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BATTERY CONNECTOR AND FUSE

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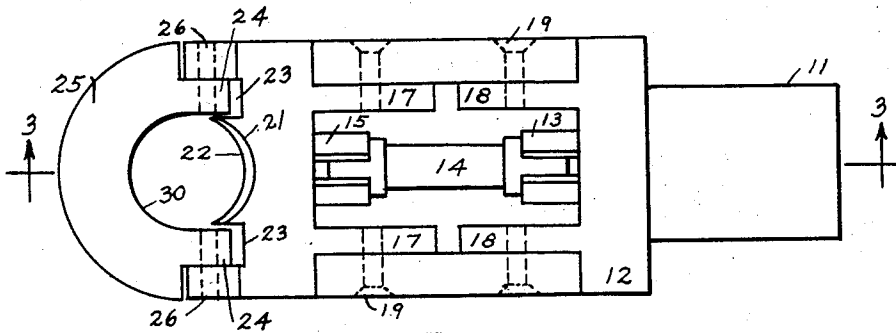


FIG. 1.

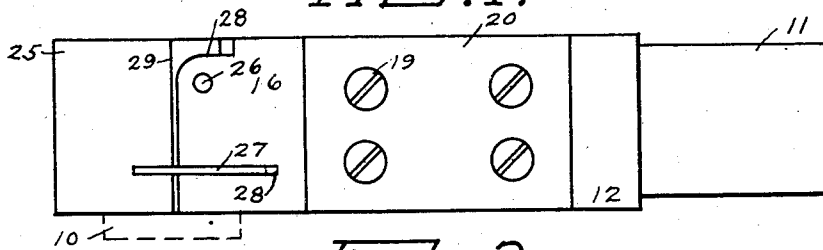


FIG. 2.

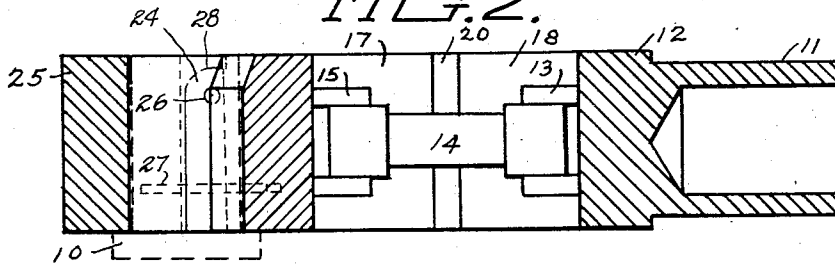


FIG. 3.

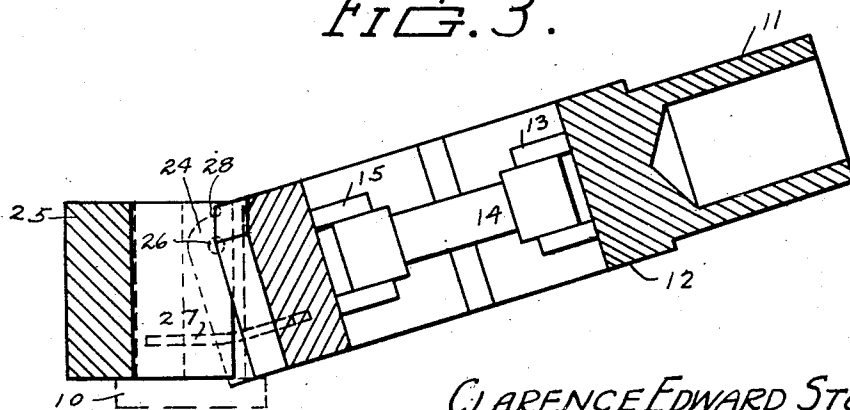


FIG. 4.

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BATTERY CONNECTOR AND FUSE

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1 Claim. (Cl. 200-115.5)

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This invention relates to battery connections and particularly to those employed with storage batteries.

The object of this invention is to provide a new and improved battery connection that will avoid one or more of the disadvantages and limitations of the prior art and also provide a battery connection that will afford fuse protection of the leads from a battery. An additional object is to have such a battery connection arranged so that it will open and close readily when such an operation is desired.

Other objects will become apparent as the invention is more fully set forth.

In a particular form of the invention shown in the drawings which outlines the invention in connection with the attached description, the scope of which is pointed out in the claim, other objects will become evident. Referring now to the drawings:

Figure 1 is a plan view of a battery connector embodying this invention,

Figure 2 is a side elevation of Figure 1,

Figure 3 is a sectional view taken along line 2-3 of Figure 1, showing the connector attached to a battery, and

Figure 4 is a sectional view similar to that shown in Figure 3, but with the connector open and ready for removal from or placement on a battery terminal.

Similar reference characters refer to similar parts throughout the drawings.

In the drawings 10 represents a conventional binding post of a storage battery. The connection employed in this invention consists of lug 11 integrally connected with a fuse block end 12 that has clips 13 for holding one end of a fuse 14. The other end of the fuse is inserted in a clip 15 mounted on a fuse block 16. This fuse block 16 and that of fuse block 12 have their side portions 17 and 18 respectively arranged to take insulated pieces 20 to support and keep them separated and insulated from each other. They are suitably fastened in place by the screws 19.

