Sept. 27, 1932. I. E. COFFEY 1,879,099

BATTERY TERMINAL PULLER

Filed April 29, 1931

FIG. 1

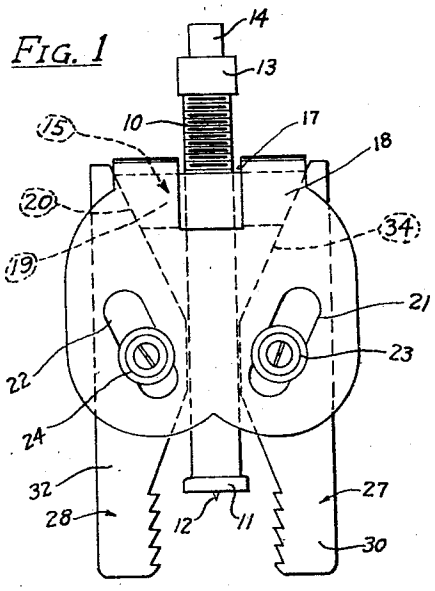


FIG. 2

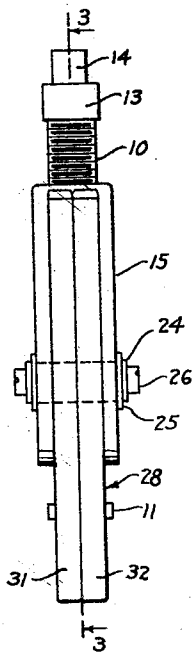


FIG. 3

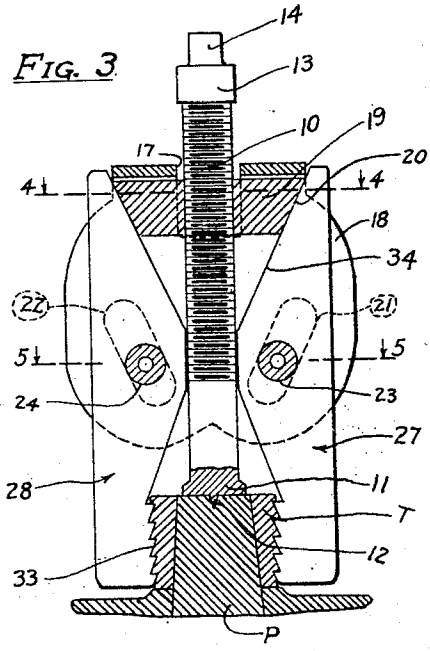


FIG. 4

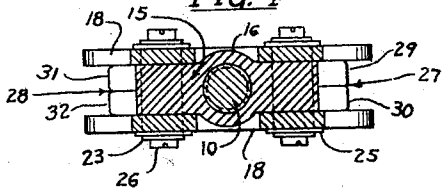
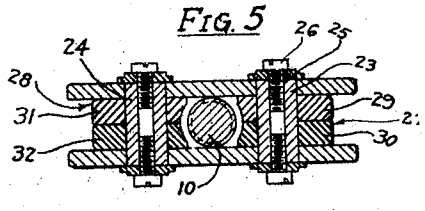


FIG. 5



INVENTOR
I. E. Coffey
BY Hazard and Miller
ATTORNEYS

Patented Sept. 27, 1932 1,879,099

UNITED STATES PATENT OFFICE

IRVEN E. COFFEY, OF PLAYA DEL REY, CALIFORNIA

BATTERY TERMINAL PULLER

Application filed April 29, 1931. Serial No. 533,689.

This invention relates to improvements in battery terminal pullers and the like.

An object of the invention is to provide a device which can be easily applied to a battery post and which will grip a battery terminal, which may have become "frozen" thereon by corrosion, and easily and forcibly withdraw it therefrom.

Another object of the invention is to provide a battery terminal puller which is of relatively simple and durable construction and which is so designed that it may be easily applied to a battery terminal on a battery post in the limited amount of space usually surrounding the battery terminal.

