

Sept. 20, 1932.

O. H. JUNG ET AL

1,878,779

FUSE CLIP

Filed Aug. 16, 1930

Fig. 1.

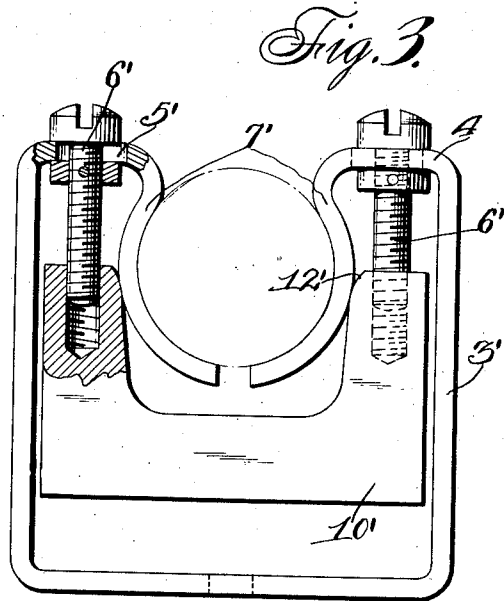
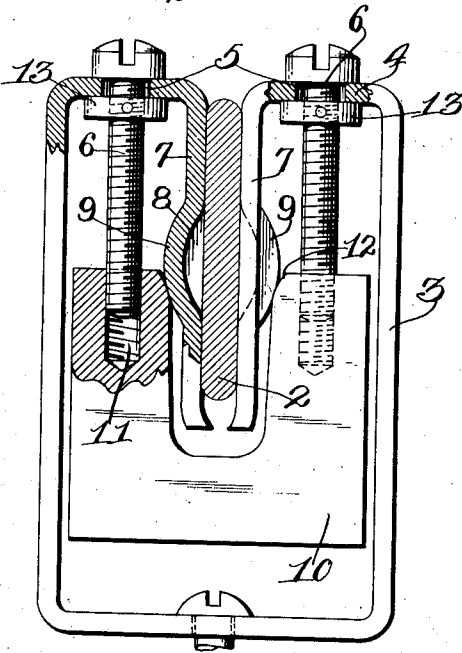
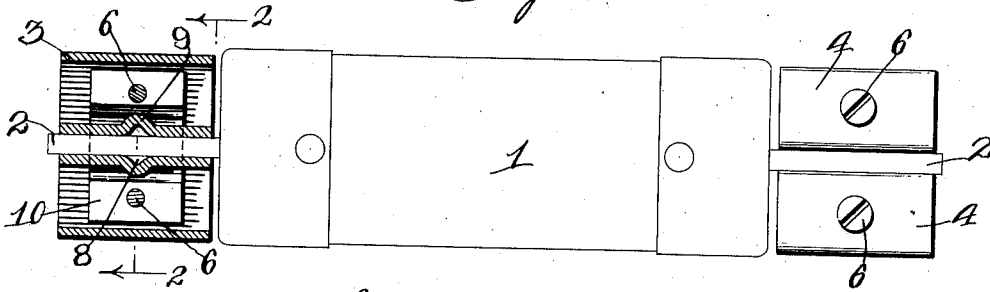


Fig. 2.

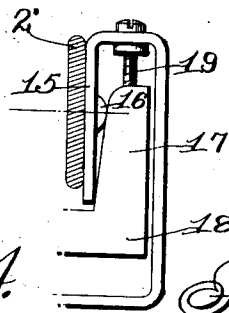


Fig. 6.

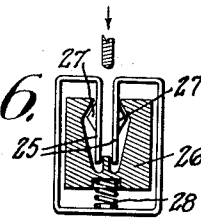
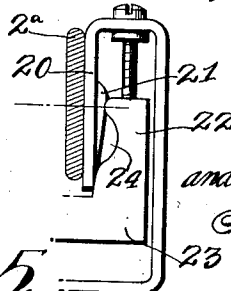


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE

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FUSE CLIP

Application filed August 16, 1930. Serial No. 475,802.

This invention relates to an improved fuse clip.

