Jan. 3, 1956 J. C. JORDAN ET AL 2,729,802

BATTERY CONNECTOR

Filed May 21, 1954

FIG. 1.

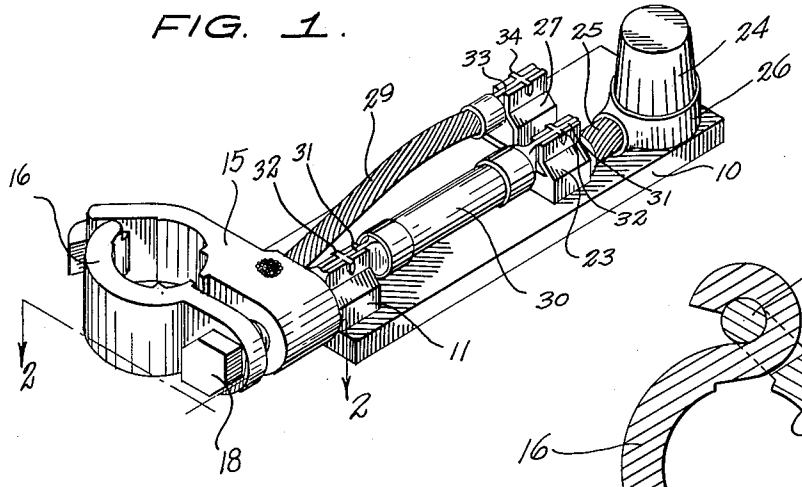


FIG. 2.

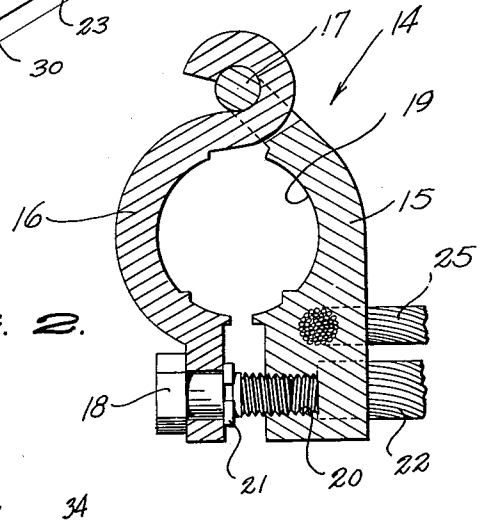
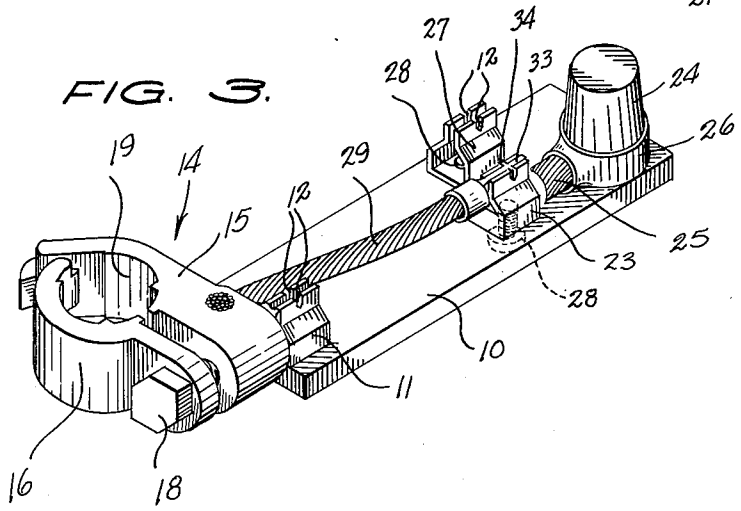


FIG. 3.



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United States Patent Office 2,729,802 Patented Jan. 3, 1956

2,729,802

BATTERY CONNECTOR

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Application May 21, 1954, Serial No. 431,563

1 Claim. (Cl. 339—256)

This invention relates to battery connectors.

An object of the invention is to provide a battery connector for connecting a lead cable to a battery terminal, which connector includes a fuse to guard the circuit against overloads and which, at the same time, is adjustable to maintain the circuit during an emergency period when the fuse may have blown out.

Another object of the invention is to provide a battery connector of the character referred to above which is quickly and easily attachable to a battery terminal and lead cable and in which the included fuse may be readily replaced.

Other objects and advantages of the invention will appear from the following description considered in conjunction with the attached drawings, in which:

Figure 1 is a perspective view of the connector of the present invention in the normal position.

Figure 2 is a view taken on the line 2—2 of Figure 1.

Figure 3 is a perspective view of the connector of the present invention in the emergency position.

Referring now to the drawings in more detail, the reference numeral **10** designates a base of insulating material.

A first conductive clip **11** is positioned adjacent one end of the base **10** and is carried thereby. The clip **11** consists of a strip of conductive material having its mid portion disposed horizontally and its end portions bent upwardly and offset toward each other, intermediate their ends, to bring the upper sub portions into proximate spaced parallel relation to form blade-receiving contacts. Each end of the strip constituting the clip **11** is provided with a notch **12**, the notches **12** being in alignment. The mid portion of the clip **11** is fixedly secured upon the upper surface of the base **10**.

