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QUICK CHANGE BATTERY SUPPORT

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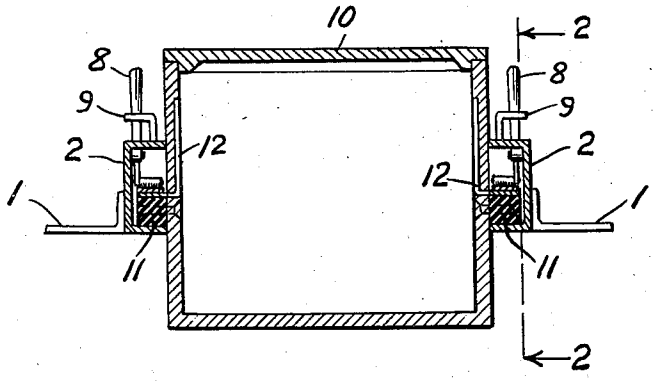


FIG. 1.

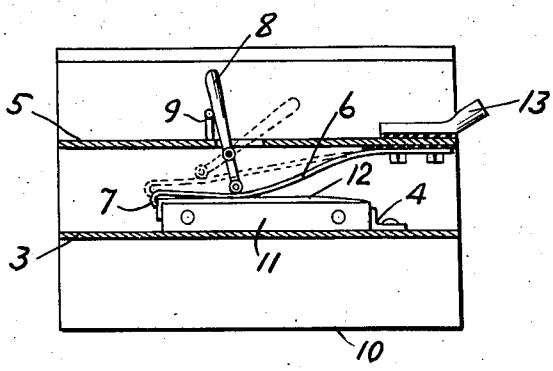


FIG. 2.

WITNESS:
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QUICK-CHANGE BATTERY SUPPORT

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7 Claims. (Cl. 136—171)

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The principal objects of the present invention are to provide for firmly and securely holding a battery in respect to a vehicle; and to provide for quickly and easily changing a discharged battery for a charged battery by the simple operation of withdrawing the discharged battery and replacing it with a charged battery and without requiring attention to the manipulation of circuit connectors which automatically take care of themselves.

Other objects of the invention will appear from the following description at the end of which the invention will be claimed.

Generally stated, the invention comprises a pair of confronting channel members carried by a vehicle frame and each having a lower flange provided on its inside face with a stop and an upper flange provided on its inside face with a latch spring and with a centrally pivoted hand latch lever co-operating with the spring and with a back stop for the lever in association with a battery box externally provided with an insulating block adapted to slide on the lower flange into contact with the stop and into range of the spring, the block being faced with conducting strips disposed in range of the spring when stressed by the hand lever and the spring being provided with terminal lugs.

The invention also comprises the improvements to be presently described and finally claimed.

In the following description reference will be made to the accompanying drawing forming part hereof and in which,

Figure 1 is a transverse sectional view illustrating features of the invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Referring to the drawing, 1 indicates parts of a vehicle frame, the term "confronting" as used here is intended to signify that the open channels of the two channel members are disposed face to face, as shown in Figure 1 of the drawings. 2 indicate a pair of confronting channel members carried by the frame. Since the construction is the same at each of the channel members a description will be given in respect to one of them. The lower flange 3 is provided on its inside face with a stop 4. The upper flange 5 is provided on its inside face with a latch spring 6 having a hooked end 7. The upper flange 5 is also provided with a centrally pivoted latch lever 8 which cooperates with the latch spring 6 and with a back stop 9 provided on the outer face of the upper flange 5. 10 is a battery box and it is externally provided with insulating blocks 11 adapted to

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slide on the lower flange 3 into contact with the stop 4. The block 11 slides under the hook end 7 of the spring 6 when it and the hand lever 8 are in the position indicated by dotted lines. The blocks 11 are faced with conducting strips 12 disposed in range of the springs when in full line position. The springs 6 are provided with terminal lugs 13.

