Feb. 3, 1953 S. M. WEISBERG 2,627,537

ATTACHMENT PLUG

Filed Aug. 6, 1949

FIG. 1.

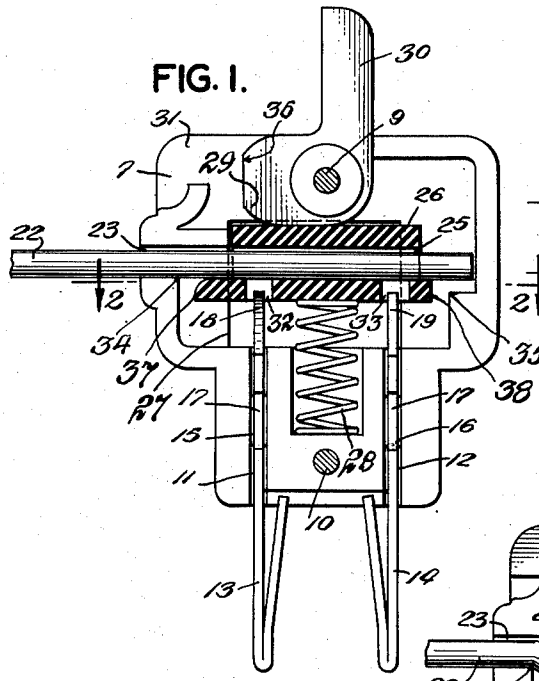


FIG. 2.

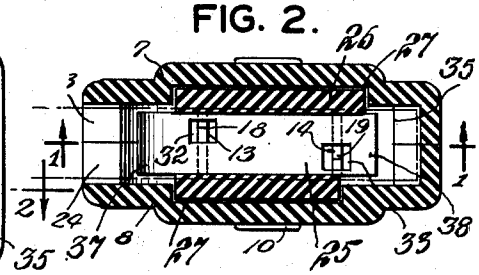


FIG. 3.

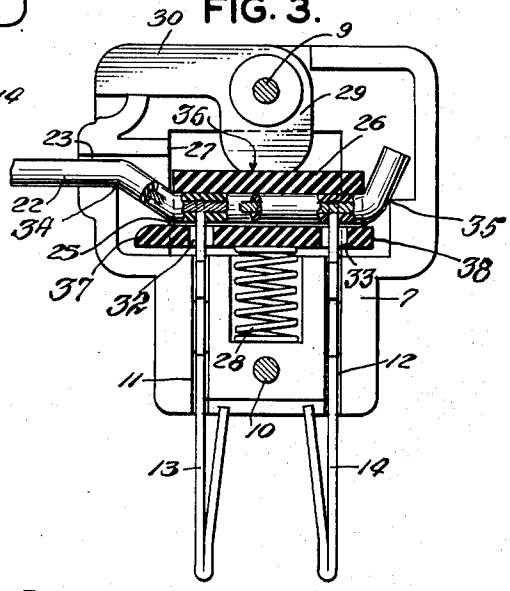


FIG. 4.

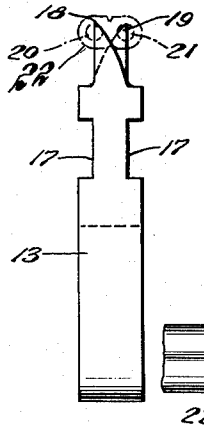
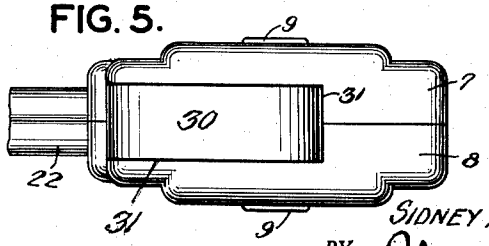


FIG. 5.



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ATTACHMENT PLUG

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1 Claim. (Cl. 173—361)

1

The invention herein disclosed relates to attachment plugs, and the objects of the invention generally are to provide a device of this sort which can be connected with the wires with which it is to be used, immediately and without the need for soldering or the use of screw-driver or other tools, or any special machine such as heretofore employed for assembling and connecting the blades and wires in the plug body.

Other special objects of the invention are to provide an attachment plug of this quick connectible character which will be of simple, low cost construction and in which the wires will be firmly and reliably held with appropriate strain relief.

Other special objects of the invention are to provide an attachment plug having all these desirable characteristics which will be small in size and of neat, attractive design, suitable for use wherever attachment plugs are employed.

Other desirable objects and the novel features through which the purposes of the invention are attained are set forth or will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates one of the present commercial embodiments of the invention. Actual structure, however, may be modified and changed as regards the immediate illustration, all within the true intent and broad scope of the invention as hereinafter defined and claimed.

Fig. 1 in the drawing is a vertical sectional view of the plug on substantially the plane of line 1—1 of Fig. 2, showing the cam lever opened for admission of the electric cord;

Fig. 2 is a horizontal sectional view as on substantially the plane of line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 1, showing the cam level closed and holding the wires impaled on the inner ends of the plug blades;

Fig. 4 is a face view of the two blades showing how the inner, pointed ends of the same are offset to penetrate the two wires of the cord;

Fig. 5 is a top plan view of the plug as it appears in Fig. 3.

