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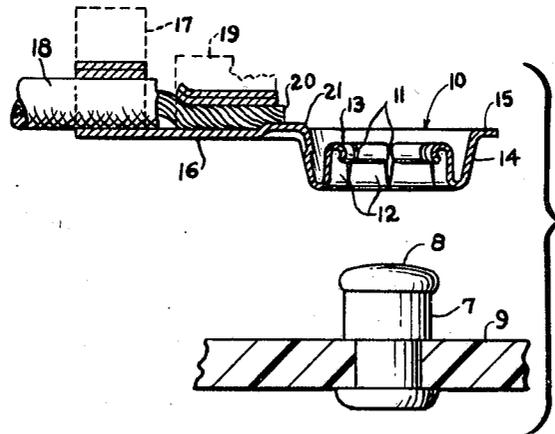
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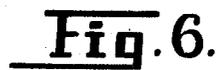
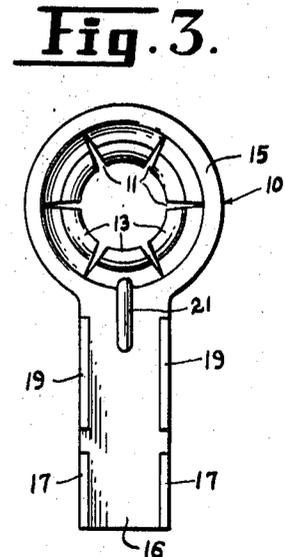
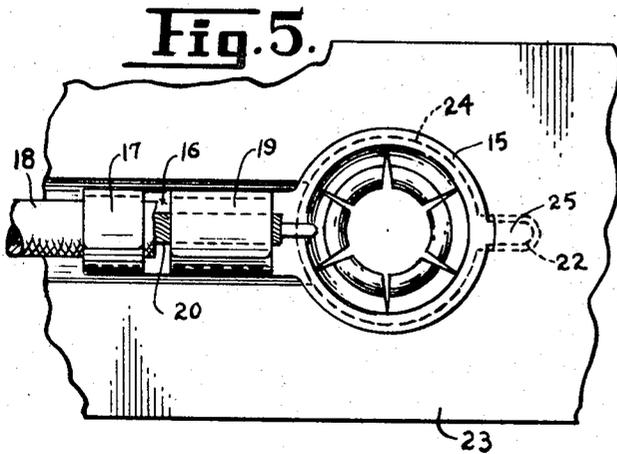
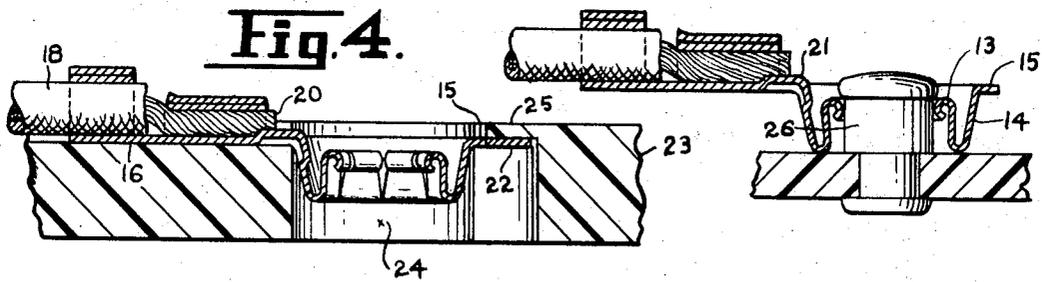
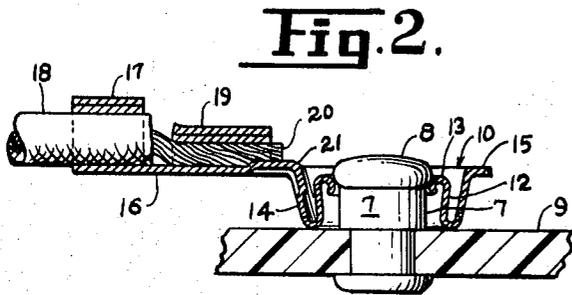
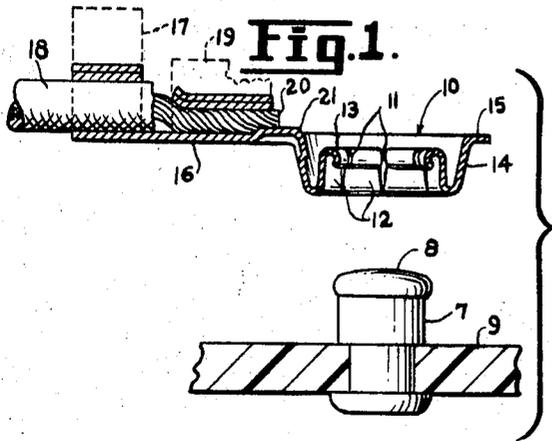
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- [54] **SNAP ELECTRICAL CONNECTOR**
 1 Claim, 6 Drawing Figs.
- [52] U.S. Cl..... 339/258,
 339/223
- [51] Int. Cl..... H01r 11/22
- [50] Field of Search..... 339/253,
 256, 258, 223; 24/217
- [56] **References Cited**
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ABSTRACT: A socket member for electrical connection to a projecting pin terminal is made entirely of a single piece of sheet metal. An inner wall portion is slitted to provide resilient fingers adapted to make electrical contact against either the undersurface of a bulbous head on the pin terminal or directly against the shank of the pin. An outer wall extends upwardly a substantial distance above the spring fingers and has a flat circular rim so that the socket can easily be pressed over the stud. An integral shank extends radially outwardly and has means for clamping a lead wire and a strengthening rib extends partially into the shank and also into the outer wall. In one form, a tongue may be located opposite the shank to assist in holding the socket member in a mounting block.





