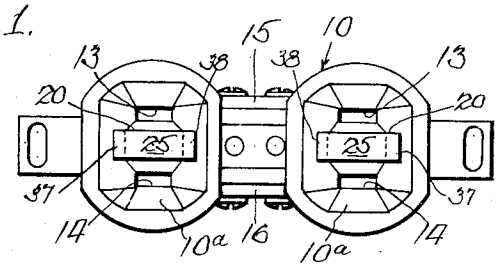
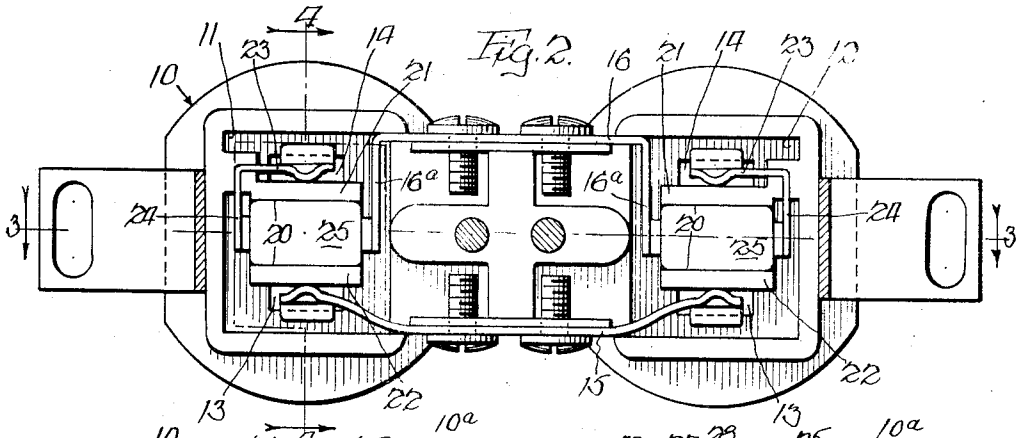
Sept. 23, 1941. F. J. KLANCNIK 2,256,716

FUSE FOR OUTLET CONNECTIONS

Filed Nov. 19, 1938

Fig. 1.





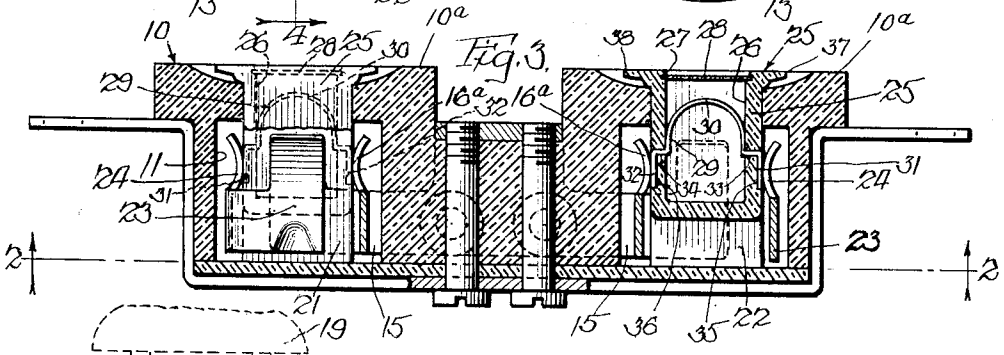


Fig. 4.

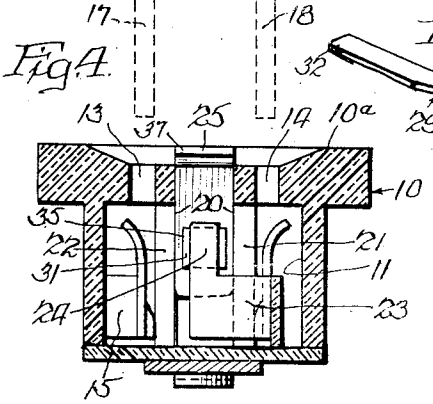


Fig. 6.

