March 13, 1956 H. W. BATCHELLER 2,738,485

ELECTRICAL CONNECTOR MEMBER WITH A CENTRAL LONGITUDINAL STRIP HAVING A SUPPORTED FREE END

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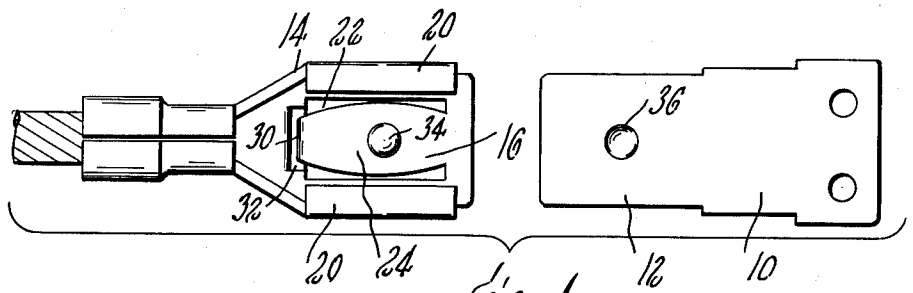


Fig. 1.

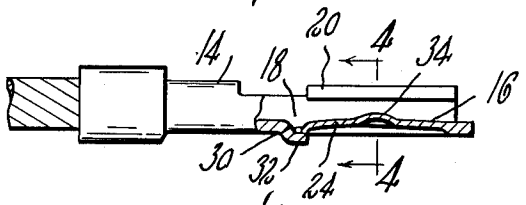


Fig. 2.

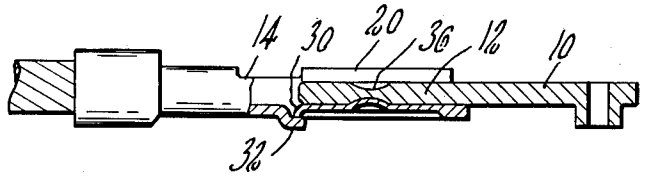


Fig. 3.

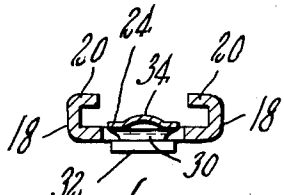


Fig. 4.

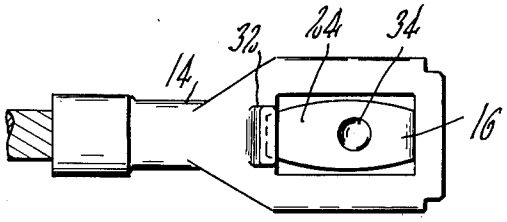


Fig. 5.

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by Wright, Brown, Quinby & May Attys.

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ELECTRICAL CONNECTOR MEMBER WITH A CENTRAL LONGITUDINAL STRIP HAVING A SUPPORTED FREE END

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4 Claims. (Cl. 339—258)

This invention relates to the female member of an electric connector, this member being of the shallow channel type made of sheet metal and adapted to receive a male member comprising essentially a plane tongue which enters the channel at one end thereof. The channel comprises a floor from the sides of which rise side walls each having an inturned flange along its upper edge. The flanges overhang margins of the floor and are spaced thereabove to receive the side margins of the male members with a close fit. Two longitudinal parallel slots are cut in the floor to define a central strip somewhat as shown and described in my Patent No. 2,600,190. According to the present invention the end of the strip which is remote from the entering end of the member is free and bears on an adjacent portion of the floor, such portion being preferably offset downward. The strip is arched upward, the convexity being flattened when a male connector member is thrust into the channel. The flattening or straightening of the arch increases the horizontal length of the strip, causing the free end thereof to slide on the supporting portion of the floor since the other end of the strip is integral with the portions of the floor adjacent to the entering end of the member. The provision of a free end for the central strip results in an increase in the distance of yield of the strip so as to accommodate successfully male members which vary somewhat from the prescribed thickness. The support for the free end of the strip provides the necessary stiffness required to press the male member firmly against the flanges which extend over the side margins of the floor of the female connector member.

For a more complete understanding of the invention reference may be had to the following description thereof and to the drawing, of which

Figure 1 is a plan view of a connector with the two members separated;

Figure 2 is a side elevation of the female member, a portion being broken away to show in section;

Figure 3 is a side elevation of the connected members, a portion being broken away to show in section;

Figure 4 is a section on the line 4—4 of Figure 2; and

Figure 5 is a bottom plan view of the female member shown in Figure 1.

The connector shown in Figure 1 consists of a male member **10** having a rectangular plane tongue **12**. The female member **14** is of the type having a shallow channel with a floor **16**, side walls **18** and inturned flanges **20** along the upper edges of the walls, the flanges being spaced above the floor **16** just enough to receive the side margins of the tongue **12** with a snug fit. Two longitudinally extending, parallel slots **22** are cut in the floor, forming a central strip **24** of the original material of the floor. The end of the strip **24** remote from the entering

end of the member is severed from the adjacent portion of the floor by a transverse cut from one slot to the other, but the end of the strip near the entering end of the member is left joined integrally with the floor. The free end of the strip is then bent up out of the plane of the floor and the strip is cold-worked by suitable dies to make it thinner and longer. In the example shown in Figure 1, the slots **22** are of substantial width and the strip **24** is thinned in varying degrees from a maximum at the line of juncture with the portion of the floor near the entering end of the member to a minimum at or near the middle of the strip. As a result, the strip is not only lengthened by the cold working but is also widened, the maximum widening occurring at the point of maximum thinning. The severed end **30** of the strip **24** is preferably bent down as indicated in Figures 2 and 3 to engage the adjacent portion **32** of the floor from which it was severed. The floor portion **32** is preferably offset downward to support the strip at the proper level for admission of the tongue **12**. In shaping the strip it is preferably arched upward and a boss **34** is formed at or near its mid-point to enter a corresponding recess **36** in the tongue **12** when the latter is thrust into the channel of the member **16** to make a connection. The cold working of the strip hardens the metal thereof and increases its resilience, the members being preferably made of brass or bronze of a kind which hardens as a result of cold working. When the tongue **12** is thrust into the channel, its side margins engage under the flanges **20** and its entering end forces the arched strip to a substantially straight position. The flattening of the arch increases the effective length of the strip so that its free end **30** slides on the offset floor portion **32**. The free end of the strip permits sufficient flattening of the arch of the strip to accommodate tongues **12** which may vary somewhat from the prescribed thickness of the stock from which the members **10** are made. The positive support of the free end **30** of the strip by the floor portion **32**, however, imparts the stiffness to the strip necessary for a firm contact between the tongue **12** and the flanges **20**.

I claim:

1. An electric connector member consisting of a piece of sheet metal shaped to form a shallow channel with a floor, upstanding side walls and inturned flanges along the upper edges of said walls, said floor having two longitudinally extending slots with a central strip between them, said strip being longitudinally arched upward and integrally joined at one end to the portion of the floor at the entering end of the member, the opposite end of the strip being free and bearing on another portion of the floor, the last mentioned portion of the floor being offset belw the adjacent portion of the floor.

2. An electric connector member as in claim 1, the free end of the strip being bent downward.

3. An electric connector as in claim 1, said strip being thinner and harder than the other portions of the floor.

4. An electric connector as in claim 1, said strip being thinner and harder than the other portions of the floor and having a central boss projecting up therefrom.

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