May 29, 1934. R. C. OLSON 1,960,593

SELF OPENING SCREW AND WASHER FOR BATTERY TERMINALS

Filed March 5, 1928

Fig. 1.

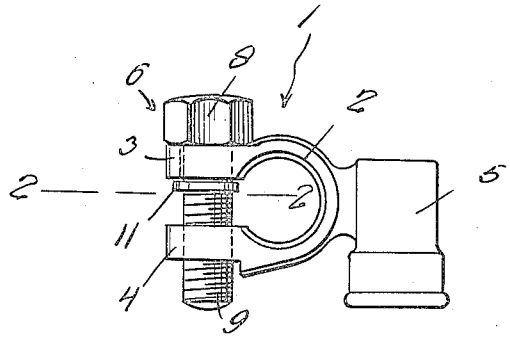



Fig. 2.

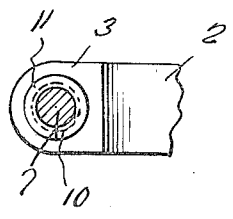



Fig. 3.

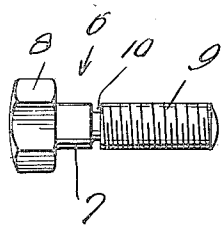



Fig. 4.




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1,960,593

## SELF-OPENING SCREW AND WASHER FOR BATTERY TERMINALS

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Application March 5, 1928, Serial No. 259,287

1 Claim. (Cl. 173—259)

The present invention relates to improvements in battery terminals and has for its principal object to provide a simple and efficient means for securing a split ring on the post of a storage battery against accidental displacement therefrom, the securing means being of such construction as to facilitate the ready and easy removal of the terminal whenever necessary.

A further object is to provide a battery terminal of the above mentioned character which is simple in construction, inexpensive, strong and durable and further well adapted to the purpose for which it is designed.

Other objects and advantages of the invention will become apparent during the course of the following description when taken in connection with the accompanying drawing.

In the accompanying drawing wherein like reference characters indicate corresponding parts throughout the views:

Figure 1 is a top plan view of a battery terminal embodying my invention.

Figure 2 is a sectional view taken substantially upon the line 2—2 of Figure 1,

Figure 3 is a side elevation of the bolt forming a salient part of the present invention, and

Figure 4 is a detail view of the washer before being placed on the bolt.

In the drawing wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates generally my improved battery terminal, the same comprising a split ring 2 that is formed at its free ends with the laterally disposed lugs 3 and 4 respectively. These lugs are provided with registering apertures, and the aperture of the lug 4 is threaded, whereas the aperture of the lug 3 is unthreaded and the purpose of this arrangement will be presently described.

A socket member 5 is formed integrally with the ring 2 at a point diametrically opposite the split end thereof for receiving one end of a conductor cable in the manner well known in the art.

Forming a salient part of the present invention is the bolt 6, the same including a shank 7 on one end of which is formed a head 8. The major portion of the shank is threaded as illustrated at 9 and an annular groove or channel 10 is formed in the shank 7 at the inner extremity of the threaded portion 9 so that the portion of the shank adjacent the head 8 is unthreaded and this is clearly illustrated in Figure 3.

The shank of the bolt is adapted to extend through the registering apertures formed in the laterally disposed lugs 3 and 4, and the threaded portion 9 of the shank is threaded through the threaded opening in the lug 4 while the head 8 engages with the outer face of the other lug 3 and manifestly by turning the bolt in one direction, the split ring is contracted for locking engagement with the battery terminal post of a storage battery, not shown.

A substantially U-shaped washer 11 cooperates with the annular channel or groove 10 in the manner as clearly shown in Figures 1 and 2 for locking the bolt against accidental displacement from the apertured lugs, and this washer will be disposed adjacent the inner face of the lug 3. The washer is substantial U-shaped formation when stamped out, so as to facilitate the positioning of the same around the groove 10, after which the free ends of the U-shaped washer are brought together to form a ring as shown in Figure 2.

The washer 11 will prevent longitudinal movement of the bolt 6. The head 8 may be rotated in one direction whereby to move the threaded aperture lug 4 away from the lug 3 so as to facilitate the removal of the terminal from the battery post. By rotating the bolt in the opposite direction the split ring will be contracted around the battery post.

In the further operation of the device, it will be seen that the bolt after threadably engaging the lug 4 may have the washer 11 inserted in the groove 10 of the bolt in an expeditious manner due to the shape of the washer, and the washer seated in the groove in this manner serves the two-fold purpose, namely, the washer so seated in the groove will retain the bolt in place and also upon rotating of the bolt in one direction, the said washer will be forced against the adjacent lug 3 to provide somewhat of an automatic operation upon so rotating the bolt in said one direction to automatically open the split ring 2, thus facilitating the removal of the terminal clamp from the battery post. When the bolt is so turned in said one direction for expanding the split ring 2, it will also be apparent that the washer aids in breaking the corrosion to permit of the clamp severing itself from the battery post which will enable one to disconnect a battery in a minimum amount of time and with the least possible effort.

The simplicity of my improved battery terminal enables the same to be manufactured at a very low cost, and furthermore the same will be strong and durable.

While I have shown the preferred embodiment of my invention, it is to be understood that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention and the scope of the appended claim.

Having thus described the invention, what I claim as new is:—

A battery terminal clamp comprising a one-piece intergrally formed split ring having proximate separable ends provided with an integral cable receiving socket opposite said ends, the ends of said ring including a pair of opposed apertured lugs one of which is threaded and the other of which is non-threaded, a headed bolt having a non-threaded shank rotatable in the non-threaded lug and having a threaded portion engageable in the threaded lug, said bolt having a groove between said threaded and non-threaded portions of said shank adjacent the inner face of the non-threaded lug, means comprising a split ring washer formed as a closed annulus positioned in said groove and non-removably attached to said bolt and having a greater radial height than the surface of the smooth shank of said bolt in every radial direction and having a greater external diameter in every diametrical direction than the internal diameter of the aperture in the non-threaded lug measured at least adjacent the inner face thereof and adapted to engage said inner face of the non-threaded lug when the bolt is rotated in the direction whereby said threaded lug is moved away from the said non-threaded lug to spread the clamp, the head of said bolt engaging the opposite and outer face of said non-threaded lug when the bolt is rotated in the opposite direction whereby to draw the lugs together to contract the clamp.

ROBERT C. OLSON.