March 18, 1941. A. W. BAK 2,235,062

HOUSING FOR BATTERY TERMINAL CLAMPS

Filed July 29, 1940

Fig. 1

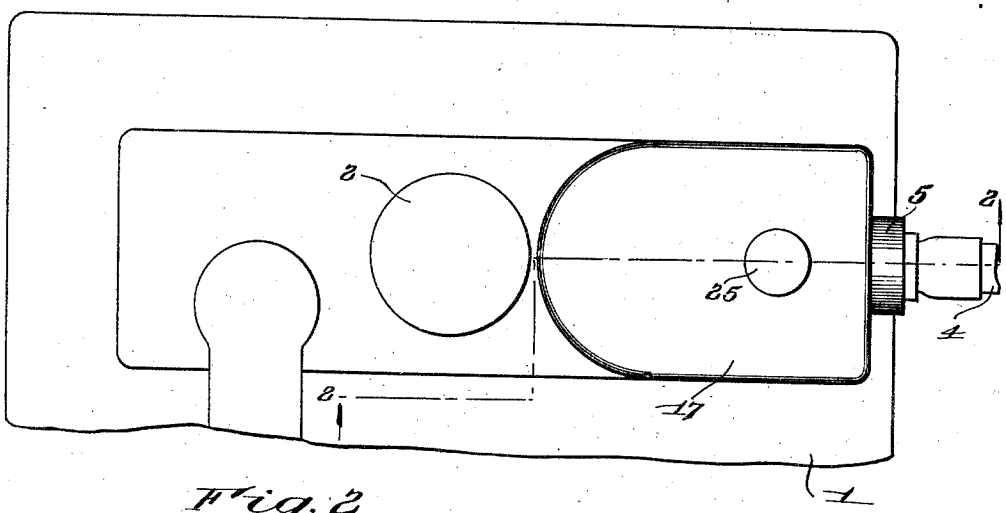


Fig. 2

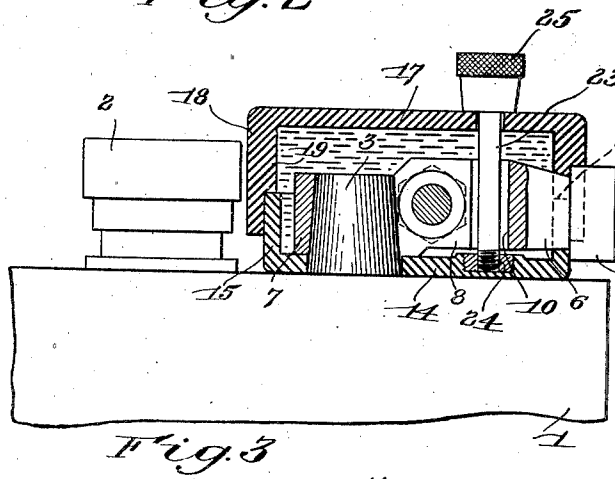


Fig. 3

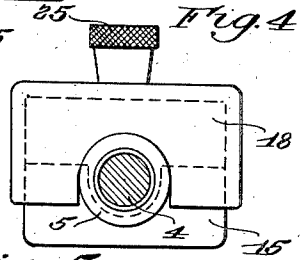
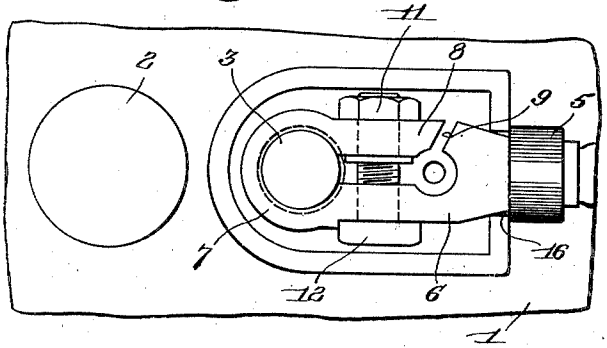
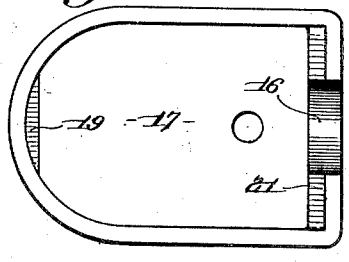


Fig. 4

Fig. 5





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HOUSING FOR BATTERY TERMINAL CLAMPS

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3 Claims. (Cl. 173—259)

This invention relates to a housing for a battery terminal clamp, with reference particularly to the general type of storage battery employed on automobiles, airplanes, and in similar relationships, and has for its purpose to afford a housing that will entirely surround the clamp, so that a mass of grease can be placed around the terminal and clamp and maintained in suitable relationship by the surrounding housing to prevent corrosion.

In a more particular aspect, the invention comprises a housing including two separable and preferably telescoping sections, one of which is positionable around the terminal and rests upon the battery case, while the other section of the housing is positionable over the first mentioned section after the clamp has been positioned therein and attached to the terminal, the two sections of the housing being suitably secured together to hold the upper section in place.