A battery post clamp, generally designated **14**, is positioned beyond said one end of the base **10** and is electrically connected to the first clip **11**, the clamp **14** being adapted to engage a battery terminal post. The clamp **14** consists of a fixed leg **15**, a movable leg **16**, having one end pivotally connected about a pin **17** formed in the complemental end of the leg **15**, and a bolt **18** rotatably supported in the other end of the leg **16** and threadably engaging the complemental end of the leg **15**. The legs **15** and **16** are bowed, intermediate their ends, providing a space **19** therebetween conformably shaped to receive a battery terminal post. The head of the bolt **18** is flush against the outwardly facing surface of the leg **16** and a split washer **21**, seated in an annular groove formed in the unthreaded portion of the shank of the bolt **18**, is flush against the inwardly facing surface of the leg **16** so that the bolt **18** is held against transverse movement in either direction with respect to the leg **16**. The shank end of the bolt **18** is threadably engaged in a recess **20** extending inwardly from the facing surface of the leg **15**. The threading of the bolt **18** into the recess **20** is effective to bring the arms **15** and **16** toward each other and into clamping engagement with a battery terminal post inserted therebetween. The threading of the bolt **18** out of the recess **20** is effective to move the legs **15** and **16** away from each other to release their engagement with an interposed battery terminal post. The clamp **14** is electrically connected to the first clip **11** by a short length of cable **22** which has one end fused into the leg **15** of the clamp **14** and the other end fused into the mid portion of the clip **11**.

A second conductive clip **23** is spaced from the other end of the base **10** and is carried by the base **10**. The clip **23** is of the same construction as the clip **11** and has its mid portion fixedly secured upon the upper surface of the base **10**.

A conductive terminal post **24** is positioned intermediate the clip **23** and the other end of the base **10** and is carried by the base **10**, the post **24** being electrically connected to the clip **23**. The post **24** is connected to the clip **23** by a length of cable **25** which has one end fused into the mid portion of the clip **23** and the other end fused into a collar **26** surrounding the base of the post **24**.

Spaced from the other end of the base **10** and carried by the base **10**, is a third conductive clip **27**. The clip **27** is of the same construction as the clips **23** and **11** and is spaced from and out of electrical contact with the clip **23**. The clip **27**, like the clips **23** and **11**, is fixedly secured to the upper surface of the base **10** by suitable attaching means as, for example, a screw **28** extending upwardly through the base **10** and threadably engaging the mid portion of the clip, as shown in broken line with respect to clip **23**.

Extending between and electrically connecting the clip **11** and the clip **23** is a fuse **30**. The fuse **30** is a cartridge fuse of the knife blade type, each end of the fuse being provided with a projecting blade **31** which is frictionally received between the contacts of the adjacent clip to make electrical contact therewith. Each blade **31** is provided with a cross piece **32** which seats in the notches **12** of the complemental clip when the blade **31** is inserted therein to prevent the blade from sliding downwardly out of contact with the contacts of the clip.

A flexible conductor **29** extends between the clamp **14** and the clip **27**. The conductor **29** has one end fixedly connected to the clamp **14**, by fusion or other suitable means, and has the other end provided with means for connecting said other end to the clip **23** when the fuse **30** has been removed, said means being normally connected to the clip **27**. The means on the other end of the conductor **29** consists of a knife blade **33** similar to the blades **31** provided on the ends of the fuse **30** and formed with a cross piece **34** similar to the cross pieces **32** of the blades **31**.

For normal conditions of use, the connector of the present invention is hooked up as shown in Figure 1 with a fuse **30** connecting the clips **11** and **23** and with the blade **33** upon the free end of the conductor **29** engaged in the clip **27**. The clamp **14** is opened by the unscrewing of the bolt **18** and is placed about a battery terminal, the bolt **18** then being tightened to bring the legs **15** and **16** into embracing engagement about the terminal. A lead cable, running to the equipment to be served by the battery, is now connected to the post **24** and the circuit is completed and in operative condition. Should a short circuit or other reason for overload occur in the circuit, the fuse **30** will blow out breaking the circuit. In the customary circuits of this kind, the blowing out of the fuse will put the equipment out of operation until a new fuse can be obtained and inserted in its place. The connector of the present invention affords an emergency means for closing the circuit to continue the operation of the equipment until another fuse can be obtained. To make the emergency adjustment, the blown out fuse **30** is removed from the clips **11** and **23**.

The free end of the conductor **29** is then transferred from the clip **27** to the clip **23**, as shown in Figure 3 and thus serves to complete the circuit in lieu of a fuse until a new fuse can be obtained. It is obvious that the adjustment can be readily made and requires only the use of parts which are connected to the conductor at all times and are therefore sure to be available when needed. It is also obvious that when a new fuse is obtained, the shifting of the connector back to its normal condition is quickly and easily accomplished.

What is claimed is:

In a battery connector, a first conductive clip having blade contacts arranged in upstanding spaced relation, a second conductive clip also having blade contacts arranged in upstanding spaced relation positioned in longitudinal spaced relation with respect to said first clip with the space between its blade contacts in alignment with

the space between the blade contacts of said first clip, there being registering cross slots in each of said blade contacts extending inwardly from the upper ends thereof, each of said blade contacts being adapted to receive in the space therebetween a blade type terminal projecting from an end of a fuse and to frictionally engage such terminal when received in said space with the registering cross slots receiving the cross piece carried by said blade type terminal.

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