Another object of the invention is to provide a battery terminal puller having opposed jaws adapted to grip on opposite sides of the battery terminal, which jaws are longitudinally divided into sections, each section being toothed and being capable of engaging and gripping the battery terminal independently of other sections. By thus having the jaws divided into sections the battery terminal puller may more effectively grip the terminal without danger of slipping.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, and specifically pointed out in the appended claims, reference is had to the accompanying drawing for an illustrative embodiment of the invention, wherein:

Fig. 1 is a view in side elevation of the improved battery terminal puller.

Fig. 2 is a view in end elevation of the same.

Fig. 3 is a vertical section through the battery terminal puller illustrating the puller as having been applied to a battery terminal on a battery post.

Fig. 4 is a horizontal section taken upon the line 4—4 upon Figure 3.

Fig. 5 is a horizontal section taken upon the line 5—5 upon Figure 3.

Referring to the accompanying drawing, wherein similar reference characters designate similar parts throughout, the improved battery terminal puller comprises a jack screw 10 having a base 11 on the under side of which at its center there is a small downwardly extending prong or point 12. This prong or point is adapted to be caused to penetrate the top of a battery post P to establish a center of rotation for the jack screw and prevents its slipping off of the battery post during rotation. The upper end of the jack screw has a head 13, a portion of which is preferably squared as indicated at 14 for the application of a suitable wrench for rotating the screw. A nut 15 is threadedly mounted on the jack screw and has a central enlarged portion indicated at 16, the sides of which fit in a slot 17 in an inverted U shaped yoke 18. The nut has end portions or wings 19 on which the yoke 18 rests and these end portions or wings present downwardly converging end faces 20 as clearly shown in Figure 3. The sides of the yoke on one side of the jack screw are provided with opposed slots 21 which extend downwardly and centrally, and the opposite sides of the yoke have a similar pair of slots 22. These slots constitute downwardly converging guides in the yoke which are parallel to the downwardly converging end faces 20 on the nut. Tubular pins 23 and 24 are slidable in the pairs of slots 21 and 22 and these tubular pins are maintained in the slots by suitable washers 25 which are held in place by means of screw 26.

Jaws are provided, one jaw being generally designated at 27 and the other at 28. These jaws are longitudinally divided into sections, that is jaw 27 is made up of sections 29 and 30 while jaw 28 is made up of sections 31 and 32. The lower ends of the sections on their inner faces have upwardly directed teeth 33 while the upper ends of the sections present inwardly inclined faces 34 adapted to engage the inclined end faces of nut 15. These inclined faces 34 are likewise parallel to the slots 21 and 22. The jaw sections are capable of pivoting on their respective pins 23 and 24 independently of each other so that each jaw section may engage the exterior of the battery terminal T and grip it independently of the other jaw sections.

The operation of the improved battery terminal puller is as follows. If a battery ter-