Another object of the invention is to afford a clamp of a construction that permits it to be used in connection with a housing such as referred to above and with a conventional type of battery, in which there is a limited space between the terminal and liquid opening cap, the clamp being so designed as to fit within the bottom section of the housing when attached to the terminal while the upper section of the housing is thereafter superposed on the lower section.

A further purpose of the invention is to afford a novel construction of clamp in which the fastening devices are at the sides instead of at one end, as in the conventional type of clamp, thus enabling the clamp to be conveniently positioned, together with the inner end walls of the housing, in the space between the terminal and the liquid opening cap.

Still another object of the invention is to afford a housing for the purposes mentioned that shall be of simple construction and economical to produce, and which lends itself readily to being manufactured from plastic or other suitable insulating material.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear clearly from the following description when read in conjunction with the accompanying drawing, the novel features being pointed out in the claims following the specification.

In the drawing:

Fig. 1 is a plan view of a conventional type of battery, partially broken away, and showing the application thereto of a preferred embodiment of the invention;

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1, partially in elevation;

Fig. 3 is a plan view, with the upper section of the housing removed;

Fig. 4 is a view in end elevation, and

Fig. 5 is a view in elevation looking at the interior of the upper section of the housing.

Referring more particularly to the drawing in which like reference numerals refer to the same parts throughout the several views, 1 designates the top of a case of a conventional battery, that includes a removable cap 2 for the liquid filling opening, while 3 is one of the usual battery terminals to which a conductor 4 is connected by a clamp attached to the conductor and adapted to be removably secured to the terminal 3. The structure thus far described is old in the art, and the invention forming the subject matter of this application has to do with the housing that encloses the clamp to hold a body of grease around the same and the form of the clamp that permits such housing to be used and to be accommodated between the liquid opening cap 2 and terminal 3. The conventional type of clamp generally used includes a pair of separable clamping jaws including oppositely arranged lugs and a bolt or other securing means positionable between the terminal 3 and the removable cap 2, at a point opposite to the conductor 4, but such a clamp cannot be used with a housing such as contemplated, because there is insufficient space between the terminal 3 and the cap 2 to accommodate the clamp fastening devices and the housing sections.

To overcome this, the clamp of the present invention is differently constructed and includes a base 5 that receives the conductor 4 which is permanently secured to the base 5 in the usual manner and a longitudinally extending side wall 6 that terminates in a circular-like collar 7 arranged to embrace the terminal 3. 8 is a side wall opposite to the aforementioned wall 6 and spaced therefrom, the side wall 8 being formed integral with the collar 7 and spaced from the base 5 of the clamp by a slot 9, formed by cutting through the side wall 8 from its outer edge to the inner edge thereof, the side walls 6 and 8 and the base 5 being cut away to afford the central opening 10 for a purpose that will appear presently.

Owing to the formation of the slot 9 in the side wall 8, the latter is more or less yieldable toward the fixed wall 6, and can be drawn toward the

latter by a suitable bolt 12 and clamping nut 11, the said bolt extending through openings in the side walls 6 and 8 and operating when the nut 11 is tightened to draw the movable wall 8 toward the fixed wall 6 and thereby tighten the collar 7 about the terminal 3. By arranging the circular-like collar at the end of the clamp, and locating the fastening devices at the central portion of the clamp, between the collar and the base, the only portion of the clamp located between the terminal and the cap 2 is the inner end wall of the collar 7 which can be readily accommodated along with the housing to be described presently, between the terminal 3 and the cap 2.

In conventional use of clamps for battery terminals, it is common practice to apply a suitable grease around the terminal and clamp to prevent corrosion, but this is not entirely satisfactory due to the fact that there is no means for holding a sufficient amount of grease in contact with the parts to be protected, and in a short time it dries and ceases to function as a corrosion preventative. To overcome this, the present invention includes an enclosing housing consisting of two sections telescoping one within the other, and operable to hold a substantial body of grease intimately in contact with the terminal and clamp and thus to prevent the grease from dropping away or drying in a short time.

To accomplish this, I employ a housing made from any plastic or other suitable insulating material and consisting of a bottom section which includes a base 14 having in it an opening through which extends the terminal 3, while 15 designates an upstanding side wall around the base 14. The base 14 and upstanding side wall 15 are of a contour that will surround the collar 7 of the clamp and the side walls thereof to the base 5, the upstanding wall 15 across the outer end of the clamp being recessed at 16 to receive the end of the body of the clamp and abut the base 5 thereof as shown in Fig. 3. The upstanding wall 15 is preferably of a height somewhat less than that of the clamp, and it will be understood that in assembling the structure, the bottom section of the housing is first positioned on the top surface 1 of the battery case by positioning the opening in the bottom wall 14 over the terminal 3, as shown in Fig. 2. Thereupon, the conductor clamp is positioned over the terminal 3, resting upon the base 14 of the bottom section of the housing, and the nut 11 is tightened to secure the clamp to the terminal, after which the upper section of the housing, which will now be described, is positioned and secured in place.

