Oct. 5, 1926. 1,601,752

J. G. WORTHAM

DEVICE FOR APPLYING AND REMOVING BATTERY CONNECTERS

Filed Jan. 15, 1926

Fig. 1.

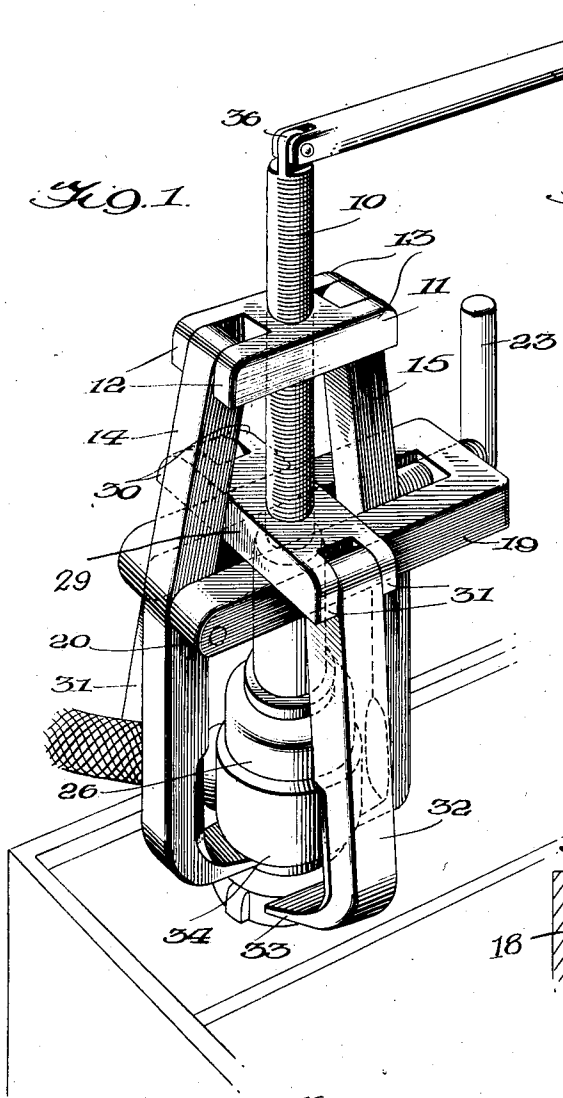


Fig. 2.

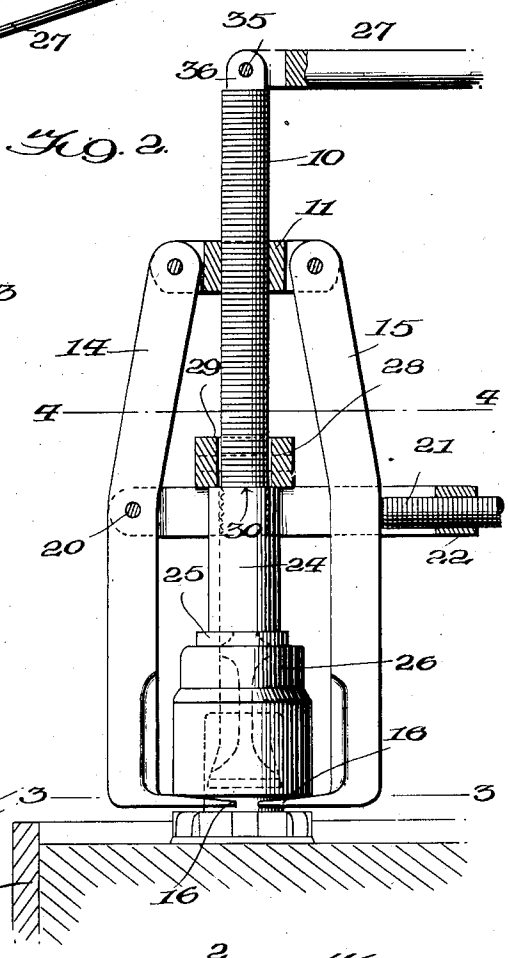


Fig. 3.

