Jan. 8, 1929. 1,698,629

W. T. HALEY ET AL

TERMINAL CONNECTER

Filed May 15, 1926

Fig. 1.

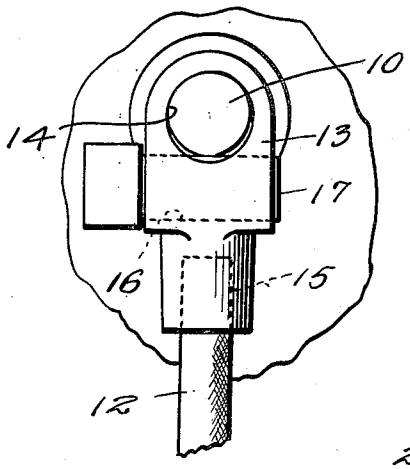


Fig. 2.

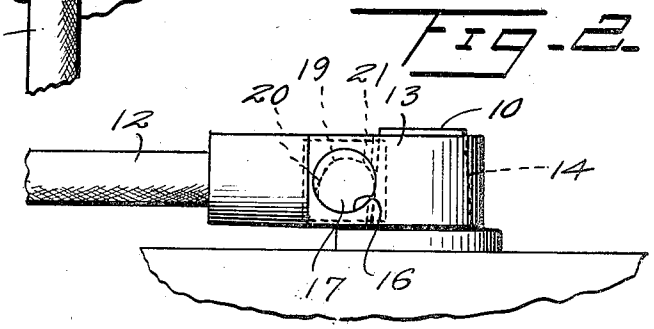


Fig. 3.

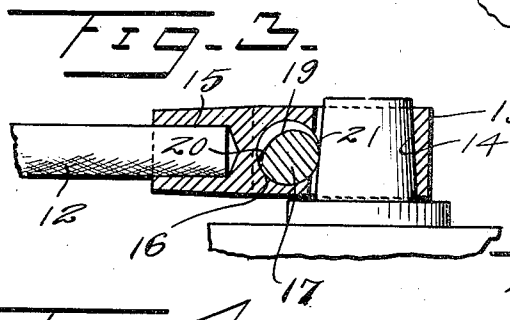


Fig. 4.

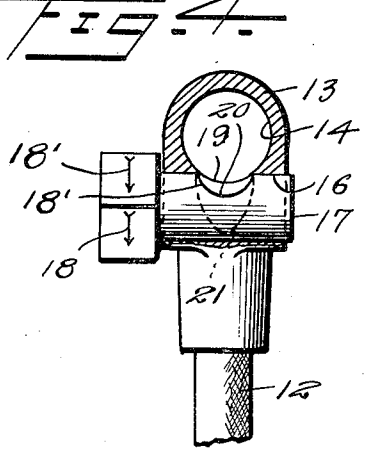


Fig. 5.

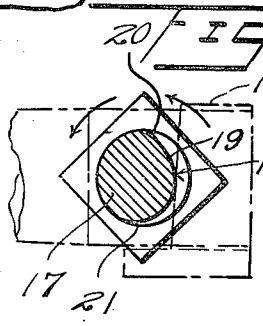
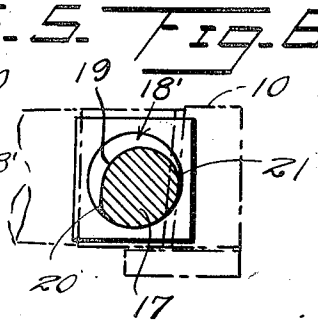


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM T. HALEY AND ROGER R. WILLIAMS, OF CHRISTOPHER, ILLINOIS.

TERMINAL CONNECTER.

Application filed May 15, 1926. Serial No. 109,346.

This invention relates to terminal connecters and more particularly to a terminal connecter for use in connecting battery leads to the terminals of storage batteries.

An important object of the invention is to provide a device of this character which will very firmly clamp the storage battery terminal so as to provide a good electrical connection between the lead and battery and which is so constructed that tightening of the securing element tends to force the battery terminal down upon the tapered terminal post of the battery so as to increase the contact pressure between the lead and terminal.