The upper section of the housing comprises a top wall 17 and a depending side wall 18, the upper section being of the same contour as the lower section, but sufficiently larger to permit the depending wall 18 to surround and occupy a position in juxtarelation to the aforementioned upstanding wall 15 of the bottom section. The upper section of the housing has an enlargement or shoulder 19 formed interiorly at its inner end and shoulders 21 at the same elevation formed at its outer end, preferably at the corners, said shoulders 19 and 21 being arranged to engage the top of the upstanding wall 15 of the lower section of the housing and rest thereon, to limit the downward movement of the upper section while the depending wall is recessed at its end at 16 to slip over and accommodate the base 5 of the clamp, occupying a position beyond and adjacent to the end of the wall 15.

Suitable means are provided for holding the upper section of the housing in place, and to accomplish this, a threaded post 23 may be suitably secured to the lower section as by engaging a nut 24 embedded in the base 14, the post 23 extending through an opening provided for the purpose in the top 17 of the upper section, while 25 is a suitable knurled cap carried by the post 23 which thus holds the upper section of the housing in place upon the lower section. It will be understood that before positioning and attaching the upper section, a suitable amount of grease can be applied within the lower section of the housing around the clamp and terminal and also above the clamp and terminal so that when the upper section of the housing is placed in position, the interior of the housing is substantially filled with grease, which is thus held in protective engagement with the terminal and clamping means for an indefinite time.

While the invention has been described with reference to the structural details herein disclosed, it is not confined to the particular embodiment set forth, and this application is intended to cover any modifications or departures coming within the intent of the improvements and the scope of the following claims.

I claim:

1. The combination with a battery terminal and the liquid opening cap of said battery to permit filling the battery with water and located in relatively close proximity to said terminal, of a clamp including a base at its outer end and a circular-like collar at its inner end engaging said terminal, the inner end of the collar being positioned between said terminal and liquid opening cap and the clamp including opposite side walls located between said collar and said base spaced one from the other and connected to said collar, one of said side walls being movable toward and from the other, fastening means extending through said side walls at a point between said collar and the outer end of the clamp, a housing consisting of a lower section having a bottom wall underlying said clamp and having an opening surrounding the terminal, and a vertical wall with a recess in its outer end embracing the outer end of the clamp, and an integral upper section having a top wall and a vertical wall that telescopes over the outer surface of and surrounds the upper portion of the vertical wall of the lower section, said housing being rectangular at its outer end and of circular formation at its inner end where it extends around the circular-like collar, said upper section having a recess in its vertical wall at the outer end embracing the outer end of the clamp, and means for limiting the relative telescoping movement of the sections.

2. The combination with a battery terminal and the liquid opening cap of said battery to permit filling the battery with water and located in relatively close proximity to said terminal, of a clamp including a base at its outer end and a circular-like collar at its inner end engaging said terminal, the inner end of the collar being positioned between said terminal and liquid opening cap and the clamp including opposite side walls located between said collar and said base spaced one from the other and connected to said collar, one of said side walls being movable toward and from the other, fastening means extending through said side walls at a point between said collar and the outer end of the clamp, a housing consisting of a lower section having a bottom wall

underlying said clamp and having an opening surrounding the terminal, and a vertical wall with a recess in its outer end embracing the outer end of the clamp, and an integral upper section having a top wall and a vertical wall that telescopes over the outer surface of and surrounds the upper portion of the vertical wall of the lower section, said housing being rectangular at its outer end and of circular formation at its inner end where it extends around the circular-like collar, said upper section having a recess in its vertical wall at the outer end embracing the outer end of the clamp, means for limiting the relative telescoping movement of the sections, a post secured to said lower section and extending vertically through an opening in the clamp at a point between said fastening means and the outer end of the clamp, said post extending through an opening in the top wall of the upper section and threaded at its upper end, and a fastening member threaded on the upper end of the post and engaging with said upper section for holding the latter in position.

3. The combination with a battery terminal and the liquid opening cap of said battery to permit filling the battery with water and located in relatively close proximity to said terminal, of a clamp including a base at its outer end and a circular-like collar at its inner end engaging said terminal, the inner end of the collar being positioned between said terminal and liquid opening cap and the clamp including opposite side walls located between said collar and said base spaced one from the other and connected to said collar, one of said side walls being movable toward and from the other, fastening means extending through said side walls at a point between said collar and the outer end of the clamp, a housing consisting of a lower section having a bottom wall underlying said clamp and having an opening surrounding the terminal, and a vertical wall with a recess in its outer end embracing the outer end of the clamp, and an integral upper section having a top wall and a vertical wall that telescopes over the outer surface of and surrounds the upper portion of the vertical wall of the lower section, said housing being rectangular at its outer end and of circular formation at its inner end where it extends around the circular-like collar, said upper section having a recess in its vertical wall at the outer end embracing the outer end of the clamp, and inwardly extending enlargements on opposite sides of said recess and at its inner end, said enlargements engaging the upper edge of the lower section and limiting the telescoping movement of the sections, a post secured to the lower section and extending vertically through an opening in the clamp at a point between said fastening means and the outer end of the clamp, said post extending also through an opening in the top wall of the upper section and having a threaded upper end, and a fastening member threaded on the upper end of the post and engaging the upper section of the housing to hold the latter in position.

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