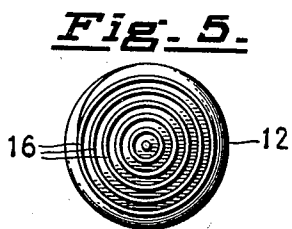
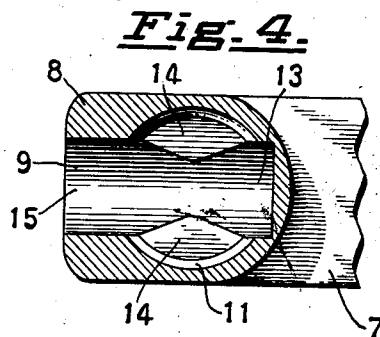
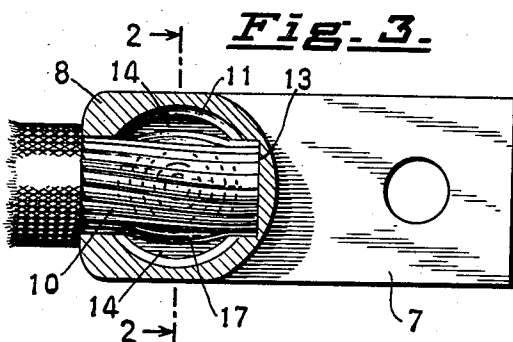
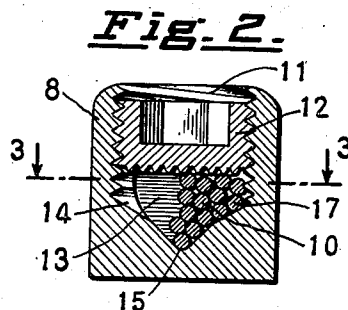
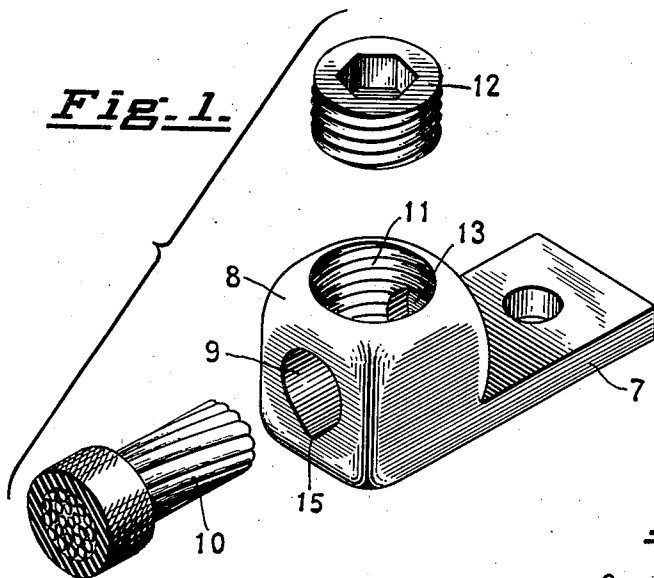


June 15, 1937.

R. N. ROWE
ELECTRICAL TERMINAL
Filed March 3, 1934

2,083,923



INVENTOR
Raymond N. Rowe,
BY *Wm. S. Allen*
ATTORNEY

UNITED STATES PATENT OFFICE

2,083,923

ELECTRICAL TERMINAL

Raymond N. Rowe, Plainville, Conn., assignor to
The Trumbull Electric Manufacturing Com-
pany, Plainville, Conn., a corporation of Con-
necticut

Application March 3, 1934, Serial No. 713,788

3 Claims. (Cl. 173—269)

My invention relates particularly to what are frequently termed solderless wire lugs or terminals.

The main object is to provide a simple inexpensive form of construction for affording effective electrical connection.

A special object is to provide a form of device suited for receiving multi-wire cables of the stranded type.

One of the objects is to provide a construction in which such a cable can be readily secured and effectively held.

Another object is to provide a construction which will provide a particularly effective electrical connection.

In carrying out the invention I provide a terminal preferably of one piece including an anchorage plate or base and a housing or body in which the cable end is secured. This housing is provided with a passage or recess forming a socket adapted to receive the end of the cable. The bottom of this socket is V-shaped or provided with tapered sides and a clamp screw or nut which is screwed into the body engages the cable and jams it tightly into the bottom of this V-shaped notch. At the same time the cable is spread so as to prevent accidental withdrawal.

The clamp nut is provided with a series of concentric ribs and grooves by means of which effective electrical connection is provided and the wires of the cable end are compacted and snugly held.

Fig. 1 is an exploded perspective view of the parts of the device embodying my invention.