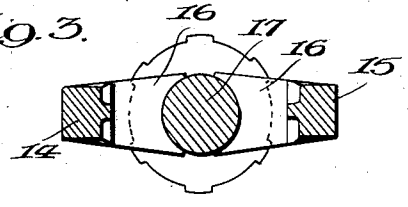
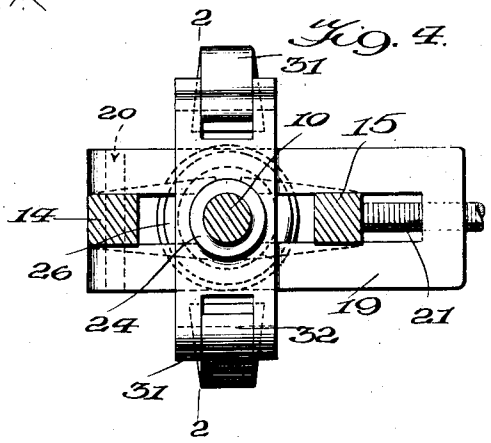


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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DEVICE FOR APPLYING AND REMOVING BATTERY CONNECTERS.

Application filed January 15, 1926. Serial No. 81,543.

This invention relates to a device for removing and replacing battery connecters.

An object of the present invention is the provision of a device which is adapted to be clamped on a terminal of a battery whereby the same may be rigidly supported from the terminal and having a rotatable element for forcing the connecter onto the terminal, the rotatable member being adapted for reverse rotation to cause a pair of jaws to force the connecter from the terminal.

A further object of the invention is the provision of a reamer adapted to be mounted in a device for removing or applying battery connecters to the terminals of a battery and in which the last mentioned device acts as a support for the reamer during the treatment of the terminal.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawings forming a part of the specification; nevertheless it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a view in perspective of a device constructed in accordance with the principles of my invention.

Figure 2 is a transverse vertical section taken along the line 2—2 of Figure 4.

Figure 3 is a horizontal section taken along the line 3—3 of Figure 2.

Figure 4 is a transverse vertical section taken along the line 4—4 of Figure 2.

Referring more particularly to the drawings, 10 designates a screw threaded into a nut 11 which is provided with pairs of spaced ears 12 and 13. Swingably mounted between the pair of ears 12 is a clamping bar 14 while a clamping bar 15 is swingably mounted from the pair of ears 13. The lower ends of the bars 14 and 15 are inturned as shown at 16 and are provided with arcuately shaped grooves adapted to engage within slots formed in the side walls of a terminal 17 of a storage battery 18. In order to cause the bars 14 and 15 to clamp the terminal 17 I have provided a U-shaped member 19 which has its free end pivoted as shown at 20 to the clamping bar 14, the bar 15 being received between the legs of said U-shaped member.

A screw 21 threaded into a perforation in the end 22 of the U-shaped member is adapted to engage the outer edge of the bar 15 when the crank 23 is operated in a predetermined direction. As the screw 21 is forced into tight engagement with the bar 15 the bar 14 is pulled towards the bar 15 until the inturned ends 16 are rigidly clamped to the terminal 17.

The lower end of the screw 10 is enlarged as shown at 24 and a disc 25 is mounted for rotation on the lower end of the enlarged portion 24 so that when it engages the upper end of the connecter 26 it will frictionally contact with the connecter while the screw 10 is revolved.

The connecter 26 has a central opening adapted to be received by the terminal 17 and the walls of the opening are tapered to conform to the tapering of the terminal 17 so that when the screw is rotated by a crank 27 in the proper direction the connecter head 26 will be forced into frictional engagement with the terminal 17.

A transverse bar 28 disposed between the bars 14 and 15 is provided with a central perforation 29 of sufficient diameter that the bar 28 may slide on the screw 10 but the upper edge of the enlargement 24 is of greater diameter than the opening 29 so that a shoulder 30 between the enlargement and the screw 10 will engage the bar and elevate the same when the crank 27 is operated reversely to the operation which causes the screw to be lowered.

