Sept. 3, 1935. H. R. PETERSON 2,013,219

ACID GUARD

Original Filed April 7, 1923 2 Sheets-Sheet 1

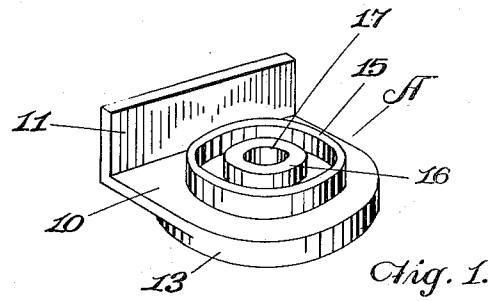


Fig. 1.

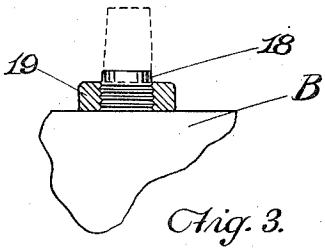


Fig. 3.

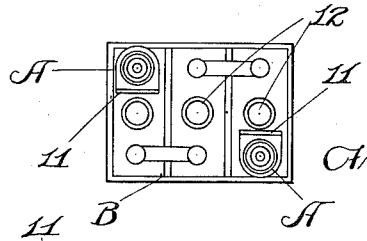


Fig. 2.

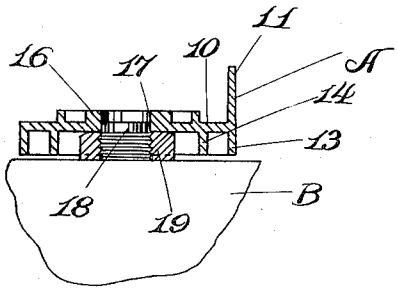


Fig. 4.

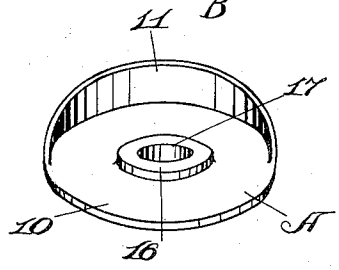


Fig. 6.

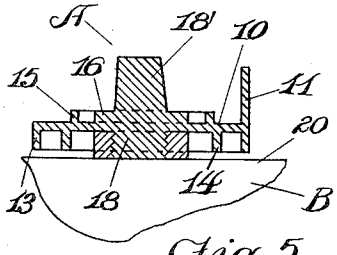


Fig. 5.

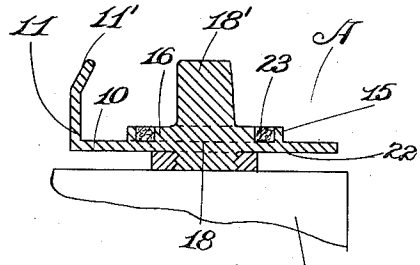


Fig. 7.

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ACID GUARD

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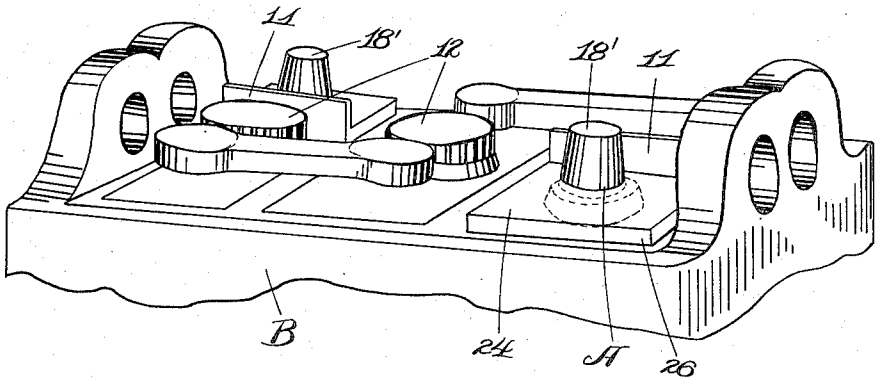


Fig. 8.

