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(54) Cable support

(57) A cable support for a cable or lead (1) connected to movable apparatus, headsets or the like, is of the type comprising a body having a central passage (6,) for the cable (1), the passage gradually widening towards the end from which the movable part of the cable (1) extends.

In the cable support disclosed, which may take the form of a lead-through mounted in a wall or panel, a circumferentially continuous clamping ring (5) is located externally around a tubular part of the body and exerts a radially directed clamping force on the cable and passage to effect load-relieving clamping of the cable or lead (1). Another embodiment is suitable for securing to an article of clothing e.g. by means of a clip.

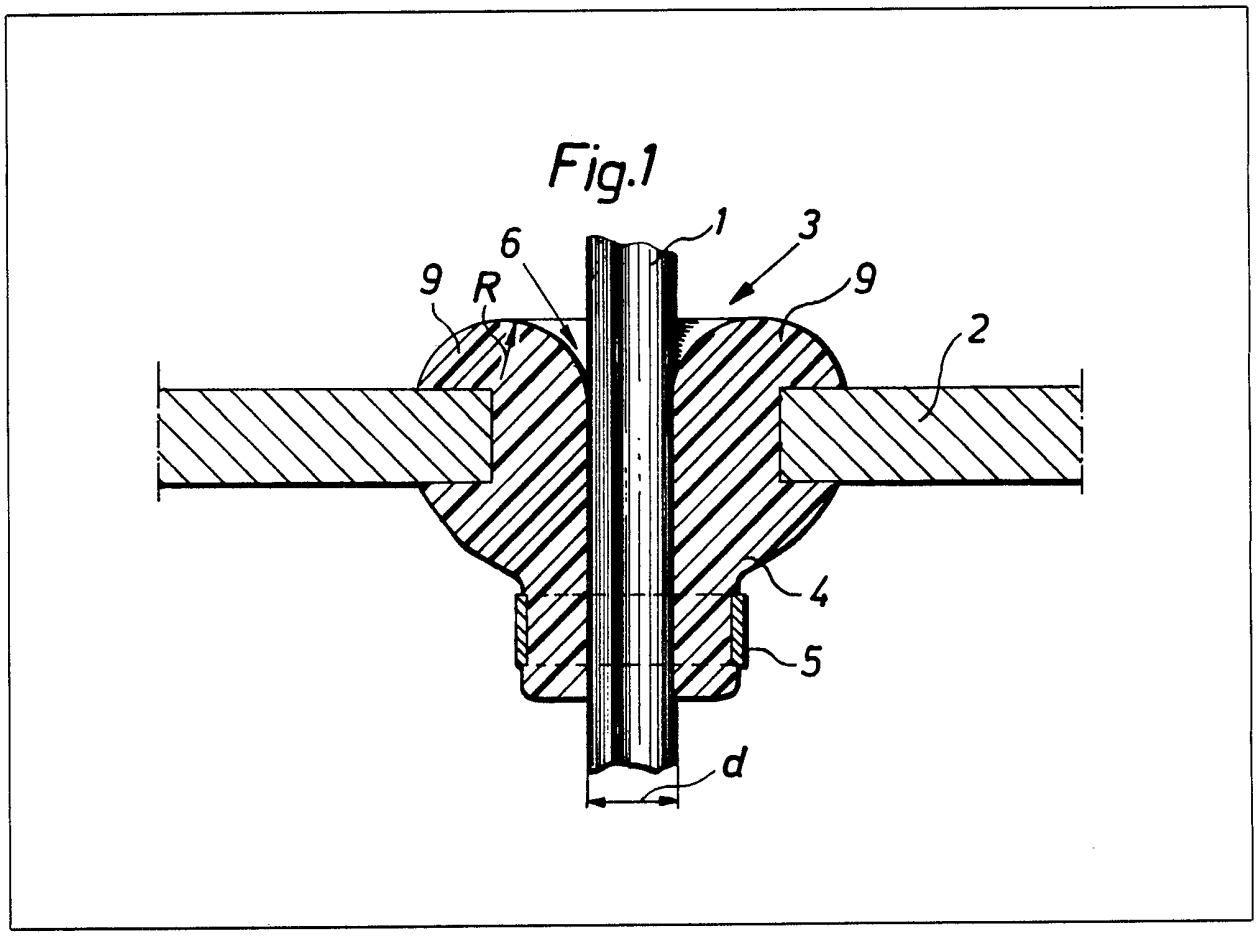

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Fig.1

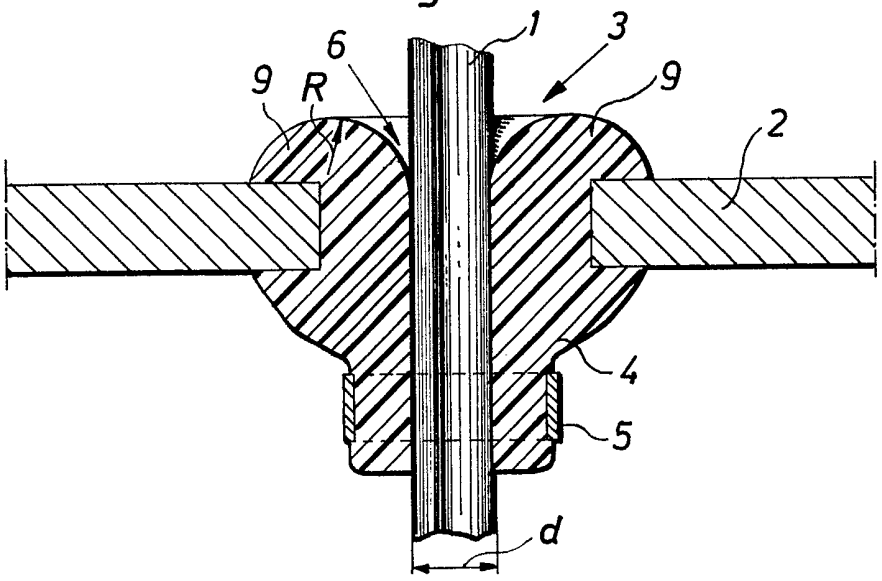
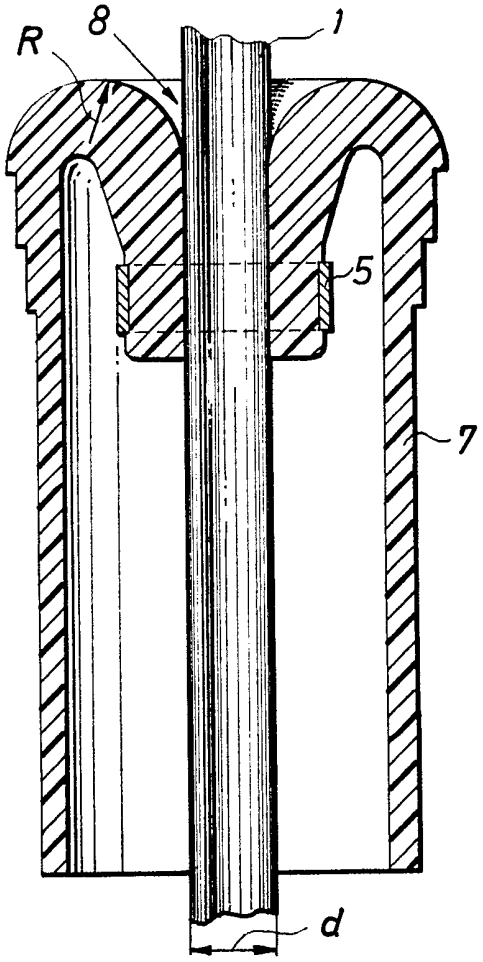


Fig.2



SPECIFICATION

Cable support

THIS INVENTION relates to a cable support of the type affording a through passage for a cable, which passage flares gradually towards an end thereof. Such cable supports are utilized for flexible cables which are subject to frequent movement, such as lead connected to movable apparatus, e.g. a headset or the like.

A cable support of the type described above is disclosed in Danish Specification No. 121,768. In this cable support, a clamp ring is used which can be tightened by means of a screw and is provided with teeth, designed to exert a clamping pressure on the cable led through the device. With this device, it is thus extremely difficult to distribute the clamping action uniformly around the cable and there is therefore considerable risk of the clamping action being too great at opposing sides of the cable.

The drawback mentioned above is also presine in a device of the type described in German Offenlegungsschrift 2,114,450 where the clamp casing gives disadvantageous clamping of the cable, acting in one plane only.

Swedish Patent Publication 7507489-8 shows a different type of clamping means for a cable, in which the cable is pressed down into recesses located one behind the other and laterally displaced in a transverse direction relative to each other. Although this device may provide reliable clamping of the cable, it is bulky since it must act along a considerable length of the cable to achieve the desired effect.

It is an object of the present invention to provide an improved cable support which is inexpensive to manufacture, can provide uniformly distributed radial clamping pressure on a cable extended therethrough, which can hold a cable reliably and which requires little space.

According to one aspect of the present invention there is provided a cable support in the form of a plug having a central passage therethrough for a cable, said passage being partially defined by the interior of a tubular portion of said plug having located thereabout a circumferentially continuous clamping ring adapted, in use, to exert a radially inwardly directed clamping force on said tubular portion and a cable extended, in use, through said passage, to effect load-relieving clamping of the cable or lead, said passage widening progressively in a direction away from the location of said clamping ring.

The invention also comprises within its scope the combination of a cable with a cable support, according to the invention.