A further object of the invention is to provide a device of this character which is so constructed that in the natural manner of applying the same, the tendency to firm engagement is increased both by the application of weight and pressure in the operation of the securing element.

These and other objects we attain by the construction shown in the accompanying drawing, wherein for the purpose of illustration is shown a preferred embodiment of our invention and wherein:—

Figure 1 is a plan view showing a terminal connecter constructed in accordance with our invention applied to a battery terminal;

Figure 2 is a side elevation thereof;

Figure 3 is a longitudinal sectional view therethrough with the locking member in the locking position;

Figure 4 is a plan view partially in section showing the device in position to receive the terminal;

Figures 5 and 6 are similar sectional views taken through the locking member at the groove showing the position of the locking member when receiving the terminal and when locking the same respectively.

Referring now more particularly to the drawings, the numeral 10 generally designates a tapered battery terminal and 11 a terminal connecter for connecting to the battery terminal a lead wire 12. The terminal connecter 11 is in the form of a body 13 having a bore 14 tapered to conform to the tapering of the terminal post. One end of this body is formed with a socket 15 in which the lead 12 may be inserted and sealed. The body is formed with a second bore 16 having its axis at approximately right angles to the bore 15, said bore 16 partially intersecting the bore 15. Rotatable within the bore 16 is a securing element 17 having at one end an operating head by means of which it may be rotated and provided with indicia 18 providing the proper direction of rotation. This securing element is formed with a groove 18′ in alignment with the axis of the bore 14, which groove extends partially around the securing element and at a point 19 and is of such depth that when this portion of the groove is aligned with the bore 14, the bore 14 is unobstructed. From this point, the bore rapidly decreases in depth toward one end 20 of the groove and gradually decreases in depth toward the opposite end 21 thereof. The base of the groove is curved in the general direction of the axis of the securing element with a curvature similar to the curvature of the wall of the bore 14 at the point of its intersection by the bore 16.

In the use of the connecter, the same is placed upon the terminal with the securing element so positioned that the point 19 of the groove aligns with the bore 14. When the terminal is applied, any tendency to rotate the same in the wrong direction will be frustrated by the engagement of the bottom wall of the bore between the point 19 and the end 21 of the groove against the side of the terminal. It will be noted that between the point 19 and the end 21 of the groove, the curvature at the bottom of the groove is on a true radius eccentric and internally tangential to the securing element, while at that portion of the groove lying between the point 19 and the end 20, the bottom of the groove is tangential to the eccentric portion. Rotation of the securing element in the proper direction tends to wedge the connecter downwardly upon the terminal, due to the fact that the rotation of the securing element sets up frictional engagement between the terminal post and the securing element, and this friction results in a tendency of the securing element to roll upon the face of the terminal in the direction in which it is rotated. Since the securing element, as pointed out, can only be rotated in one direction and when rotated in that direction will tend to move downwardly upon the post, a very secure wedging action will be maintained at all times. This tendency is further assisted by the fact that in order to properly rotate the securing element, it is practically impossible to engage a wrench

therewith in any other manner than the manner in which the application of power to the wrench also exerts downward force upon the connecter, tending to force the same downwardly upon the terminal.

Since the construction hereinbefore set forth is capable of a certain range of change and modification without materially departing from the spirit of the invention, we do not limit ourselves to such specific structure except as hereinafter claimed.

We claim:—

In a terminal connecter for use with the binding posts of storage batteries and the like, a body having a bore to receive and fit a terminal and having a second bore at approximately right angles to the first named bore and partially intersecting the same, a securing element rotatable in and fitting within the last named bore, said securing element having a groove extending partially around its circumference, said groove at a point intermediate its ends being of such depth that when aligned with the first named bore said bore is uninterrupted to permit the passage of the terminal, the bottom of the groove between said point and one end of the groove being curved and eccentric to the axis of the securing element and internally tangential to the periphery of the body of the securing element, the bottom of said groove between said point and the opposite end of the groove being tangential to said eccentric portion.

In testimony whereof we hereunto affix our signatures.

WILLIAM T. HALEY.
ROGER R. WILLIAMS.