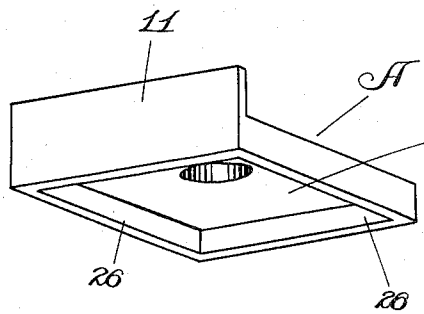


Fig. 9.

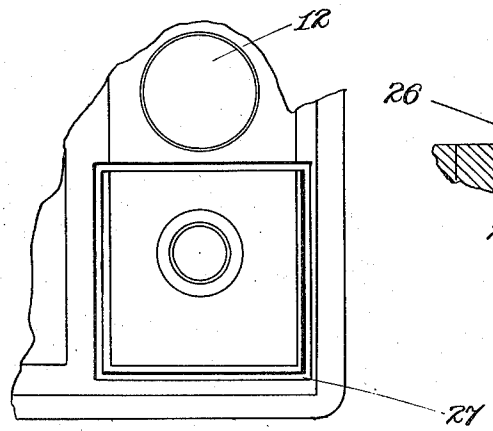


Fig. 11.

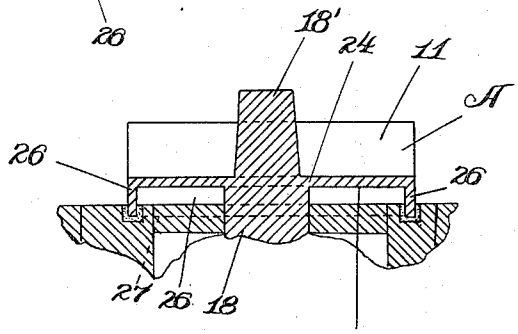


Fig. 10.

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Patented Sept. 3, 1935 2,013,219

UNITED STATES PATENT OFFICE

2,013,219

ACID GUARD

Hans R. Peterson, St. Paul, Minn.

Application April 7, 1928, Serial No. 268,332
Renewed April 23, 1934

3 Claims. (Cl. 173—259)

My invention relates to an acid guard for storage batteries such as are used for automobiles, radios and the like, the primary object of which is to provide a guard to prevent the acid from working up to the terminal post and connection and causing corrosion of the same.

A feature of the invention resides in an acid guard carried by the terminal post of the battery which is provided with flange means to prevent the acid from working along under the guard to the top of the same and to the connector secured to the battery post.

My invention also includes the means and method of attaching an acid guard to a battery terminal post in a simple and effective manner. The method consists in cutting off the post, then positioning my acid guard on the cut-off post and forming a new post integrally with the acid guard and projecting upward from the same.

An object of my invention is to provide an acid guard having a recess wherein a felt washer which is treated with a lubricant may be maintained or the recess may contain a lubricant which is a repellent of corrosive substance and acid.

It is also an object of my invention to provide an acid guard having a flange extending toward the filler plugs of the battery to guard against acid from the openings of the battery coming in contact with the upper surface of the guard plate.

My invention includes the integrally connecting of an acid guard plate member above the cell of the battery and provided with depending flange members which may be sealed into the sides of the cell and across the cover of the same, thereby preventing the acid which may work up around the stem of the post from coming out on to the top of the acid guard plate owing to the depending flange members and the integral connection of the plate with the post.

These features, together with other objects and details of the invention will be more fully and clearly set forth in the specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a perspective view of my acid guard.

Figure 2 is a plan view of a battery wherein my acid guards have been used on the same.

Figure 3 illustrates a detail showing the first step of my method of attaching my acid guard to a battery terminal post.

Figure 4 is a detail showing the second step of my method of attaching the acid guard to the battery post.

Figure 5 is a detail showing the third and final step of attaching my acid guard to a battery terminal post.

