

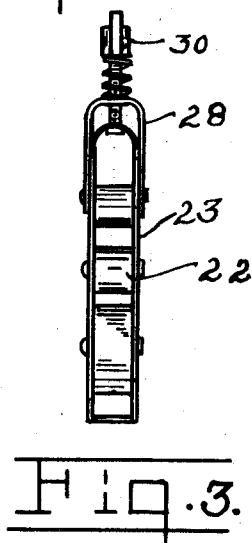
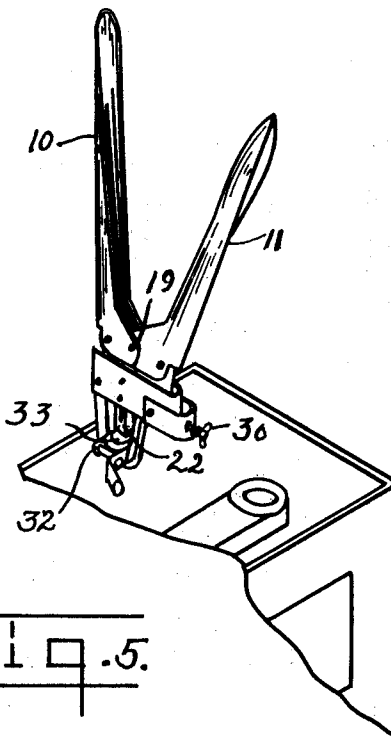
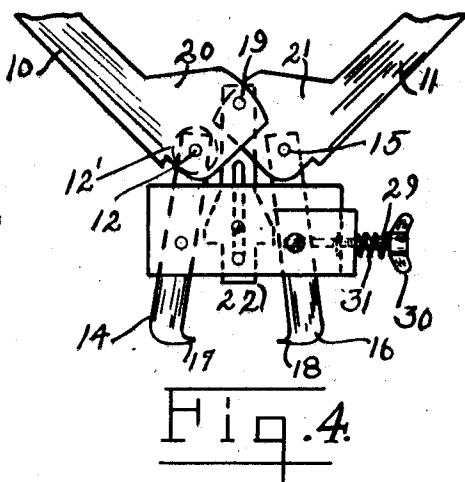
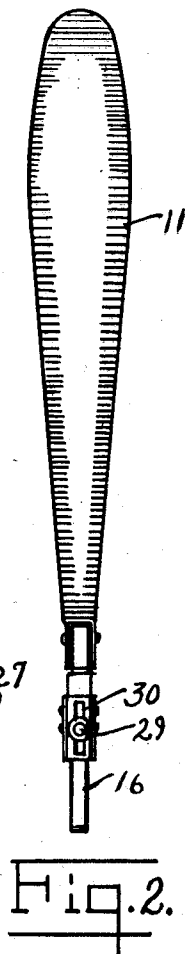
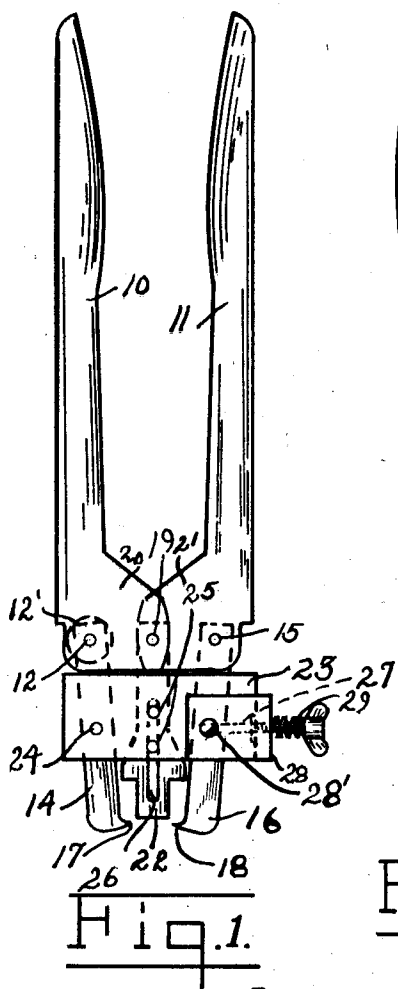
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J. RICHARD

1,851,925

BATTERY TERMINAL PULLER

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## UNITED STATES PATENT OFFICE

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## BATTERY TERMINAL PULLER

Application filed October 31, 1931. Serial No. 572,374.

This invention relates to a battery terminal puller and has for an object to provide an improved puller especially useful in removing a battery terminal clamp from the battery terminal post of a storage battery.

A further object of this invention is to provide a tool of this nature which is exceedingly compact and convenient and in which one of the jaws has means for adjusting the side pressure thereon so that it may be made to fit the particular battery terminal on which it is being used.

