This invention relates to a wire wound electrical component and more particularly to conductor terminals therefor. Specifically, the present invention is primarily concerned with a wire conductor terminal construction for a wire-wound resistor.

The general organization of a wire-wound resistor comprises a plastic or ceramic spool or bobbin on which wire is wound in length to determine the value of the resistor. The resistor may then be coated or encapsulated with an insulating material. Before such insulating material is applied, however, the bobbin is provided at its ends with some form of metallic lug to which the respective wire ends are fastened or soldered and which lugs serve to make connection to other components of the circuit in which the resistor is used.

It is an object of the present invention to provide a bobbin and co-acting terminals or soldering lugs which are readily and cheaply manufactured in mass production by an ordinary stamping mill.

It is another object of the invention to provide a connecting lug which requires no particular tools for assembling on bobbin ends and which is devised to snap into locking engagement with the bobbin.

It is a further object of the invention to provide a soldering lug which effectively grips the bobbin and is removable therefrom for replacement if necessary.

The objects of the invention are brought about by means of a lug constructed of resilient sheet metal material and formed as a yoke having a pair of legs which fit into a groove disposed at a bobbin end, and being provided with ears that snap into indentations where the legs are forced into the groove. The terminal or lug is also provided with a pair of small ears to either of which the end of a resistance winding may be soldered.

A detailed description of the invention is now given in conjunction with the appended drawings, in which:

Figure 1 is an exploded end view showing a terminal in position above a bobbin and about to be moved into gripping engagement therewith.

Figure 2 shows a cross-section of the bobbin showing the terminal with the legs of the yoke slightly spread as they come into engagement with the bobbin and just prior to being snapped into place thereon.

Figure 3 shows an end view wherein the terminal is fully engaged with the bobbin.

Figure 4 is a perspective showing a bobbin with two terminals snapped into place and in position to have the wire winding of the bobbin soldered thereon.

Referring now to the drawings, the invention comprises a molded plastic bobbin body 10 having an end portion 12 at each end set off by a groove 14 for accommodating the legs 18 of a terminal conductor or soldering lug 20. The free end of each leg 18 is provided with an ear 24 to clamp over a shoulder 26 which shoulder engages against respective shoulders 30 effected by radial slots 32 in the end portions 12 and which slots 32 extend into the surface of the bottom 33 of the groove. Thus, as viewed in Figure 2, the legs 18 have been forced apart from the dotted position to the spread position as shown in the full lines, the ears 24 riding against the bottom 33 of the groove 14 just prior to being moved into the slots 32. It will be understood by comparing Figure 2 with Figure 3 that further downward movement of the terminal 20 results in ears 24 sliding past the outer edges of the respective shoulders 30 and snapping into place in the slots 32, at which time the shoulders 26 are below and in engagement with respective shoulders 30.

In order to provide suitable resiliency for sidewise movement of the legs 18, the body of the terminal 20 is provided with a slot 36, the sides of of the slot emerging from the body to form the legs 18. Thus, lengthened leverage is provided so that stress on the legs 18 tending to force the legs apart is not sufficiently great to make the terminal difficult to remove from locked condition in the groove 14. When the terminal has been forced into place it will be apparent that the arcuate inner edges 34 of the legs 18 substantially conform with the circular periphery of the bottom 33 of the groove to form a compact and snug fit thereagainst, although actual engagement is not essential.

Preferably, the thickness of the material from which the terminal is stamped should be such as to effect an easy but not wobbly fit in groove 14. Extending laterally outwardly from each ear 24 is a small soldering lug 40 to either of which the end of a wire wound resistor accommodated in the recesses 44 of the bobbin may be soldered in a well known manner.

For convenience in fabricating the bobbin, the slots 50 of the bobbin partitions 52 are in alignment with the slots 32. Slots 50 are required to conduct the wire leads outwardly of the windings in a well known manner.

It will be noted from the above description that the invention effects a completely symmetrical terminal lug which may be snapped into place on the end of a bobbin without orienting the lug in any particular position as to left or right, it being only required that the lug be pushed directly into the groove and then rotated until the ears 24 snap into place in the respective grooves 32. Alternatively, the lug 20 may be simply juxtaposed with respect to the bobbin 10 as shown in Figure 1 and pushed directly into the groove, in which case there would be no need to rotate the lug to bring about the ear and slot engagement.

Since all portions of lug 20 lie in the same plane it can be said that lug 20 is a flat member.

Having thus described our invention, we are aware that changes may be made without departing from the spirit thereof and accordingly we do not seek to be limited to the precise illustration herein given except as set forth in the appended claims.

We claim:

1. A wire wound resistor, a bobbin, a terminal element comprising a yoke having resilient relatively movable legs, said bobbin having a formation of engagingly said legs wherein said legs grip said bobbin by virtue of their resilience, said legs being provided with shoulders lockingly engageable with said formation, said formation comprising a peripheral groove formed in the material of said bobbin, said legs when being so engaged substantially conforming to said peripheral groove; said formation further comprising at least one radial slot extending longitudinally from an end of said bobbin to said groove, a wall of said slot forming a shoulder lockingly engageable by the shoulder of one of said legs.

2. In a wire wound resistor, a bobbin, a terminal element comprising a yoke having resilient relatively movable legs, said bobbin having a formation of engagingly said legs wherein said legs grip said bobbin by virtue of their resilience, said legs being provided with shoulders lockingly engageable with said formation, said formation comprising a peripheral groove formed in the material of said bobbin, said legs when being so engaged substantially conforming to said peripheral groove; said formation further comprising at least one radial slot extending longitudinally from an end of said bobbin to said groove, a wall of said slot forming a shoulder lockingly engageable by the shoulder of one of said legs.
3. In a wire wound resistor as set forth in claim 1, said one leg having a projection for soldering an end of wire wound on said bobbin, said projection being disposed in registration with said slot so as to be accessible therethrough.

4. In a wire wound resistor, a plastic bobbin having a peripheral groove provided with shoulders indented in the bottom thereof, a terminal element including a pair of resilient legs arcuately disposed to form a yoke slidable into said groove and adapted to be diverged by forced engagement with the bottom of said groove, said legs being arranged in an arc having an internal shape substantially conforming to that of the bottom of said groove so as to straddle a portion thereof, and projections carried by said legs for lockedly engaging said shoulders when said legs are disposed in said groove; said terminal also including a stem joining said pair of legs, a slot extending from the points of juncture of said legs with said stem for only a portion of the length of said stem.

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