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BATTERY RETAINER MEANS

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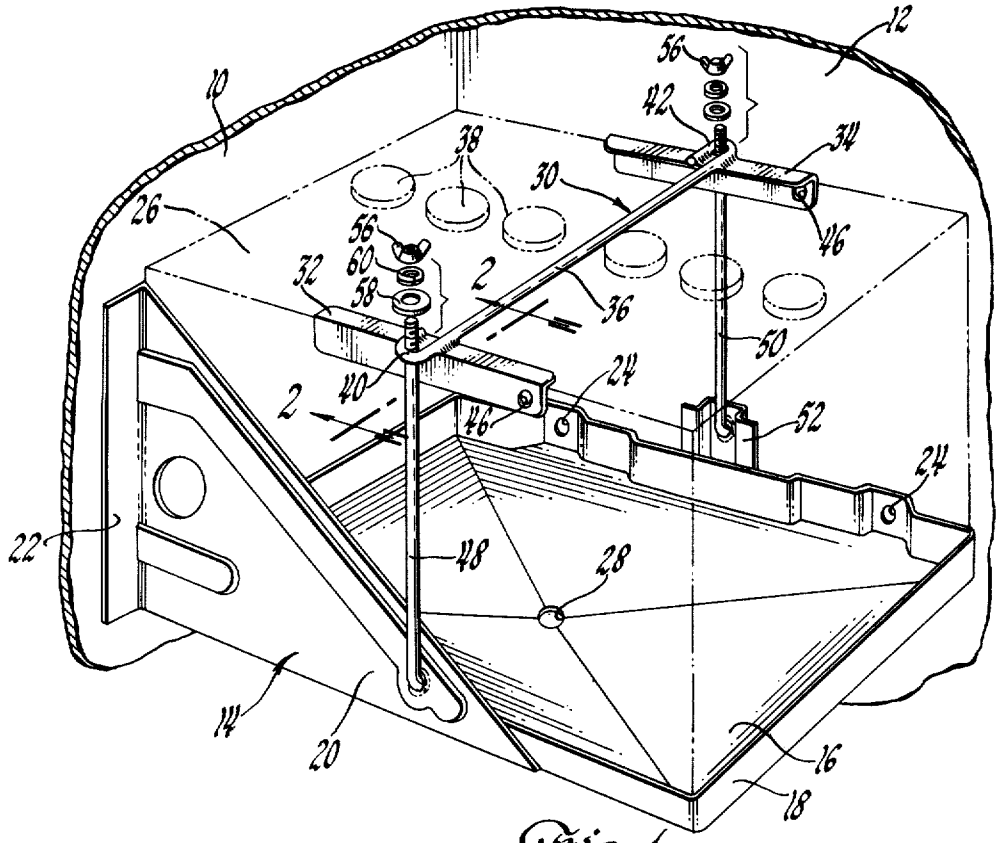


Fig. 1

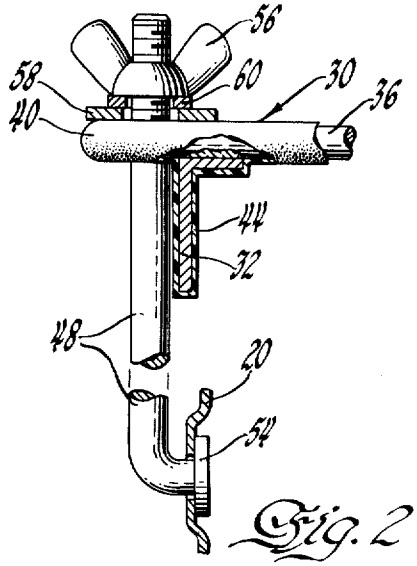


Fig. 2

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BATTERY RETAINER MEANS

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7 Claims. (Cl. 180—68.5)

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

This invention relates to means for holding a battery member or the like within a receiving tray member.

Automotive and other vehicle bateries which are housed within engine compartments with other accessory items are required to be mounted within an unobstructive space in a secure manner and to be readily accessible for service and replacement. It is desirable that such battery retainer means be relatively inexpensive to manufacture, be easily disassembled when a battery is to be removed, and at the same time provide secure shakeproof mounting of the battery as installed.

It is here proposed to provide a battery retainer means which is simple in construction, includes few parts, is inexpensive to manufacture, easily assembled and readily applied and removed. The proposed retainer means includes a pair of spaced angle bracket members for engaging opposite edges of the battery case and which are secured to a rod member extended therebetween and having its ends looped to receive tie rods engaged to the battery receiving tray. Threaded fastener means engaged with the ends of the tie rods draw the retainer assembly towards the tray member and engage the battery member securely within the receiving tray.

In the drawings:

FIGURE 1 is a perspective view of the proposed battery retainer means showing the battery member in phantom.

FIGURE 2 is a cross-sectional view of the proposed retainer means taken in the plane of line 2—2 of FIGURE 1 and looking in the direction of the arrows thereon.