The connector is used for coupling a binding post 10 with an extraneous network. The extension part 21 and the cap piece 25 form a split socket suitable for slipping over the binding post. It is tilted angularly during placement, and clamped thereon when straightened out in the position shown in Figures 2 and 3. For convenience the portion of the device between the socket and the lug 11 is termed the fuse holder. The fuse holder includes the fuse clips 13 and 15, their supporting conducting bases 12, 16, links 17

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and 18 and removable insulating blocks 20, together with the fuse 14 when inserted therein. All the parts excepting the insulating blocks 20, are of metal or conducting material for current to pass across. This connector has a number of valuable features. Its socket slips in place on the binding post easily before clamping thereon. Then with a movement of the fuse holder like a lever, the fuse holder portion of the socket is bent down to a straightened position and fastened to the post. The rounded form of the cap piece 25, enables the connector to be installed without damage to the battery or generator on which the binding post is mounted or the hands of the operator. This form is easy to handle. The holder can be handled without causing electrical effects to inconvenience the user, if he handles it by holding the insulating blocks 20. The fuse is in an open well which keeps it well ventilated, and enables it to be replaced or removed with facility. The links 17 and 18 keep the post and lug portions separated. They also serve to reinforce the holder and make its structure strong. The lug 11 is conveniently arranged and as compactly set in the connector as possible, while at the same time being easy to connect to. The inclusion of the fuse not only protects the equipment that is fed from the binding post, but also affords an easy means of opening the battery circuit. This is done by removing the fuse bodily. The springs 27 give a quasi-automatic action to the operation of placing the socket in proper position on and off the binding post in cooperation with the hinge 26. They do not forcibly bring the parts of the socket together on the post. They simply facilitate the manipulation of the socket on the holder in a manner not dangerous or injurious to the fingers of the user, as older types sometimes are. Since the insulating blocks 20 are removable by unloosening the screws 19, the parts of the holder can be separated for inspection, cleaning and replacement in a very easy way. If the fuse should be frozen in from any cause, it can be reached from either side as well as the top by detaching one of the blocks 20. This arrangement also enables the lug end portion of the holder to be completely separated if necessary or desirable, without detaching the socket from the binding post or the lug from the cable that may be soldered into it. This is an added convenience available at all times for any special requirement that may arise.

The fuse block 16 has an extension part 21 drilled in a tapered and cylindrical manner at 22 to fit on to the binding post 10. It is also

milled out in front at 23 to receive coordinating side pieces 24 belonging to a cap piece 25 forming the remainder of the structure of this block that holds it on the binding post. The cap piece 25 has a cylindrical slot 30 to clamp the binding post 10. Pins 26 pass through the block 16 and the cap piece 25 and serve to hinge the parts together. A pair of flat springs 27 are inserted in these parts at 28 to resiliently keep the fuse blocks aligned and horizontal with each other. The raising of the fuse blocks angularly with respect to the cap piece 25 brings their faces 28 against the face 29 of the cap piece so that the latter is forced out and tends to disengage off the binding 10, or at least release itself therefrom. In the reverse direction, the blocks and springs 27 tend to cause a tightening on the binding post 10. It can be readily appreciated from the drawings, that the removal or replacement of the fuse, can be taken care of in the customary manner. The quasi-dove tailing of the fuse block 16 and the cap piece 25 keep the electrical and mechanical connection between them in a substantial manner.

While but two general forms of the invention is shown in the drawings and described in the specifications it is not desired to limit this application for patent to this particular form or in any other way otherwise than limited by the scope thereof, as it is appreciated that other forms could be made that would use the same principles and come within the scope of the appended claim.

Having thus described the invention what is claimed is:

A combination fuse and binding post connector comprising in combination, a lug element including a fuse connection coupled thereto, a split socket including an extension part having a predetermined surface arranged for electrical coupling to a binding post by being similarly conformed on one portion thereof and a cap piece hinged at an upper portion to the upper portion of said extension part so the socket can open up underneath and formed to fit around another portion of said binding post, said extension part

also including another fuse connection mechanically symmetrical with the first mentioned fuse connection whereby said connections can hold a fuse connectable between them, insulating blocks removably attached to the said element and bridging over to said extension part to electrically and mechanically separate each from the other while at the same time holding them in rigid physical alignment with each other, and forming assembled a fuse holder, and flat springs attached to said extension part and cap piece and joining the split socket together without obstructing the operation of the hinge to position the lug element and extension part at an angle to said cap piece when normally the latter is not attached to said binding post and being subject to straight line alignment when placed on said binding post and the said holder including the extension parts swung on said hinge with an edge of the holder fulcrumed on a portion of the binding post, whereby leverage pressure on the holder will draw the cap piece and extension part of the holder in closer contact with said binding post and electrically couple the lug element through the fuse and connections, said extension part and cap piece to provide a fused coupling between the binding post and the lug element, with said springs holding them rigidly in a position encompassing the binding post when in said straight line alignment after being forced therein and until said holder is forcibly tilted back to its angular unloosened position again.

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