Jan. 21, 1964 T. A. OVERBY 3,118,719

BATTERY CABLE CONNECTOR

Filed July 19, 1962

Fig. 1

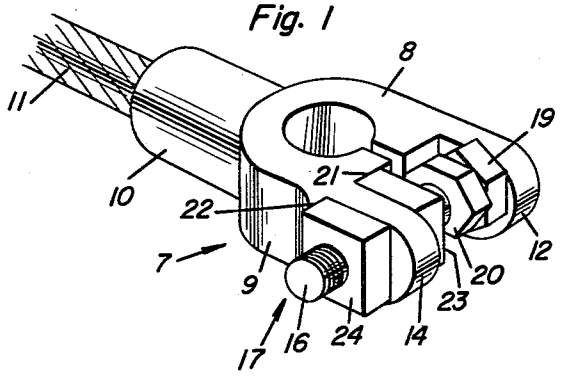


Fig. 3

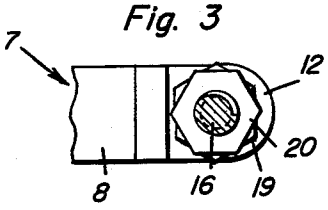


Fig. 2

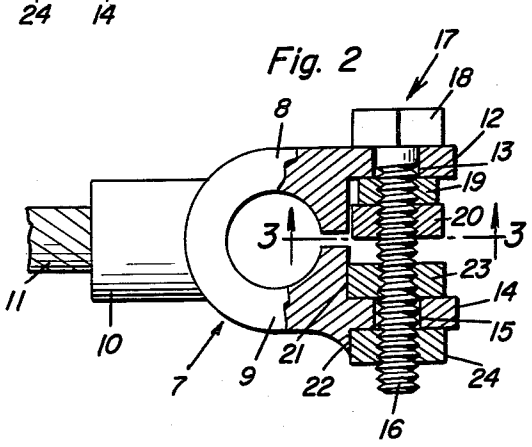


Fig. 6

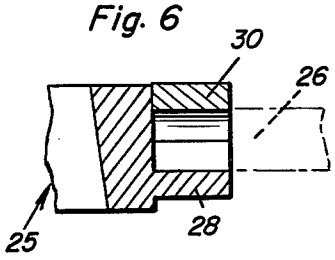


Fig. 4

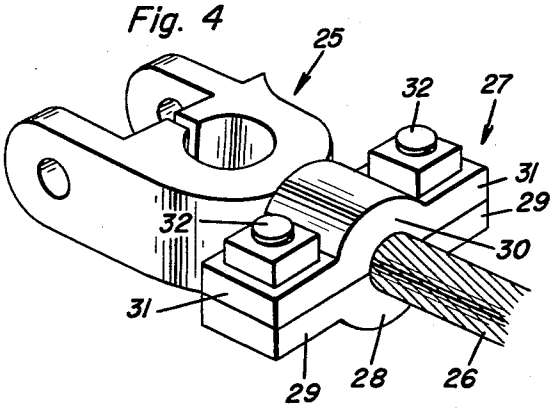
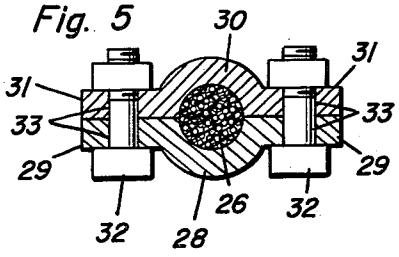


Fig. 5



Theodore A. Overby

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

United States Patent Office 3,118,719 Patented Jan. 21, 1964

3,118,719

BATTERY CABLE CONNECTOR

Theodore A. Overby, 411 11th Ave. SE., Aberdeen, S. Dak.

Filed July 19, 1962, Ser. No. 211,012
4 Claims. (Cl. 339—226)

This invention relates to new and useful improvements in battery cable terminals of the split clamp type and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character comprising novel means for positively opening or spreading as well as closing the clamp thus facilitating removal even though the connection is considerably eroded or otherwise "frozen."

Another important object of the present invention is to provide an improved battery cable terminal of the aforementioned character which may be expeditiously applied to or removed from the battery post with a single tool in the form of a conventional wrench.

Still another important object is to provide a battery cable terminal of the character set forth which will readily fit posts of various sizes and which may be applied thereto without making structural alterations therein.

Other objects of the invention are to provide an improved battery cable terminal which is comparatively simple in construction, strong, durable, compact, of light weight and which may be manufactured at low cost.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of an improved battery cable terminal constructed in accordance with the present invention;

FIGURE 2 is a view principally in horizontal section through the terminal;

FIGURE 3 is a fragmentary view in vertical section, taken substantially on the line 3—3 of FIGURE 2;

FIGURE 4 is a perspective view, showing a modification;

FIGURE 5 is a view in transverse section through the modification of FIGURE 4; and

FIGURE 6 is a fragmentary view in longitudinal section through the modification.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated in FIGURES 1, 2 and 3 of said drawing comprises a generally U-shaped clamp of suitable metal which is designated generally by reference numeral 7. The clamp 7 is adapted to straddle the battery post in the usual manner and toward this end said clamp includes a pair of coacting jaws 8 and 9. Formed integrally with the bight portion of the clamp 7 is a socket or the like 10 in which an end portion of the battery cable is soldered or otherwise suitably secured, said cable being indicated at 11.

Projecting from the free end of the jaw 8 is a lug or ear 12 having a smooth or unthreaded opening 13 therein. Formed integrally with the free end of the other jaw 9 is a substantially similar lug or ear 14 having a smooth or unthreaded opening 15 therein aligned with the opening 13.