One of the objects of the present invention is the provision of an improved type of fuse clip incorporating in its construction improved means for providing a positive engagement between the ends of the fuse plugs and the fuse clips whereby to prevent the producing of an arc between the contact ends of the fuse plug and the fuse clip itself, thus providing a positive connection between the clip and the plug.

Another object of the present invention is the provision of an improved fuse clip provided with an adjustable clamping member which is adapted to cooperate with portions of the clip for urging the yieldable engaging members of the clip into positive contact with the contact ends of the fuse plug, assuring of a positive connection between the fuse clip and the fuse plug so as to reduce to a minimum the possibility of an arc being created between the yieldable members of the clip and the engaging members of the plug.

Another object of the present invention is the provision of a fuse clip which can be quickly and easily constructed for use in connection with different types of fuse plugs, such as those provided with the blade-like terminals and also with the ferrule cap terminals and assures the positive engagement of the yieldable engaging members with the contacting portions of the fuse plug.

With the above and other objects in view, the invention consists in the novel features of construction, the combination and arrangement of parts hereinafter more fully set forth, pointed out in the claims and shown in the accompanying drawing wherein:

Figure 1 is a top plan view of a pair of fuse clips constructed in accordance with this invention and illustrating a fuse plug having the blade contact members at the ends thereof engaged with the clips with part of the view illustrated in cross sections;

Figure 2 is a transverse section on the line 2-2 of Figure 1, taken on an enlarged scale;

Figure 3 is a view similar to Figure 2, il-

lustrating a slightly modified form of the invention;

Figure 4 is an end elevation of a portion of a clip, illustrating a slightly modified form of the invention; and,

Figure 5 is a view similar to Figure 4, illustrating another form of the invention.

Figure 6 illustrates an end elevation of still another form of our invention.

Referring to the drawing, 1 indicates a fuse plug having blade terminals 2 and this type of fuse is generally used for carrying heavy loads. Ordinarily, these blade terminals are engaged between opposed clamping members carried by contact clips, but in a great many instances, due to the placing and displacing of the blade terminals, the engaging members of the contact clips become loose and do not provide a complete contact, and it is, therefore, one of the objects of the present invention to provide means whereby to assure of a positive contact at all times between the yielding engaging members of the clip and the ends of the fuse plug.

The improved fuse clip comprises a U-shaped body 3 having laterally disposed portions 4 at the outer ends of the sides of the body in which in turn are provided with suitable openings 5 to receive the adjusting screw bolts 6. The terminals of the clip extend inwardly of the U-shaped body parallel with the sides thereof and approximately at an equal distance to the side portions, as shown in Figure 2, to form the opposed yieldable engaging members 7. The intermediate portions of the engaging members 7 are provided with depressions 8 forming outwardly bulged portions 9. As shown in Figure 2, the blade member 2 is urged downwardly between the opposed engaging members 7 with the lower edge arranged adjacent the terminals of the engaging members 7.

A U-shaped yoke or clamping member 10 is provided, the ends of which are formed with internally threaded bores 11 to receive the inner ends of the screw bolts 6, and the inner faces of the side portions of the yoke 10 are slightly bevelled, as shown at 12, to permit the ends thereof to engage and ride upon the

outwardly bulged portions 9, as shown at Figure 2.

The screw bolts 6 have attached thereto stop collars 13, so that as the screw bolts 6 are turned in one direction, the yoke or U-shaped member 10 will be urged into engagement with the bulged portions 9 of the engaging members 7 for urging the engaging members toward the blade members, thus forcing the engaging members into tight clamping engagement with the blades 2, and providing a perfect contact between these parts.

The yoke or U-shaped member 10 can be quickly disengaged from the members 7 by turning the screw members 6 in the opposite direction, thus forcing the yoke 10 toward the intermediate portion of the U-shaped member 13.

From this, it will be apparent that after the blade-like terminals of the fuse plug have been engaged with the members 7 of the clip, the yoke or clamping member 10 can be moved outwardly along the members 7 to force them into tight clamping engagement with the blade-like terminals.

In Figure 3, we have shown a slightly modified form of the invention wherein the body member 3' and the clamping yoke 10' is of similar construction. However, the engaging members 7' in this form of the invention are of arcuate shape, as illustrated, for embracing the ferrule cap ends of a different type of fuse plug than that shown in Figure 1.

