July 10, 1956 C. A. HORN 2,754,488

CONNECTION PROTECTOR

Filed March 8, 1954

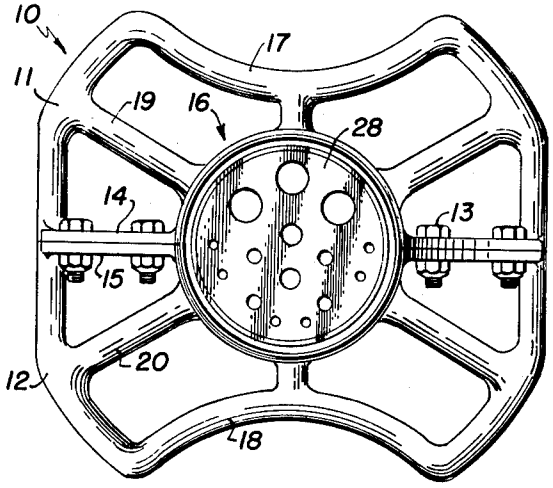


FIG. 1.

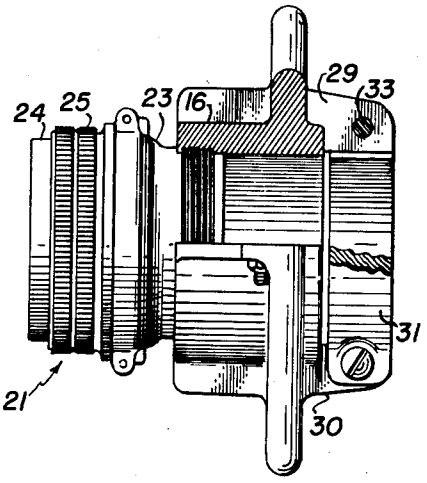


FIG. 2.

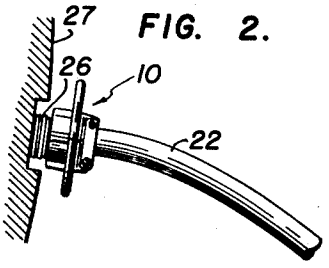


FIG. 4.

FIG. 3.

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United States Patent Office 2,754,488
Patented July 10, 1956

2,754,488

CONNECTION PROTECTOR

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Application March 8, 1954, Serial No. 414,723
3 Claims. (Cl. 339—108)

This invention relates to multiple contact electric plugs and has reference to a protector therefor. Particularly, the invention has reference to a plug protector for the end of a cable extending from a ground power source for connection with electrical systems of aircraft. Such power source is used while the airplane is on the ground to save the airplane's batteries when testing various electrical systems, such as gun turrets, navigation system, bomb bay doors, etc. The plug referred to generally consists of an inner and outer housing, a threaded retaining ring, a disk insulator within the inner housing, and connector sleeves positioned through the disk insulator. The ends of the wires in the cable are soldered to the inner or terminal ends of the contact sleeves, which, in turn, receive grouped projecting contacts mounted in the side of the airplane.

An object of the invention is to protect the plug referred to from breaking in the event the supply cable is accidently dropped.

Another object of the invention is to provide a handle for conveniently connecting and disconnecting the cable.

Another object of the invention is to provide a plug protector mounted on the referred to cable in such a manner that the soldered connections are not flexed and consequently broken during the handling thereof.

A particular object of the invention is to provide a plug connection and handle capable of being connected with the airplane system by an operator wearing thick mittens or the like.

A further object is to provide a combination plug protector and handle capable of being installed in the field with ordinary tools without a continuity check.

A still further object of the invention is to provide a self centering plug protector whereby the wires within the cable are not placed under lateral stress when tightening the protector in place.

Other objects and advantages of the invention will become apparent from the following description and the accompanying drawing, wherein:

Figure 1 is an end elevation of a multiple contact plug having a protector in accordance with the invention mounted thereon.

Figure 2 is a side elevation and broken section of the plug and protector shown in Figure 1.

Figure 3 is a perspective view of the plug and protector as seen from the rear of Figure 1 and particularly showing a clamping arrangement for attaching the protector to a multiple circuit ground supply cable for aircraft.

Figure 4 is a reduced side elevation of the arrangement shown in Figure 3 and illustrating the plug connected with the fuselage of an airplane.

The protector **10** illustrated in the drawing is generally

in the form of an octagonal rim comprised of separate detachable members **11** and **12** connected by bolts **13** extending through flanges **14** and **15** along a transverse center line. At the center of the protector **10** there is a tubular body **16**, also divided and integral with the respective members **11** and **12**. The sides of the members **11** and **12** opposite their respective flanges **14** and **15** are inwardly curved, as at **17** and **18**, and which resulting configuration of the generally octagonal protector tends to prevent rolling when the assembly to be described is on the ground. Webs **19** and **20** connect the peripheries of the separate members **11** and **12** with their respective separate portions of the tubular body **16**.

A multiple contact plug **21** is threadedly received in one end of the tubular body **16** and is connected with the extending end of a ground power source cable **22** which extends through said tubular body for making contact with connector sleeves in said plug. Since the referred to connector plug **21** is a standard commercial item, the same is not herein described in detail; however, for the purpose of this description, it is pointed out that the same is comprised of inner and outer housings **23** and **24**, a retainer ring **25** around the latter for connection with the electrical inlet **26** in the side of an airplane fuselage **27** or the like. Within the plug **21** there is a disk insulator **28** in which the connector sleeves, not shown, are mounted. The sleeves last referred to are soldered to the ends of the wires, not shown, in the cable **22**.

Integral with the separate halves of the tubular body **16** and on the side of the protector **10** opposite the plug **21** there are connecting flanges **29** and **30** for supporting semicircular halves of ring clamps **31** and **32** which are held in place by screws **33** and **34**. If desired, spacers may be provided between the ends of the clamps **31** and **32** and the respective flanges **29** and **30**. Since the flanges **29** and **30** are perpendicular to the protector connecting flanges **14** and **15**, it is pointed out that the described clamp arrangement centers the cable **22** and prevents lateral strain on the referred to soldered connections between the sleeves and the cable wires. Additionally, the cable **22** is clamped at a distance from the soldered connections and thereby prevents breakage of the latter due to flexing of the plug as may occur when the described protector is not used.

The foregoing description is exemplary and may be varied by those versed in the art without departing from the scope of the appended claims.

What is claimed is:

1. A protector for a multiple contact plug on the end of a cable, said protector comprising a cylindrical body adapted to engage said plug around the end thereof adjacent the length of said cable, and a polygonal rim around and secured to said body, the plane of said rim being perpendicular to the axial center of said cylindrical body.

2. A protector for a multiple contact plug as defined in claim 1 and wherein said rim and said body are transversely divided into separate members, and means detachably securing the same to each other.

3. A protector for a multiple contact plug as defined in claim 1, and wherein said body includes oppositely arranged projecting flanges on the end thereof adjacent said cable, and arcuate clamps secured to said flanges and engaging said cable.

No references cited.