As at present constructed, the plug body is made in two opposed halves 7 and 8, connected together at top and bottom by through rivets or studs 9 and 10.

These sections have opposed grooves 11 and 12 for the contact blades 13, 14, these grooves having lugs 15, 16, for engagement in notches 17 in the opposite edges of the blades to secure them against inward or outward movement in the positioning grooves 11 and 12.

2

The inner ends of the blades 13 and 14 are pointed or sharpened as at 18, 19, in oppositely offset relation, Fig. 4, to align with the laterally spaced wires 20, 21, in the parallel wire or so-called "Zip" cord 22.

To guide and hold the cord, the two parts of the plug body are formed with opposed companion grooveways 23, 24, providing a laterally widened passage for the flat cord, and this entry passage in the side is continued inside the plug as a correspondingly shaped passage 25 through a block 26 guided at 27 for movement toward the pointed ends of the blades.

A spring 28 is effective to shift the block 26 into position with the passage therein, in line with the passage in the side of the plug body.

A cam 29 pivoted on the securing rivet or stud 9 has a bearing against the opposite side of the block for thrusting it toward the ends of the blades. This cam is shown as having a leverage extension 30 operative as a handle for rocking the cam from the Fig. 1 to the Fig. 3 position, and the companion parts of the plug body are shown recessed at 31 to accommodate this handle in the top of the plug body.

Openings 32, 33, are provided in the bottom of the sliding block, spaced and laterally offset to match the spacing and lateral offset of the pointed ends 18, 19, of the blades.

To attach the wires it is only necessary to lift the handle 30, the cam 29 then permitting the spring 28 to thrust the block 26 upward to place the passage 25 therein in register with the entry passage 23, 24, in the side of the plug.

Then, after the cord is inserted through the side of the plug as in Fig. 1, it is only necessary to turn the lever 30 down into the Fig. 3 position, this action causing the cam 29 to force the block 26 downward, impaling the wires 20, 21, therein over the laterally offset sharpened ends 18, 19, of the two plug blades. When fully turned down as in Fig. 3, the cam will lock itself in position, holding the block firmly forced downward over the ends of the blades.

In this lowered position the block will bend the cord over the angular shoulders 34, 35, in the opposite sides of the block, which then provide desirable strain relief, preventing the wires from being pulled off the ends of the blades.

The aligning passages in the side of the plug and in the sliding block assure the wires of the cord being properly registered with the pointed inner ends of the blades. Hence it is only necessary to insert the cord through the side of the plug and then close the lever handle down into

its seat in the top of the plug body. The double strain relief insures positive securing of the wires with the blades. While this provides a positive and, if desired, permanent connection of the cord with the plug, it is possible nevertheless, if the need to replace the cord arises, to accomplish this by simply lifting the lever as in Fig. 1, in which event the spring **28** will slide the block upward, thus to strip the wires off the ends of the blades and permit the cord to be pulled out of the plug and be replaced by new cord.

The structure consists of but few, simple parts and can be produced at low cost. The cam may be designed to swing past dead center position in the closing direction so as to remain firmly locked once it is fully closed to the wire connecting position shown in Fig. 3. Preferably the cam is formed with a flat **36** at the high portion of the same so as to be held by the block in the closed relation under pressure of the spring **28**.

The block **26** is shown provided with extensions **37**, **38**, which as indicated in Fig. 1, serve to support and guide the entering wire to assure its passage over the strain relief shoulders **34**, **35**, thus making certain that the wire will be given the double strain relief bends shown in Fig. 3.

The guideways **27** for the sliding block, formed in the opposing sections of the plug body, may be of different widths, as shown in Fig. 2, and the block be shaped accordingly so that it will only fit in the plug body in the one relation, that is, with the openings **32**, **33**, faced toward the ends of the blades and with the long and short cord guiding extensions **37**, **38**, directed toward the shoulders **34** and **35**, respectively.

The arrangement disclosed, in which the wire carrying block **26** has a movement directly toward the inner ends of the blades, has many advantages. This provides a thin, flat structure with the parts lined up in the general plane of the blades. In this relation, blades of thin material can take all the thrust of the wire impaling block. The points on the inner ends of the blades may be cut in the same die operation that shapes the blades. No grinding or special sharpening is required.

What is claimed is:

An attachment plug or similar device for quick connection to and quick disconnection from a flat parallel conductor cord comprising a body, spaced contact blades anchored in said body and having pointed inner ends laterally offset to opposite sides of a common center line between the inner ends of the spaced blades, a cord receiving member supported in said body over the inner ends of said blades and guided for movement in the body toward and away from said inner ends of the blades, said member having a cord passage extending therethrough laterally widened in cross sectional shape to closely confine and disposed to position a flat parallel conductor cord with the conductors of said cord aligned with the pointed inner ends of the contact blades, said member having blade receiving openings in the side of the same extending from said cord passage and faced toward said pointed inner ends of the contact blades to admit said pointed ends into said cord passage into engagement with the respective conductors of a cord confined in said passage and reversely acting means on said body for forcing said member toward and holding the same in position over said pointed inner ends of the blades and for shifting said member away from said pointed inner ends of the blades whereby to impale and secure the conductors on or to strip them off from the ends of the blades.

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