By using an unbroken, i.e. circumferentially continuous, clamping ring located externally around said tubular portion, said clamping ring exerting a radially directed clamping force on the tubular portion, load-relieving clamping of the cable or lead is achieved in the passage.

Embodiment of the invention are described below, by way of example, with reference to the accompanying drawings, in which:—

Figure 1 is an axial section view of a first embodiment of cable-support embodying the invention, with a cable extending therethrough, and

Figure 2 is a similar view showing a second embodiment of the invention.

Referring to Fig. 1, a cable support 3, designed to lead a cable 1 through a wall, panel or the like, indicated at 2, is in the form of a plug of circular annular cross section perpendicular to the cable axis. The plug thus affords a central through passage 6 for the cable 1. The plug has an external circumferential channel to receive the edge of the aperture in panel 2 in which the plug is fitted. Adjacent the lower end of the plug (as viewed in Fig. 1), the wall 4 of the latter is extended downwardly to form a tubular portion of the plug, and an unbroken, i.e. circumferentially continuous, clamping and load-relieving ring 5 is fitted around this tubular portion. Over a region extending from the lower end of said tubular portion, as viewed in Fig. 1, to approximately the level of the wall 2, the passage which receives the cable 1 is, like the cable, cylindrical and of substantially uniform diameter. Thereafter the passage flares upwardly and outwardly in such a way that if the cable is pulled at an angle to the axis of the passage, it is constrained to follow a gentle bend over the surface of this flaring portion of the passage. To this end, the form of the passage 6, over this flaring portion, is such that, in axial section through the plug (as shown in Fig. 1) the surface of the passage follows on either side of the axis if the plug, a circular arc the radious R of which is preferably substantially 1.5 times the diameter of the portion of the passage 6 extending through said tubular portion.

To facilitate application of the plug in its hole in the panel 2, the upper flange 9 shown in Fig. 1, and which forms the upper wall of the peripheral channel, is preferably relatively thin.

In the embodiment of Fig. 2, the support takes the form of a tube 7, the upper part of which has been turned inwardly and downwardly, as shown in the drawing, to provide a formation similar to the plug of Fig. 1, in that it affords an axial central through passage 8, corresponding to passage 6 in Fig. 1, a lower and intermediate portion of which are internally cylindrical and an upper portion of said passage is defined by a tubular portion, (concentric with, and lying within the tube 7)

around which is engaged a circumferentially continuous clamping and load-relieving ring 5. As with the embodiment of Fig. 1, the form of the passage 8, over the flaring portion, is such that in axial section through the cable support, the surface of the passage follows, on either side of the axis, a circular arc the radius R of which is substantially 1.5 times the diameter *d* of the cable or of the portion of the passage 8 extending through said tubular portion. This design of cable support is suited for securing to an article of clothing worn by a person, and is preferably provided with a clip or the like, not shown.

The cable supports described with reference to the drawings thus protect the cable or lead at the point where the greatest bending stresses occur since the passage (6 or 8) widens progressively in the direction of the movable part of the cable or lead and also since the clamping action on the lead of the ring via the tubular portion will effectively retain the cable or lead so that it cannot be displaced in the passage even if a tensile strain is exerted on the lead.

Furthermore, the cable supports disclosed are axially short, which is important in the case of portable apparatus utilizing, for example, a microphone switch, etc.

CLAIMS

1. A cable support in the form of a plug having a central passage therethrough for a cable, said passage being partially defined by the interiof of a tubular portion of said plug having located theraround a circumferentially continuous clamping ring adapted, in use, to exert a radially inwardly directed clamping force on said tubular portion and a cable extended, in use, through said passage, to effect load-relieving clamping of the cable or lead, said passage widening progressively in a direction away from the location of said clamping ring.

2. A cable support according to claim 1 wherein said passage flares outwardly in said direction away from said clamping ring in such a way that, in axial section through the plug, the surface of said passage on either side of said axis extends in a respective circular arc.

3. A cable support according to claim 2 wherein the radius of said arc is substantially 1.5 times the diameter of the passage in the region of said clamping ring.

4. The combination of a cable support according to claim 1 with a cable of substantially circular cross-section extended through said passage and fitting tightly within said passage in the region of the clamping ring, and wherein the radius of said arc is substantially 1.5 times the diameter of the cable.

5. A cable support substantially as hereinbefore described with reference to, and as shown in, Fig. 1 of the accompanying drawings.

6. A cable support substantially as hereinbefore described with reference to, and as shown in, Fig. 2 of the accompanying drawings.

7. The combination of a cable support with a cable, substantially as hereinbefore described with reference to Fig. 1 of the accompanying drawings.

8. The combination of a cable support with a cable, substantially as hereinbefore described with reference to Fig. 2 of the accompanying drawings.

9. Any novel feature or combination of features described herein.

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