

Jan. 15, 1957

H. J. ARBEITER ET AL

2,777,894

MALE CONNECTOR

Filed March 5, 1956

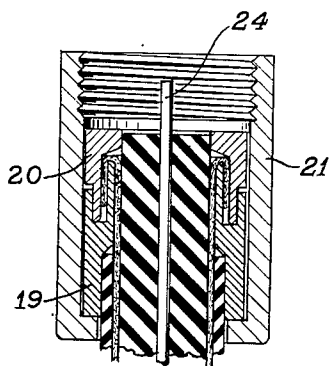


Fig. 1.

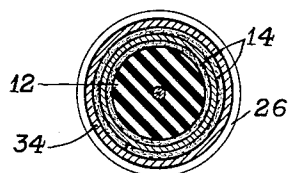


Fig. 2.

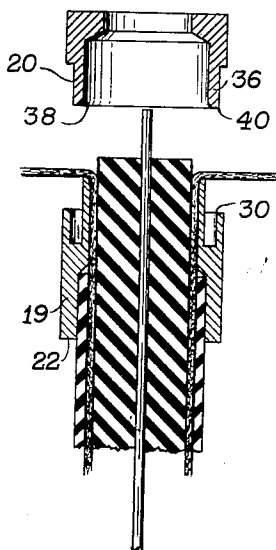


Fig. 3.

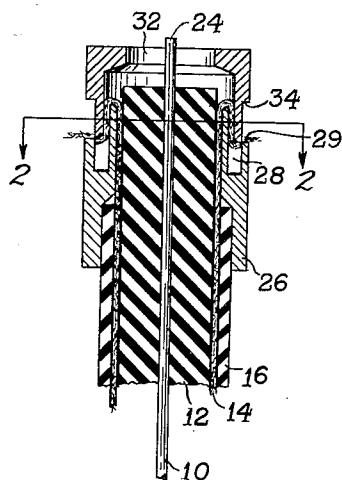


Fig. 4.

INVENTOR.
Henry J. Arbeiter &
BY Eric Winston
Milton Zucker
ATTORNEY

1

2,777,894

MALE CONNECTOR

Henry J. Arbeiter, Cornwell Heights, and Eric Winston, Philadelphia, Pa., assignors to Jerrold Electronics Corporation, Philadelphia, Pa., a corporation of Delaware

Application March 5, 1956, Serial No. 569,494

1 Claim. (Cl. 174—75)

This invention relates to connectors for coaxial cables, such as are used for the transmission of high frequency signals. It has as its principal object the provision of a male connector characterized by ease of assembly and economy of construction. Essentially, our invention provides means which simultaneously clamps the device together and removes excess sheath braid.

In making connections between coaxial cables, it is essential that a mechanically firm electrical connection be obtained between both the inner conductors of the two cables, and the outer conducting sheath. This may be done by the use of connectors in which the inner conductor wire of one cable is stripped of insulation and conducting sheath, and this wire is inserted into a female connector with an opening to receive this inner conductor wire, and outer contact is made by means of a threaded nut and bolt arrangement, which clamps the connection mechanically and thus insures the necessary electrical connection.

One of the problems in making such connections is the problem of stripping the outer conducting sheath, which is generally braided wire which is extremely difficult to handle as compared with the insulation layers, which are generally easy to strip.

According to our invention, we provide a male coaxial cable connector in which the problem of stripping the sheathing braid is overcome, by providing a two part metallic clamping collar for the end of the cable, with a recess in the bottom part into which the braid can be fitted, a lip on the top part which just can be pushed into the recess with the braid, and matched cutting edges on the outer rims of the lip and recess which act to sever the braid when the lip is pushed into the recess to assemble the device.

The invention can best be understood by reference to the accompanying drawings, in which

Fig. 1 is a longitudinal section through the device, assembled;

Fig. 2 is a section along the line 2—2 of Fig. 4;

Fig. 3 is a longitudinal section through the device, at the beginning of the assembly;

Fig. 4 is a longitudinal section through the device, at the point where cutting of the braid begins.

A coaxial cable consists of a central inner conductor 10, an inner insulation jacket 12, a sheath 14 generally of braided metal, and an outer insulating jacket 16. In connecting such devices, firm electrical contact must be made, central conductor to central conductor, braid to braid.

The central conductor connector can be made by strip-

2

ping it, and inserting it in a female connector to which the male connector is clamped, generally by some threaded connection which has electrical contact with the outer braid. We provide a connection for the braid by a two part collar 19—20, between which the braid is clamped. A threaded bushing 21 makes contact with the back 22 of the collar, and is threaded onto a female connector to complete the connection.

In making the connection, the central insulation is stripped from the central conductor to provide a prong 24; the braid is left the same length as the prong. The outer insulation is then stripped to a point well below the central insulation. The bottom collar 19 is a cylinder whose inside diameter just fits over the braid; the inside diameter of the cylinder is enlarged at the bottom to provide a lower portion 26 which just fits over the outer insulation, so that the cylinder comes to rest on the insulation at the point from which it was stripped. The top of the collar is partially cut away, to provide a well 28 and a shoulder 29, the inner edge 30 of which is machined sharp. The outer insulation is cut so that the top of the bottom collar 19 is just below the central insulation level.

The top half 20 of the collar comprises a cylinder completely open at the bottom, and with a top opening 32 which just fits over the central insulation. The cylinder walls are cut away on the outside near the top to provide a shoulder 34, which matches the shoulder 29 on the bottom half of the collar. The bottom of the top collar is a cylinder 36 which, with the outer braid, just overfits the well 28; the inner edge 38 of its bottom is curved off, the outer edge 40 is sharp.

The lower collar is fitted into place, as shown in Fig. 3, and the braid is laid out over its top. The top collar is then pushed down over the braid to the point shown in Fig. 4. At this point, the device is jammed, since the braid plus the cylinder part 36 overfits the well 28. If now the top collar is pushed down with a pliers, the sharp edges 30—40 cut off the excess braid between them as the cylinder and braid are seated in the well, providing the mechanically and electrically tight connection shown in Fig. 1.

Obviously, the device can be modified. Thus, the outside of the collar 20 could be threaded for connection to a female connector of other design. Other modifications will be apparent.

We claim:

A connector for a coaxial cable which includes a central conductor, inner insulation, a conductive sheath and outer insulation, comprising a two part cylindrical collar, the lower part of which has an interior bore the top of which just fits over the conductive sheath and the bottom of which fits over the outer insulation, whereby it seats on the cable at a point where the outer insulation is stripped from it, and has a cylindrical well in its upper portion, and the upper part of which has an opening fitting over the inner insulation and a cylindrical projection on its bottom whose inner surface is spaced from the inner wall of the well by a distance just smaller than the thickness of the sheath, and a cutting edge between the outside of the projection and the inner edge of the outside wall of the well.

No references cited.