When the parts are in the positions indicated in full lines the blocks 11 are held against the stops 4 by the hooked ends of the springs so that the battery box 10 is held firmly and immovably in respect to the vehicle frame 1. When the battery is discharged or is to be replaced by another or charged battery all that is required is to move the handle 8 into dotted line position thereby releasing the spring 6 whereupon the battery is slid along the lower flanges 3 and a fully charged or different battery is slid into place and the handle 8 moved to full line position. Evidently this may be done very quickly and in doing it the conducting strips 12 are automatically connected with the terminal lugs 13. It may be remarked that the elements 13 and 6 are in electrical connection with each other and are insulated from the upper flange 5.

It will be obvious to those skilled in the art to which the invention relates that modifications may be made in details of construction and arrangement without departing from the spirit of the invention which is not limited to such matters or otherwise than the prior art and the appended claims may require.

I claim:

1. A quick change battery support comprising in combination a vehicle frame, a pair of confronting channel members carried by the frame and each having a lower flange provided on its inside face with a stop and an upper flange provided on its inside face with a latch spring having a hooked end and with a centrally pivoted hand latch lever cooperating with the spring and a back stop for the lever provided on the outer face of the upper flange, a battery box externally provided with an insulating block adapted to slide on said lower flange into abutment with said stop and into range of said spring and of the hooked end thereof, said block faced with conducting strips disposed in range of said spring when stressed by said lever, said spring being provided with a terminal lug.

2. A quick change battery support comprising in combination a vehicle frame, a pair of confronting channel members carried by the frame and each having a lower flange provided on its

inside face with a stop and an upper flange provided on its inside face with a latch spring and with a hand latch lever cooperating with the spring and a battery box externally provided with an insulating block adapted to slide on said lower flange into abutment with said stop and into range of said spring, said block faced with a conducting strip disposed in range of said spring when stressed by said lever, said spring being provided with a terminal lug.

3. In a supporting structure for a storage battery having an elongated lateral projection bounded by horizontal upper and lower faces, the combination of a channel member having upper and lower flanges providing a longitudinal slideway adapted, when the battery is in its normal position, to receive the lateral projection with its lower face resting on the lower flange, a stop to limit the motion of the battery in one direction with respect to the supporting structure, a spring latch member attached at one end to the supporting structure and having a depending hook at its free end, said latch member positioned when unrestrained to overlie said lateral projection but out of contact therewith, and means supported on the structure adapted to depress said latch member to bring said hook into engagement with one end of said lateral projection to prevent motion of the battery away from the stop.

4. In combination, a battery box having blocks projecting from opposite sides, a pair of horizontally disposed slideways slidably receiving said blocks and thereby supporting the battery box, leaf springs fixed to said slideways and having free ends engageable with said blocks, and levers pivoted to said slideways and engageable with said springs to force the springs into engagement with the blocks and thereby retain the battery box in fixed position relative to the slideways.

5. In combination, a battery box having blocks projecting from opposite sides, conducting strips on faces of said blocks, a pair of horizontally disposed slideways having upper and lower flanges, said lower flanges slidably supporting said blocks, contact springs fixed to said upper flanges, terminal lugs electrically connected to said springs, and levers pivoted to said slideways and engageable with said springs to force the springs into engagement with said strips and thereby retain the battery box in fixed position relative to the slideways and electrically connect said terminal lugs with said conducting strips.

6. In combination, a battery box having blocks projecting from opposite sides, conducting strips on the upper faces of said blocks, a pair of horizontally disposed slideways having upper and lower flanges, said lower flanges slidably supporting said blocks, contact springs having end portions fixed to said upper flanges and free ends terminating in hooks, said hooks normally clearing said blocks, terminal lugs electrically connected with the fixed ends of said springs, and levers pivoted to said slideways and engageable with said springs to force said hooks into engagement with said blocks and thereby retain the battery box in fixed position relative to the slideways and electrically connect said terminal lugs with said conducting strips.

7. In combination, a battery box having projections on opposite sides, conducting strips on said projections electrically connected to the battery electrodes, a pair of horizontlly disposed slideways slidably receiving said projections and thereby supporting the battery box, lever mechanism pivoted to said slideways, and means on said slideways which under the pressure applied by said lever mechanism will hold the battery box in fixed position relative to said slideways and establish electrical connection with said conducting strips.

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