Fig. 2 is a cross sectional view on the plane of the line 2—2 of Fig. 3, part of the wires of the cable being omitted to show the interior construction of the socket.

Fig. 3 is a sectional view on the plane of the line 3—3 of Fig. 2 with the wire ends in place.

Fig. 4 is a sectional view on the same plane as Fig. 3 but omitting the cable end.

Fig. 5 is a view of the underside of the clamping nut or screw.

The base 7 may be of any suitable form and provided with any suitable means of securing it to the usual support.

The main body 8 of the terminal is preferably integral with the plate portion 7 and is provided with a recess or socket 9 adapted to receive the end of the cable 10.

A screw threaded recess 11 intersects the socket 9 and is adapted to receive the clamp

screw or nut 12. The body and the clamp screw are preferably so designed that the clamp screw will not project above the top of the housing when the device is in use. This leaves a smooth upper surface and has all the advantages of typical counter-sunk safety set screws and the like.

The socket 9 extends beyond the recess 11 to form a pocket 13 for the tip end of the cable. The bottom of the threaded recess 11 is below the top of the socket 9 so that in effect lateral extensions or bays 14 are provided into which the cable may be expanded when the clamp screw is set up against it.

The bottom of the socket 9 is notched or V-shaped at 15 so that inclined sides are provided which coast with the sides of the cable wires when the clamp screw is set in tightly. Some of the wires are thus jammed out into the bays 14 as shown in Figs. 2 and 3.

The bottom of the screw plug is provided with a series of concentric ribs 16 as shown in Figs. 2 and 5 which act as teeth to cut into or indent the wires of the cable and assist in providing an effective electrical connection. They also tend to hold together the top wires while the central wires are being spread laterally as shown at 17, thus providing an effective mechanical connection as well as an effective electrical connection.

As previously explained, part of the wires are omitted from Fig. 2 of the drawing for the purpose of showing the interior construction of the socket but it will be readily understood that, in practice, the wires of the cable are forced outwardly and equally on both sides of the center line so as to fill the wire receiving portion of the socket.

It will thus be seen that the construction is simple and inexpensive and yet effective from an electrical as well as a mechanical standpoint. The cable end can be readily inserted and secured without soldering and yet it can be removed if necessary when desired.

The construction also provides a means for effectively clamping wires or cables of a considerable range of sizes or diameters.

A noteworthy feature of this connector resides in the attainment of a tight gripping contact and one feature contributing to this result is the ability of a multi-wire cable to be deformed transversely in three different directions, downwardly between the converging sides of the socket and also laterally into the pocket on each side of the cable. The converging sides of the socket are shown in the drawing as being convexly curved to

assist in this deformation or flow of the wires of the cable in the different transverse directions. The plurality of concentric ridges on the contacting or lower face of the clamp screw are shown 5 in the drawing as being adapted to engage and grip a large number of the wires of a cable in a number of places, irrespective of the angular position of the clamp, and at the same time these ridges are not so deep as to substantially impede 10 the transverse deformation of the conductor.

I claim:

1. An electrical connector including a body provided with a wire receiving recess, a clamping member for cooperation with a wire for holding 15 the same in said recess, the recess being laterally enlarged intermediate its ends to form pockets and allow a stranded conductor to be expanded laterally within said recess as it is compressed by said clamping member, whereby opposite sides 20 of such a wire may be bent in opposite directions, the wall of said recess opposite the clamping member and between said pockets being of V shape with the sides of the V convexly curved.

2. A solderless electrical connector having a 25 solid metal body with a recess for receiving a substantially cylindrical cable formed of multiple strands, a substantial portion of the wall of the recess being cylindrical to conform to the cable end and the remainder of the wall having 30 sides inclined at approximately ninety degrees

with respect to each other, said body having a screw threaded passage intersecting the recess, said passage being of larger diameter than the recess and a clamp screw adjustable in said passage and having a bearing surface whose general 5 plane is transverse to the passage, said recess having a V-shaped channel between the side walls beneath the screw so that when the screw is tightened on the cable in the recess strands are forced 10 downwardly in the V-shaped notch and spread laterally in the bottom of the sides of the screw recess.

3. A solderless electrical connector having a solid metal body with a recess for receiving the 15 end of a substantially cylindrical cable formed of multiple strands, a part of the wall of the recess being substantially cylindrical to conform to the cable end and a substantial part of the wall having channelled sides inclined toward each 20 other with an inclined angle of at least about ninety degrees between the side walls, said body having a screw threaded passage intersecting said recess, said passage being of larger diameter 25 than the recess and a clamp screw adjustable in said passage and having a generally flat bearing surface with a plurality of sharp concentric ridges so that when the screw is tightened on the cable in the recess some of the strands are forced into the sides of the passage.

RAYMOND N. ROWE. 30