The ends of the bar 28 are provided with ears 31 in which are pivotally mounted a pair of clamping legs 32. These clamping legs have inturned feet 33 which are adapted to engage beneath the shoulder 34 of the connecter head 26 so that when the screw 10 is properly rotated the shoulder 30 will engage the bar 28 and force said bar upwardly, removing the head from the terminal 17.

The operation of my device is as follows:

When it is desired to place the connecter head 26 upon the terminal 17 the bars 14 and 15 are placed upon opposite sides of the terminal 17 with the feet 16 adjacent the notches in the terminal 17. The screw 21 is then operated through the crank 23 when the bars 14 and 15 will be forced towards

each other and locked in place as the feet 16 are rigidly clamped to the terminal. The crank 27 is rotated in the proper direction whence the screw 10 will be lowered until the disc 25 engages the top of the connecter head 26. Continued rotation of the screw will force the head 26 in rigid engagement and in position on the terminal 17. When it is desired to remove the connecter head the bars 14 and 15 are clamped in the manner as has been described, to the terminal 17 and a reverse rotation of the screw is given whence the feet 33 being positioned below the shoulder 34 of the connecter head 26 will be elevated and engage the bottom of the head and force the same from the terminal 17.

It will be noted that the crank 27 is pivotally mounted at 35 to a lug 36 at the upper end of the screw 10 and the handle 27 being of smaller diameter than the screw 10 may be withdrawn through the threaded perforation in the nut 11 when the screw is properly rotated.

What I claim is:

1. A device for applying and removing battery connecters comprising a nut, a screw threaded into the nut, clamping bars pivotally connected to the ends of the nut and swingable upon opposite sides of the screw, said clamping bars being provided with inturned feet adapted to engage a terminal of the battery, means for forcing the clamping bars towards each other whereby the feet will be rigidly engaged with the terminal, an enlargement at the lower end of the screw adapted to engage the upper end of a battery connecter, a transverse bar slidably mounted on the screw and provided with pivotally mounted legs, said legs having inturned feet adapted to engage beneath the battery connecter, said transverse bar being engaged by the enlargement on the screw so that when the screw is rotated in the proper direction the transverse bar will be elevated and force the connecter from its respective terminal.

2. A device for applying and removing battery connecters comprising a nut, a screw threaded into the nut, clamping bars pivotally connected to the ends of the nut and swingable upon opposite sides of the screw, said clamping bars being provided with inturned feet adapted to engage a terminal of the battery, a U-shaped member pivotally mounted on one of the clamping bars, a screw mounted in the U-shaped member adapted to engage the other leg so that when the screw is rotated the U-shaped member will draw the clamping bars together, and an enlargement at the lower end of the screw adapted to engage the upper end of a battery connecter, means supported by the U-shaped member which is pivotally mounted on one of the clamping bars and having swingably mounted legs having clamping means at the free ends thereof adapted to engage beneath the battery connecter.

3. A device for applying and removing battery connecters comprising a nut, a screw threaded into the nut, clamping bars pivotally connected to the ends of the nut and swingable upon opposite sides of the screw said clamping bars being provided with inturned feet adapted to engage a terminal of the battery, a U-shaped member pivotally mounted on one of the clamping bars, a screw mounted in the U-shaped member adapted to engage the other leg so that when the screw is rotated the U-shaped member will draw the clamping bars together, an enlargement at the lower end of the screw adapted to engage the upper end of a battery connecter, a transverse bar having a perforation received by the screw and normally resting on the U-shaped member, clamping legs pivotally connected to the ends of the transverse bar and having inturned feet, the enlargement on the screw being movable through the U-shaped member and engaging the transverse bar for elevating the same when the screw is rotated in a predetermined direction.

JAMES G. WORTHAM.