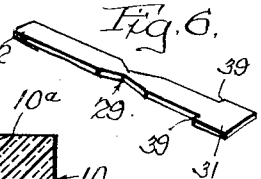
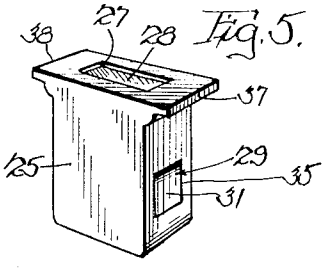


Fig. 5.



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FUSE FOR OUTLET CONNECTIONS

Frank J. Klancnik, Chicago, Ill.

Application November 19, 1938, Serial No. 241,389

3 Claims. (Cl. 200—133)

This invention relates to electrical devices, and is more particularly directed to outlet connections having a fuse therein.

Various types of outlet connections are employed with electrical wiring systems, and the several fuses in the circuits of the system are usually located adjacent the meter or in some remote place. When a fuse burns out in one of the circuits of the system, it is necessary to cut off the current supply which puts the house in darkness and subjects to an electrical shock, anyone attempting to ascertain which of the fuses is to be replaced. While it is the fuse in the current supply that has burned out, it may have been caused by a short circuit of one of the devices attached to an outlet connection, and the replacement of the fuse will not correct the source of the trouble.

It is a primary object of the present invention to eliminate the above objections and to provide an improved outlet connection embodying a fuse which may be readily removed and replaced, and to which outlet connection, electrical devices may be attached and detached without subjecting the fuse to wear and without injury to the fuse element.

A further object is the provision of an outlet connection which contains a fuse that may be readily and easily replaced without cutting off the main current supply, and which fuse serves as detector means for readily finding out the source of the trouble by being inoperable or burning out when the device attached therewith is short circuited.

A further object is the provision of an outlet connection arranged to receive a fuse therein and through which fuse, the current passes when a device is attached to the outlet connection.

The invention consists in the several novel features hereinafter set forth, and more particularly defined by claims at the conclusion hereof.

Referring to the drawing:

Figure 1 is a top plan view of a duplex outlet connection and fuse constructed in accordance with my invention.

Figure 2 is an enlarged sectional view taken on the line 2—2 of Figure 3.

Figure 3 is an enlarged longitudinal sectional view taken substantially on the line 3—3 of Figure 2.

Figure 4 is an enlarged detail cross-sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a detail perspective view of the fuse; and

Figure 6 is a detail perspective view of the fuse element employed with the fuse.

My invention is illustrated with a duplex type of outlet connection, but may be employed with various other types, such as the drop cord or plug-in types. In the kind of outlet connection shown, the numeral 10 designates the body of insulating material and of conventional shape, provided with cored portions 11 and 12 at each end thereof forming top walls 10a—10a into which slot openings 13 and 14, respectively, are arranged in pairs and communicate with the cored portions. The body 10 has contact strips 15 and 16 fixed to either side thereof, and which strips extend longitudinally and into the cored portions 11 and 12. In the type of duplex outlet connection shown, the contact strips 15 and 16 are engaged by contact fingers 17 and 18 of a plug 19, (shown in dotted lines Fig. 4), for attaching an electrical device thereto, but in this instance, the contact strip 16 has its free ends 16a—16a bent inwardly at right angles, while the contact strip 15 remains relatively straight to extend below slot openings 13—13.

The body 10 is provided intermediate each pair of slot openings 13 and 14 with a relatively large opening 20 having side walls 21—22 which extend the entire depth of the body and the free ends of the contact strip 15 are directed to engage the walls 22—22 below each of the slot openings 13—13. The bent portions 16a—16a of contact strip 16 are directed adjacent the inner edges of the walls 21—21 and serve with a relatively short contact strip 23 for engaging the fuse placed within the opening 20. The contact strip 23 has a right-angled formation 24 directed adjacent the outer edges of walls 21—21 which serves with the bent portion 16a to contact the fuse, while the contact strip 23 extends alongside of wall 21 below slot opening 14 and serves with the ends of contact strip 15 to engage the contact fingers 17 and 18 of plug 19.