It will also be noted in this form of the invention, that the cross pieces 4' at the outer ends of the sides of the body 3' are formed with slots 5' to permit the clamping members 7' to move laterally relative to the screw members 7' when the ferrule cap of a fuse is engaged between the members 7'.

The operation and advantages of this form of the invention shown in Figure 3, is the same as in the preferred form, for in this form of the invention, it is unnecessary to provide bulged portions in the clamping member 7' as the side portions of the yoke 10' can have their bevelled parts 12' engage with the outer curved surfaces of the clamping members 7'.

In Figure 4, we have illustrated another form of the invention wherein the engaging members 15 are provided with a rounded bulged portion 16 and the contacting face of the side portions 17 of yoke 18 is disposed on an incline so that when the yoke is moved to an operative position as shown in Figure 4, there will be a tendency for the engaging members 15 to have a complete even contact with the blade 2' throughout its width.

In this form of the invention shown in Figure 4, the yoke 18 is operated by means of screw members 19 for moving the yoke toward and away from the engaging members 15, and it will be noted that as the yoke is

moved to a complete operative position, the inner ends of the engaging members 15 contact the inclined face of the side portions 17 in order to bring about a complete even contact of the engaging members with the side portions of the blade 2'.

In Figure 5, we have illustrated another form of the invention wherein the engaging portions 20 of the clip are provided with a tapered contact member 21 and side portions 22 of yoke 23 are provided with a cutout 24 forming spaced contact points, uppermost of which engages with the contact member first and rides upwardly, but due to the inclination of the inner face of side member 22, the lowermost contacting point on side portion 22 will move into engagement with the lower end of contact member 21 and bring about a complete even pressure on engaging member 20, this pressure extending to a point above the transverse center of the fuse blade 2a.

The forms of the invention illustrated in Figures 4 and 5 are provided so as to disclose more clearly how a complete even contact can be brought about between the engaging members of the clip and the blade ends of the fuse plug, and it is believed that while we have described and illustrated a number of modifications, disclosing various ways in which this can be carried out, there are other ways which can operate in a similar manner bringing about the same results.

Referring particularly to Figure 6, the clip is shown. The yielding engaging members 25 are contracted against the knife blade when it is inserted therebetween and engages the shiftable yoke 26, which yoke is forced down, and through its engagement with the cams 27, causes a final compression of the yieldable members, there being a spring 28 interposed between the yoke and clip base for causing disengagement of the parts.

It will be apparent from the foregoing that by using a fuse clip of this character, the clamping member which is used for urging the engaging portions of the clip into positive contact with the terminals of a fuse can be incorporated in the construction of the fuse clip and the entire unit sold at a very low cost, while at the same time, it will provide a very efficient and useful article for the purpose intended.

While we have shown and described the preferred embodiment of our invention, it will be apparent that slight changes may be made in the construction when putting the invention into practice without departing from the spirit of the same or the scope of the appended claims.

We claim:

1. A fuse clip including opposed yieldable engaging members, an adjustable yoke adapted to embrace said yieldable members, and means carried by the clip for imparting move-

ment to said yoke for urging said engaging members toward each other.

2. A fuse clip including opposed yieldable engaging members, an adjustable yoke, means
5 carried by the clip and having connection with the yoke for adjusting said yoke relative to said engaging members, and means forming operative contact between the yokes and the engaging members to provide an even
10 pressure to said engaging members and simultaneously moving them toward each other.

3. A fuse plug including yieldable engaging members, a U-shaped yoke having its side portions embracing and adapted to contact
15 with the yieldable engaging members, adjusting screws carried by the clip and having connection with the side portions of the yoke to move said yoke relative to the clip and bringing the same into contact with the en-
20 gaging members to provide an even pressure to said engaging members for simultaneously urging them toward each other.

4. A fuse clip including opposed yieldable engaging members, cam faces carried by said
25 engaging members, and means slidably carried by said clip and movable longitudinally of the engaging members and cooperating with the cam faces for urging said engaging members toward each other.

30 In testimony that we claim the foregoing we have hereunto set our hands at Milwaukee, in the county of Milwaukee and State of Wisconsin.

35 OSCAR H. JUNG.
PAUL E. HEFFELFINGER.

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