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SNAP ELECTRICAL CONNECTOR

The invention relates to a snap electrical connector and especially to a one-piece sheet metal socket member for electrical connection to a projecting pin terminal. It has heretofore been proposed to make an electrical connection by means of a spring ring-type socket which was riveted or otherwise secured to a shank for holding the lead wire. Such a connector involved a number of parts and, therefore, was expensive to make.

An object of the present invention is to make an economical one-piece sheet metal socket member adapted for snap connection with a headed pin terminal, such one-piece member providing resilient fingers which are set so as always yieldingly to engage the pin.

An outer wall surrounding the spring fingers projects a substantial distance above them and has a rim so that the socket can easily be pressed into place. For this purpose, it is preferable that the rim be spaced far enough above the ends of the spring fingers so that the stud will not offer substantial resistance when the socket is being manually pressed into place.

A further object is to provide means for adding strength to the sheet metal piece and this is accomplished not only by a rim around the outer wall, but also by a rib which extends across such rim and partially into the lead connecting shank and into the outer wall. Other objects and advantages will hereinafter more fully appear. In the accompanying drawings, I have shown for purposes of illustration, one embodiment which the invention may assume in practice. In these drawings:

FIG. 1 is a view principally in vertical section showing the socket member ready for connection to a pin terminal;

FIG. 2 is a similar view all in section showing the socket member pressed into place on the terminal;

FIG. 3 is a top plan view of the socket member before attachment to a lead wire;

FIGS. 4 and 5 are sectional and plan views respectively showing a modification of the socket member in a mounting block; and

FIG. 6 is a vertical section illustrating a modified manner of making contact with the pin terminal.

In FIGS. 1 and 2, I have shown a pin terminal 7 having a bulbous head 8 secured in a suitable manner to a supporting plate 9. A socket member generally designated 10 has an inner wall of generally cylindrical shape which is provided with axial slits 11 to divide the wall into a plurality of spring fingers 12 arranged in circular series. Each spring finger has an intumed rolled bead 13 at its free end which, as seen in FIG. 2, is adapted to bear resiliently against the undersurface of the bulbous head 8 and establish a reliable electrical contact between the socket and terminal.

An outer wall 14 is joined to the bottom ends of the spring fingers by a reverse bend, such outer wall extending upwardly

a substantial distance beyond the free ends of the spring fingers, such outer wall having an outwardly extending rim 15. This provides a flat top surface well above the spring fingers to facilitate pressing the socket member in place without substantial interference by the bulbous head 8. As seen in FIG. 2, the head projects only a short distance above the socket member in the final assembly.

A shank 16 extends radially outwardly from the wall 14 and preferably at the level of the rim 15. This shank has one pair of side flanges 17 for gripping the insulated portion 18 of a lead wire and another pair of flanges 19 clamped around the bare end 20 of the lead wire. These flanges are shown, in dotted lines in FIG. 1 and in full lines in FIG. 3, as initially formed to extend vertically so that the lead wire can easily be put into place. In addition to the strength provided by the rim 15, the sheet metal piece is further strengthened at its juncture with the shank 16 by an upwardly formed rib 21 which extends across the rim 15 and partially into the shank 16 and downwardly into the wall 14.

In the modified construction shown in FIGS. 4 and 5, a tongue 22 projects outwardly from the rim 15 opposite the shank 16. This facilitates assembly in a mounting block 23 which has a hole 24 to receive the central portion of the socket, and an overhanging ledge 25 under which the tongue 22 may be engaged to retain the socket member in place at least temporarily before it is pressed into position over the stud.

In FIG. 6, there is indicated an instance where the intumed end 13 may make electrical contact along the cylindrical surface 26 of the pin terminal and for this purpose the fingers may be bent inwardly slightly more than in the case of FIGS. 1 and 2 so as always to bear resiliently against the pin.

I claim:

1. A one-piece sheet metal socket member for electrical connection to a projecting pin terminal comprising:

- a. an inner generally cylindrical wall axially slitted to provide a circular series of resilient fingers intumed at their free ends to provide bearing surfaces adapted to bear resiliently and make electrical contact against the outer surface of said pin;
- b. an outer wall reversely turned from the bottom edge of said inner wall and extending upwardly a substantial distance beyond the free ends of said fingers;
- c. an outwardly extending rim at the upper end of said outer wall;
- d. a radially outwardly extending shank integral with said outer wall extending radially from said rim and having means for attachment to a lead wire in conductive relationship, a strengthening rib extending across said rim and partially into said shank and partially into said outer wall; and
- e. a tongue projecting outwardly from said rim at a location opposite said shank to facilitate assembly with a mounting block.

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