A fragmentary section of an engine compartment, formed by walls **10** and **12**, is shown in FIGURE 1. A battery receiving tray member **14** which includes a sheet metal base **16**, vertically extending ridge **18**, and a supporting side wall **20**, is secured within the engine compartment between walls **10** and **12** as by spot welding the flange **22** of supporting wall **20** to compartment wall **10** and applying fastener means (not shown) through apertures **24** in ridge **18** to compartment wall **12**. The tray member is of such dimension as to receive a battery member **26**, shown in phantom, upon the base **16** and within the ridge **18** defining the edge of the tray. The aperture **28** may be provided to drain off any water accidentally collecting on the tray member.

The proposed battery supporting means further includes a battery retainer assembly **30**. A pair of right angle members **32** and **34** are spaced for engagement with the upper edges of the battery **26** and are secured to a rod **36** extended therebetween and across the top of the battery. The rod is spaced to lie between battery filler caps **38** as is shown and has its ends extended beyond the angle members **32** and **34**, and the sides of the battery. The ends of rod **36** are bent back upon themselves and secured to the angle members to form looped portions **40** and **42**.

The retainer assembly is coated with a non-conductive and non-corrosive material such as a rubber or plastic composition **44** for longer serviceable life and so as not to damage or interfere with the battery in holding it to the tray member. The holes **46** which are shown formed

through one end of each angle member, facilitate the dip coating of the assembly.

Tie rod members **48** and **50** are adapted to secure the retainer assembly **30** to the tray **14** and to hold the battery **26** therebetween. The tray supporting side wall **20** and a small upright bracket **52** disposed oppositely thereof and secured to ridge **18**, are each provided with apertures for receiving the lower ends of the tie rods which are formed with heads **54**. The tie rods as extended through the wall **20** and bracket **52** are held in pivotal engagement by the headed ends **54**.

The upper ends of the tie rods **48** and **50** are extended through the looped end portions **40** and **42** of rod **36** and are threaded to receive the wing nuts **56**. A washer **58** and lock nut **60** complete the fastener assembly, and enable the battery retainer assembly **30** to be drawn towards the tray **14** with the battery **26** securely engaged therebetween.

What is claimed is:

1. Means for holding a battery member within a receiving tray and which includes a retainer assembly having separate elongated angle members spaced for engaging opposite edges of said battery member, a rod member secured transversely to said angle members between the ends thereof and extended therebetween, the ends of said rod member extending beyond said angle members and being formed therewith to provide closed looped end portions, and means received through said looped end portions for engaging said retainer assembly to said tray member and said battery member therebetween.

2. The means received through said looped end portions as provided for by claim 1 which includes tie rod members pivotally received by said tray and having the ends thereof extended through said looped end portions of said rod member for engaging said retainer assembly to said tray member and said battery member therebetween.

3. The means for holding a battery member within a receiving tray as provided for by claim 2 which further includes having at least that part of said retainer assembly engaged with said battery coated with a resilient non-conductive and non-corrosive material for protection of said battery and of said retainer from acids commonly used within said battery.

4. Battery retainer means including a tray member formed to receive a battery member thereon, a retainer member including elongated right angle members spaced to engage opposite edges of said battery member and having a rod member secured transversely thereto and extended therebetween, the ends of said rod member extending beyond said angle members and being bent back upon themselves and secured to said angle members to form closed loop portions at opposite ends of said retainer member, said loop portions extending beyond the said edges of said battery member, and tie rod members engaged to said tray member and having the ends thereof extended through said loop portions, said ends of said tie rods being threaded to receive fastener means for drawing said retainer members towards said tray member and engaging said battery member therebetween.

5. Battery retainer means including a tray formed to receive a battery thereon, a retainer assembly including elongated right angle members spaced to engage opposite edges of said battery member and a rod member secured transversely thereto and extended therebetween, one of said members extending beyond said battery member and formed to provide loops, said loops extending beyond the said edges of said battery member, and tie rods engaged to said tray member and having the ends thereof extending through said loops, said ends of said tie rods being threaded to receive fastening means for drawing said retainer as-

sembly toward said tray and engaging said battery therebetween.

6. A battery hold-down clamp for vehicular storage batteries of the type having a plurality of filler openings projecting from the top surface thereof comprising a horizontal bar positionable adjacent the top surface of the battery adjacent said filler openings, said bar having ears extending beyond the edges of the battery at its opposite ends with bolt-receiving openings therein, and a pair of cross members of L-shaped cross section for contacting top opposite edges of said battery and being of a length substantially greater than the width of the bar, said cross members being connected intermediate their ends to the bar near said ears.

7. A battery hold-down clamp for vehicular storage batteries of the type having a plurality of filler openings projecting from the top surface thereof comprising a horizontal bar positionable adjacent the top surface of the battery adjacent said filler openings, said bar having ears extending over and beyond the edges of the battery at its opposite ends with bolt-receiving openings therein, a pair of cross members of L-shaped cross section for contacting top opposite edges of said battery and being of a length substantially greater than the width of the bar, said cross members being secured intermediate their ends to the bar near said ears, and a thick coating of acid-resisting plastic material covering said bar and cross members.

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