minal T has become "frozen" onto the battery post P so that it cannot be easily removed therefrom, the improved battery terminal puller is employed and the jaw sections are first adjusted to permit the application of the puller over the terminal. That is the jaw sections are urged upwardly with respect to the yoke so that the pins 23 and 24 are in their uppermost positions in the slots 21 and 22. This positions the jaws the greatest distance apart so that they can be received over the battery terminal T. The prong or point 12 in the jack screw 10 is then positioned on the battery post and the jaws are allowed to slide downwardly and inwardly with respect to the yoke until the teeth 33 engage the outside of the battery terminal T. The engagement between the inclined surfaces 34 and the inclined surfaces 20 causes the jaw sections to maintain an upright or vertical position during all portions of the movements of the jaws in adjusting them. I regard this as being an important feature of the invention. If the terminal T should not happen to be perfectly round or the jack screw 10 should be applied to the battery post P at a point other than its exact center, one jaw may engage and bite on the terminal T at a point lower than the other jaw. By virtue of the fact that the jaws are maintained vertical and in a parallel position, this is immaterial. The jack screw 10 will not tend to assume an inclined position but will likewise remain vertical and in a position in which it can be easily rotated. Both jaws will lift the terminal independently of whether one jaw grips the terminal lower than the other or not and there will be no tendency for the device to lean over. In causing the jaws to grip the terminal I find it sometimes advantageous to pound the upper ends of the jaw sections downwardly slightly. Only a light tap is required to cause the teeth to bite and the gripping action of the jaws is increased on lifting the nut 15 by the jack screw. The jack screw 10 is then rotated by a wrench, causing the nut 15 to be elevated. The nut in turn lifts the yoke and as the jaws cannot slide downwardly any further in the slots 21 and 22, the battery terminal will be forcibly lifted from the battery post. By virtue of the fact that the jaws are made up of sections, each of which can engage the battery terminal independently of the others, there is little danger of slipping. After the battery terminal has been removed from the battery post it can be easily disengaged from the battery puller by merely pushing the jaws upwardly with respect to the yoke. This brings about a separation of the jaws and a consequent disengagement of the jaw sections from the battery terminal.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. A battery terminal puller comprising a rotatable jack screw adapted to be positioned on a battery post, a nut threaded onto the screw; a yoke carried by the nut having downwardly convergent guides, and jaws having teeth engageable upon a battery terminal movable upon said downwardly convergent guides, said jaws having portions parallel to their respective guides engageable upon the nut to maintain the jaws in upright positions during their adjustments on the guides.

2. A battery terminal puller comprising a rotatable jack screw, a nut threaded onto the jack screw, a yoke carried by the nut, there being downwardly convergent pairs of slots formed in the yoke on opposite sides of the jack screw, pins slidable in the slots, and jaws carried by the pins having teeth engageable upon a battery terminal, said jaws presenting surfaces above the pins parallel to the slots engageable upon the nut to limit the outward swinging movements of the lower ends of the jaws.

3. A battery terminal puller comprising a rotatable jack screw adapted to be positioned on a battery post, a nut threaded onto the screw having outwardly extending end portions, an inverted U shaped yoke supported on said end portions, there being downwardly convergent pairs of slots formed in the yoke, pins slidable in the slots, and jaws carried by the pins, said jaws having toothed lower ends and presenting on their upper ends inclined surfaces which are parallel to their respective slots, said surfaces being engageable upon the nut.

4. A battery terminal puller comprising a rotatable jack screw adapted to be positioned on a battery post, a nut threaded onto the screw having outwardly extending end portions, an inverted U shaped yoke supported on said end portions, there being downwardly convergent pairs of slots formed in the yoke, pins slidable in the slots, and jaws carried by the pins, said jaws having toothed lower ends and presenting on their upper ends inclined surfaces which are parallel to their respective slots, said jaws being longitudinally divided into sections each of which is engageable upon a battery terminal independently of the others.

5. A battery terminal puller having opposed jaws adapted to engage the opposite sides of a battery terminal, said jaws being longitudinally divided into sections having contiguous sides, the sections being engageable with the terminal independently of each other.

6. A battery terminal puller comprising a jack screw having one end provided with a central pin for centering the jack screw on a battery terminal, a nut threaded on to the jack screw, jaws, means connecting the jaws to the nut so as to be capable of being

lifted thereby, said means permitting adjustments of the jaws on downwardly and inwardly inclined paths, and means for causing the jaws to be guided during adjustment so as to maintain vertical parallel positions during adjustment whereby the jaws may bite on a battery terminal at different elevations without having a tendency to tilt the jack screw during pulling.

7. A battery terminal puller comprising a jack screw adapted to have its lower end positioned upon a battery post, a nut on the jack screw, jaws having toothed lower ends extending below the lower end of the jack screw, and means for supporting the jaws upon the nut, said supporting means providing for adjustment of the jaws upon downwardly and inwardly inclined paths without tilting the jaws during adjustment.

In testimony whereof I have signed my name to this specification.

IRVEN E. COFFEY.