The fuse designated as 25 is inserted between the bent ends 16a and 24 of the contact strips 16 and 23, respectively. When inserted, the fuse 25 remains flush with the top wall 10a of the outlet connection and completes the circuit to the contact strips 16 and 23 which are engaged by the contact fingers 17 and 18 when the plug 19 is attached.

The fuse 25, (Figs. 3 and 5), is constructed of insulating material and is cored to form a hollow body 26 and an open top 27 into which mica or other suitable material 28 is securely fixed to provide a window through which the metal fuse

element 29 is visible. The fuse element 29 is bowed intermediate its length at 30 and its free ends 31 and 32 extend through openings 33 and 34 provided in opposite walls of the hollow body 26 of the fuse 25. The free ends 31—32 are formed to lie parallel to the side walls of the fuse and flush in grooves 35 and 36 provided therein and these ends 31—32 engage the portions 16a and 24 of contact strips 16 and 23, respectively, when the fuse is in position. The top portion of the fuse 25 adjacent the window 28 has outwardly projecting portions 37 and 38 which serve as finger grips by which the fuse may be removed, and they also serve as means to limit the insertion of the fuse in opening 20.

When inserting the fuse, the walls 21—22 guide the same until received between the contacts 16a and 24, and at which time, the fuse is securely retained thereby between the walls.

It will be noted that neither the fuse body nor the fuse element is exposed to be contacted by the contact fingers 17—18 of the plug 19 of a device attached, and when attached, its contact fingers 17—18 enter a pair of slot openings 13—14 in the top wall 10a of the outlet connection and are guided by wall 21—21 until they engage contact strips 16 and 23 to complete the circuit.

The fuse 25 has a fuse element of greater resistance than the main fuse in the circuit, and should a short occur to one of the devices attached thereto, this fuse element will burn out, severing its particular outlet without affecting the source of power to the other outlets.

In order to replace the fuse, it is only necessary to remove the plug 19 of the device which exposes the fuse 25 to view and which fuse may be readily removed by gripping the opposite extensions 37—38. When removed, a new fuse may then be inserted and the line is again ready for service.

A new fuse element 29 may be inserted in the fuse body 25 by threading the same through openings 33—34 until the shoulders 39—39 of the fuse element engage the wall of the fuse. Then the end 31 of the fuse element is bent flush in groove 35 and is held manually therein while the free end 32 of the fuse element is forced inwardly to cause the intermediate portion thereof to bow upwardly as at 30, and at which time the free end 32 of the fuse element is bent flush in groove 36. The ends 31 and 32 of the fuse element 29 serve with the bowed portion 30 thereof to retain the same in position in the fuse body 25.

It will be noted that with this type of fuse, the fuse element therein may be viewed through the window 28 and its condition ascertained, and also a new fuse element may be inserted while utilizing the same fuse body.

While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming withing the field of invention claimed, may be resorted to, if desired.

I claim:

1. In an electrical outlet connection, a body having a pair of spaced apart attachment plug receiving openings and a fuse receiving opening intermediate the pair of openings, a pair of spaced terminals carried by said body and aligned with the pair of openings, a fuse having a fuse element therein and insertable in said fuse receiving opening to maintain electric contact between the pair of terminals, and means on said fuse body to permit the ready removal thereof.

2. In an electrical outlet connection, a body having a fuse receiving opening and an attachment plug receiving opening on each side of said opening, a pair of spaced terminals carried by the body to be engaged by the attachment plug, a fuse having a fuse element extending therethrough to maintain contact between the pair of terminals when the fuse is inserted in position in the said fuse receiving opening of the body.

3. In an electrical outlet connection, a body having a pair of attachment plug openings and a rectangular opening adapted to receive a detachable fuse, a fuse having a fuse element extending therethrough, a pair of spaced terminals carried by the body aligned with the attachment plug openings and arranged to receive said fuse therebetween to maintain electric contact between the pair of terminals, said pair of terminals serving to frictionally retain the fuse in position.

FRANK J. KLANCNIK.