The openings 13 and 15 rotatably received the threaded shank 16 of an adjusting bolt 17, said bolt including a head 18 which abuts the outer side of the ear or lug 12. Threaded for adjustment on the shank 16 of the bolt 17 is a thrust collar in the form of a hexagonal nut 19 which is rotatably engageable with the inner side or face of the lug or ear 12. Thus, the bolt 17 is rotatably secured in the lug or ear 12. A hexagonal lock nut 20 on the bolt 17 secures the thrust collar 19 in adjusted position.

On opposite sides of the lug or ear 14 the free end of the jaw 9 is formed to provide flat faces or abutments 21 and 22. Threadedly mounted on the bolt 17 with the ear 14 therebetween are square adjusting nuts 23 and 24. The nuts 23 and 24 engage the faces or abutments 21 and 22, respectively, for retention against rotation thereby.

It is thought that the use of the terminal will be readily apparent from a consideration of the foregoing. Briefly, to assemble the device, the bolt 17 is inserted through the opening 13 and the thrust collar 19 and the lock nut 20 are threaded on said bolt. The bolt 17 is then threaded through the nut 23, inserted through the opening 15 and threaded through the nut 24. The bolt 17 is then tightened sufficiently to remove any play between the elements 23, 14 and 24, after which a final adjustment of the collar 19 is made and secured by the lock nut 20. The clamp 7 is then slipped on the battery post and tightened thereon by turning the bolt 17 clockwise, thus screwing said bolt through the nut 23 and 24. Thus, the jaws 8 and 9 are drawn together. Of course, to open or expand the clamp 7 preparatory to removing same from the battery post, the bolt 17 is turned in the opposite direction for backing said bolt out of the nuts 23 and 24. The collar 19 then coacts with the nuts 23 and 24 for opening or spreading the jaws 8 and 9. As hereinbefore stated, the nuts 23 and 24 are retained against rotation with the bolt 17 by the abutments 21 and 22 while the elements 19 and 20 turn in unison with said bolt. It is to be noted that the bolt 17 and nuts 19, 20, 23 and 24 are conventional and readily available on the market. Thus, these elements may be conveniently and inexpensively renewed when desired. This also constitutes an important and desirable feature of the invention.

The embodiment of the invention illustrated in FIGURES 4, 5 and 6 of the drawing comprises a substantially U-shaped terminal 25 to the bight portion of which the battery cable 26 is detachably connected through the medium of a clamp 27.

The clamp 27 includes a substantially semi-circular jaw 28 which is integral with the terminal 25 and which includes apertured ears or lugs 29 on its ends. The clamp 27 further includes a removable, substantially semi-circular upper jaw 30 having integral end ears or lugs 31 which are also apertured. The stationary and removable jaws 28 and 30, respectively, clamp an end portion of the cable 26 therebetween. As shown to advantage in FIGURE 5 of the drawing, nutted bolts 32 clamp the jaws 28 and 30 on the cable 26, said bolts passing through aligned openings or apertures 33 provided therefor in the ears 29 and 31. In other respects this form of the invention is substantially similar to the embodiment of FIGURE 1 of the drawing.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A battery cable connector comprising a generally U-shaped metallic clamp including a pair of jaws for receiving and gripping a battery post therebetween, apertured ears on the ends of the clamp, a removable bolt including a head on one end, rotatably mounted in said ears, means cooperable with the head for rotatably securing the bolt against longitudinal movement in one of the ears, threaded means operatively connecting the bolt to the other ear and cooperable with the first-named means for opening or closing the clamp in response to rotation of the bolt in opposite directions, and means for

connecting a battery cable to the clamp, said head rotatably abutting one side of said one ear, said first-named means including a hexagonal thrust collar threaded for adjustment on the bolt for rotation in unison therewith and rotatably engaged with the other side of said one ear, said first-named means further including a lock nut threaded on the bolt and engaged with the collar for securing same in adjusted position, the second-named means comprising polygonal adjusting nuts threaded on the bolt on opposite sides of the other ear and engaged therewith, and means for retaining said adjusting nuts against rotation in unison with the bolt.

2. A battery cable connector comprising a generally U-shaped metallic clamp including a pair of jaws for receiving and gripping a battery post therebetween, apertured ears on the ends of the clamp, a removable bolt including a head on one end, rotatably mounted in said ears, means cooperable with the head for rotatably securing the bolt against longitudinal movement in one of the ears, threaded means operatively connecting the bolt to the other ear and cooperable with the first-named means for opening or closing the clamp in response to rotation of the bolt in opposite directions, and means for connecting a battery cable to the clamp, said head rotatably abutting one side of said one ear, said first-named means including a hexagonal thrust collar threaded for adjustment on the bolt for rotation in unison therewith and rotatably engaged with the other side of said one ear, said first-named means further including a lock nut threaded on the bolt and engaged with the collar for securing same in adjusted position, the second-named means comprising polygonal adjusting nuts threaded on the bolt on opposite sides of the other ear and engaged therewith, and means for retaining said adjusting nuts against rotation in unison with the bolt, said retaining means including flat faces on one end of the clamp on opposite sides of said other ear and abutting the peripheries of said adjusting nuts.

3. A battery cable connector in accordance with claim 2, wherein the third-named means comprises a socket on the bight portion of the clamp for receiving an end portion of the cable.

4. A battery cable connector in accordance with claim 2, wherein the third-named means includes a second clamp comprising a fixed jaw integral with the bight portion of the first-named clamp, said second clamp further comprising an adjustable jaw removably mounted on said fixed jaw and cooperable therewith for receiving and gripping an end portion of the cable therebetween.

References Cited in the file of this patent

UNITED STATES PATENTS

2,039,669	Tenney	May 5, 1936
2,057,542	Slavins	Oct. 13, 1936
2,161,692	Andre	June 6, 1939
2,247,452	Seils	July 1, 1941