A further object of this invention is to provide a novel battery cable clamp remover which is operated by a pair of handles in a manner similar to the operation of tongs or pliers and in which each handle provides an equal amount of pushing pressure on the battery post and of pulling pressure on the cable clamp.

With the foregoing and other objects in view, as will hereinafter become apparent, this invention comprises the constructions, combinations and arrangements of parts, hereinafter set forth, claimed and shown on the accompanying drawings. In these drawings,

Figure 1 is a plan view of this improved battery cable remover,

Figure 2 is a side view of Figure 1 looking from the right side thereof,

Figure 3 is a bottom plan view of Figure 2,

Figure 4 is an enlarged broken plan view of the jaws opened ready to engage a battery cable clamp and terminal, and

Figure 5 is a perspective view of the device as applied to a battery.

There is shown at 10 and 11 a pair of operating handles or levers. Pivoted to the handle 10 at 12 is a jaw 14 and pivoted to the other handle 11 as at 15 is a second jaw 16, the jaws 14 and 16 each terminating in an inturned tooth 17 and 18. A pair of spacing washers 12' may be provided on opposite sides of the jaw 14 about pivot 12. The teeth 17 and 18 and the jaws likewise are preferably case hardened.

The handles 10 and 11 are pinned together by a pivot 19 passing through projecting hollow flanges 20 and 21 thereof, the pivot 19

also passing through the push rod 22. A U-shaped plate 23 passes about both jaws and push rod, being pivoted to the jaw 14 at 24. A pair of pivot pins 25 pass through the frame 23 and through a longitudinal slot 26 in the push rod 22 and serve to guide the push rod in an upward and downward direction. The plate 23 is slotted as at 27 in a direction transverse of the jaw and a pin 28' passes through this slot 27 and the jaw 16 and through an additional but smaller U-shaped plate 28, to which the ends are affixed. A bolt 29 passes through a slotted opening in the U-end of plate 23 and an opening in the U-end of the plate 28, being held in position thereon by a wing nut 30 and a compression spring 31.

In operation, the battery nut which serves to hold the split cable clamp 32 on the battery post 33 is slightly unscrewed. The handles 10 and 11 are each grasped in one hand and opened wide to the position shown in Figure 4, and placed with the push rod 22 resting on the top of the battery post 33, while the jaws 14 and 16 each pass on opposite sides of the cable clamp 32 with the teeth 17 and 18 coming thereunder, the wing nut 30 having been previously properly adjusted to allow the teeth 17 and 18 to just pass under the outsides of the clamp 33. Then the mere act of pressing the handles 10 and 11 toward each other will serve to press the push rod 22 downwardly through the medium of the interconnecting pivoting pin 19 and pull the jaws 14 and 16 upward through the medium of the connecting pivoting pins 12 and 15, thereby quickly and easily removing the battery clamp 32 from the battery post 33 no matter how the same may have been covered with corrosion from the battery acids.

As will be obvious, the entire pressure or force will be exerted in pulling the cable clamp 32 away from the battery post 33 without tending to affect the position of the battery post 33 in the battery or to loosen the same whatsoever.

The novel features and the operation of this device will be apparent from the foregoing description. While the device has been shown and the structure described in detail, it is obvious that this is not to be considered

limited to the exact form disclosed and that changes may be made therein within the scope of what is claimed without departing from the spirit of the invention.

5 Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. A tool of the class described comprising a pair of handles, a push rod, said handles being pivoted to each other and to said push rod by a common pivot, a jaw independently pivoted to each handle, a guiding frame affixed to said jaws and push rod, said guiding frame being U-shaped, said affixing means comprising a pivot through said frame and one of said jaws, a pair of pivots affixed in said frame and passing through a longitudinal slot in said push rod, a pivot through said frame and said second jaw, said latter pivot passing through a transverse slot in said U-shaped frame, a second U-shaped frame about the U-end of said first frame, said latter pivot being affixed in said second U-shaped frame, and means for adjusting the position of said latter pivot in said transverse slot of said first frame.

2. A tool of the class described comprising a pair of handles, a push rod, said handles being pivoted to each other and to said push rod by a common pivot, a jaw independently pivoted to each handle, a guiding frame affixed to said jaws and push rod, said guiding frame being U-shaped, said affixing means comprising a pivot through said frame and one of said jaws, a pair of pivots affixed in said frame and passing through a longitudinal slot in said push rod, a pivot through said frame and said second jaw, said latter pivot passing through a transverse slot in said U-shaped frame, a second U-shaped frame about the U-end of said first frame, means for adjusting the position of said latter pivot in said transverse slot of said first frame, said means comprising a bolt affixed in said first U-frame and extending through an opening in the U of said second U-frame, nut means on said bolt, and a compression spring between said nut means and said second U-shaped frame.

In testimony whereof I affix my signature.

JOHN RICHARD.

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