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COAXIAL CABLE CONNECTOR

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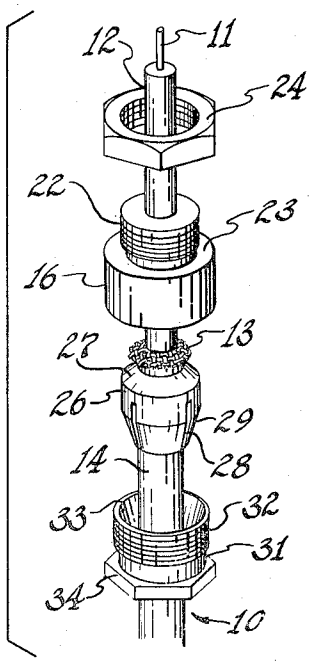


Fig. 1

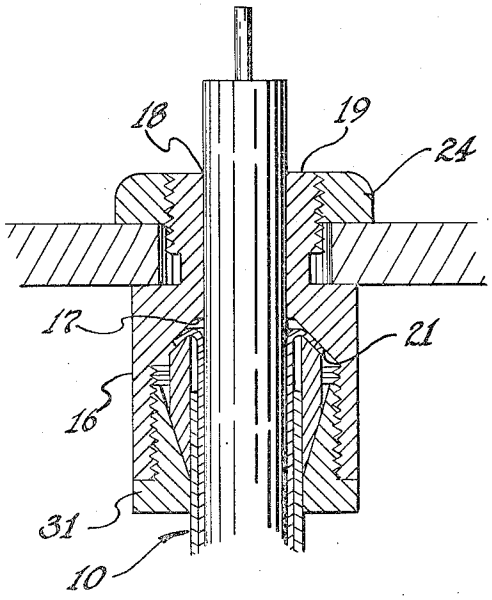


Fig. 2

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COAXIAL CABLE CONNECTOR

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1 Claim. (Cl. 174—74)

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This invention relates to apparatus for connecting a high frequency coaxial cable, and may be used either as an adapter for connecting two cables together, or alternatively, may be used as an end connection where it is desired to connect a coaxial cable to a chassis.

It is an object of this invention, therefore, to provide a coaxial cable adapter which securely fastens to the end of a coaxial cable and obtains an electrical contact between the outer conductor of the cable and the adapter.

Another object of this invention is to provide a coaxial adapter which allows the center conductor to pass therethrough and which firmly attaches to the outer conductor.

Still another object of this invention is to provide a coaxial cable adapter which is formed with a holding means for securely gripping the outer conductor of a coaxial cable.

A feature of this invention is found in the provision for a hollow cylindrical member which has a small opening formed through one end thereof for receiving the insulated center conductor of a coaxial cable. A wedge-shaped member is received within said cylindrical member and is forced by a lock nut against the outer conductor of the cable, thus securely fastening it to the adapter.

Further objects, features, and advantages of this invention will become apparent from the following description and claim when read in view of the drawings in which:

Figure 1 is an exploded view of the coaxial cable adapter of this invention with a coaxial cable extending through the various parts; and,

Figure 2 is a sectional view showing the assembled coaxial adapter of this invention.

Figure 1 shows a coaxial cable, designated generally as 10, which is formed with a center conductor 11 that is surrounded by insulation 12 which might be polystyrene, for example. The insulation 12 is surrounded by an outer conductor 13 which may be woven metal, for example. The outer conductor 13 oftentimes is covered with an outer insulation 14 which might be, for example, fibre glass or any other suitable insulating material. It is to be understood, of course, that not all coaxial cables have the outer insulation 14, and this invention relates to an adapter which may be used with cable with or without the outer insulation.

A generally cylindrical member 16 is formed with an internal shoulder 17, as best shown in Figure 2, and a smaller opening 18 extends from the shoulder 17 through the end 19 of the member 16. The outer edge of the shoulder 17 is formed with a tapered portion 21. The opening 18 is large enough to allow the insulating material 12 to pass therethrough so that the center conductor 11 and its insulation may pass out through the end 19 of the adapter. Adjacent the end 19 of the member 16 is a threaded portion 22 which terminates at a shoulder 23. The threaded portion 22 may be extended through an opening formed in a chassis and a nut 24 may be threadedly received thereon for attaching the adapter to the chassis. This is shown in Figure 2.

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The extending center conductor 11 may be connected to the desired circuitry within the chassis. A cylindrical wedge 26 has a first end 27 formed with a taper substantially equal to the taper of the shoulder 21 and is formed with a plurality of longitudinal slots 28 that extend from the opposite end 29 into the member. The opposite end 29 is also formed with a tapered portion. The member 26 is received over the external covering of the coaxial cable, which in the case of an insulated cable, will be the outer insulation. The outer conductor is allowed to extend through the member 26 and is folded back against the tapered portion 27. The outer insulation 14 is removed so as to terminate within the confines of the member 26. A wedge nut 31 which has an external threaded portion 32 and an internal tapered portion 33 engages the tapered portion 29 and is threadedly received within the cylindrical member 16. The head 34 of the nut 31 is rotated by a wrench or other means until the member 26 has wedged the tapered portion 27 against the outer conductor 13 and the tapered portion 21 of the cylindrical member 16. Simultaneously, the tapered end 29, due to the slots 28, is forced against the outer insulating material 14 to firmly hold it within the confines of the member 26.

It is to be understood, of course, that the adapter may be connected to another adapter, and thus join two coaxial cables. In this case the threaded portion 22 and the nut 24 would be replaced with a female and male connection respectively, in the adapters to be joined.

It is seen that the wedge shaped member 26 will tightly hold both the outer conductor and the outer insulation to the cylindrical member 16, and thus a strong connection will be obtained. Consequently, good electrical contact will be made between the outer conductor and the adapter 16. Oftentimes when the outer conductor 13 is bent back over the member 26, the ends of the webbing will be uneven and rough and it is desir-

able to trim them so that an even surface will be obtained.

Although this invention has been described with respect to a preferred embodiment thereof, it is not to be so limited as changes and modifications may be made therein which are within the full intended scope of the invention as defined by the appended claim.

What is claimed is:

A fastener for a coaxial cable comprising, a cylindrical member formed with an axial opening therethrough and with said opening having two different diameters so as to form a shoulder, a coaxial cable received within the larger diameter opening of said cylindrical member, the center conductor of the coaxial cable extending out of the smaller opening of said cylindrical member, a generally cylindrical wedge-shaped member with first and second tapered ends, said wedge-shaped member received over said coaxial cable and the outer conductor of the coaxial cable bent back over the first end of said wedge-shaped member, a plurality of slots formed in said wedge-shaped member and extending from the second

tapered end into said wedge-shaped member, and a holding means detachably connectible within the larger diameter opening of said cylindrical member and engageable with said second tapered end of the wedge-shaped member to compress it on the coaxial cable and to place bearing force between the first tapered end and said shoulder.

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