Figure 6 is a perspective view of another form of my acid guard.

Figure 7 is a detail section of one form of my acid guard.

Figure 8 is a perspective view of a portion of the top of a battery showing a different form of my acid guard.

Figure 9 is a perspective under view of the acid guard illustrated in Figure 8.

Figure 10 is a section of my acid guard used as of the construction illustrated in Figures 8 and 9.

Figure 11 is a plan view of a portion of a storage battery showing the groove wherein the depending flanges of the acid guard illustrated in Figures 8, 9 and 10 is adapted to fit.

In the drawings my acid guard A is made of lead or other suitable acid resisting material and is provided with a plate 10 adapted to extend normally horizontally when the guard A is attached to the storage battery B.

The acid guard A is formed with an upwardly extending side flange 11 which is adapted to be positioned adjacent the filling plug 12 of the battery B.

The plate 10 of the acid guard A is formed with annularly depending flange portions 13 and 14 which are positioned concentrically and which extend below the plate 10. The upper surface of the plate 10 is formed with an annular projecting flange 15, while a boss portion 16 extends about the central opening 17 formed axially in the plate 10.

In attaching my acid guard A, which can be attached to any battery, old or new, I accomplish the same in the method which consists as follows: The terminal post 18 of the battery B is cut off as illustrated in Figure 3. The cut-off portion of the post 18 is illustrated in dotted outline. After the terminal post 18 is cut off I then place my acid guard A upon the post resting upon the lock nut 19 with the lower edges of the acid guard flanges 13 and 14 away free of the upper surface of the battery B.

After the acid guard A is in position on the stub of the post 18, I then form the upper portion 18' on to the stub of the post 18, connecting the portion 18' integrally with the guard A, as illustrated in Figure 5. This is the final operation in carrying out my method and provides an acid guard A of a nature to prevent acid from working up along the post 18 and from the top surface

20 of the battery to the top of the plate 10. If any of the acid working up along the post 18 from the battery cell should crawl up to the under surface of the plate 10, the flange members 13 and 14 virtually prevent the acid from working from the bottom surface of the plate 10 to the top surface adjacent the connector which is ordinarily attached to the battery post 18' and which is not illustrated in the drawings.

In practical use I have found my acid guard A to keep the upper end of the post 18 of the battery B entirely dry and free from acid corrosion which ordinarily gathers about the connector and post and which does considerable damage to the battery. My acid guard A is carried freely by the post so as to move slightly with the same and yet is integrally sealed therewith so as to become and form a part virtually of the post with a broad wide surface in the plate 10 forming a substantial guard with the depending flanges 13 and 14 to prevent acid from working to the top of the same.

In Figure 6 I have illustrated an acid guard A of a simple nature having a comparatively thin flat plate 10, circular in formation and having an upper boss 16 about the opening 17. The guard 11 in this form of the plate is illustrated with the outer periphery of the plate 10 and thus I provide an acid guard A which is connected integrally in the same manner as I have illustrated in Figures 3 to 5, inclusive, with the battery post 18 to provide a guard to prevent acid from working to the top of the post in use. This guard is made of lead or other suitable acid resisting material.

I have illustrated another form of my plate A in Figure 7 which is provided with a smooth under surface 22, the same as the plate illustrated in Figure 6. In this acid guard A the flange 11 is formed with an inwardly extending upper guard portion 11' and the flange 11 is otherwise of the same nature as the flange 11 of Figure 1. The upper surface of the plate 10 in the guard A of Figure 7 is formed with the annular flange 15 and the recess between the flange 15 and the boss 16 is adapted to support a felt washer 23 which is saturated with a lubricant or other oil resisting material. Obviously the recess wherein the washer 23 rests may be filled with oil or grease to provide an acid repellent if it is desired.

My acid guard A may be made in the form illustrated in Figures 8 to 10, inclusive, and in this form the guard A is of a substantially rectangular nature with a smooth top surface 24 and a smooth under surface 25. Projecting from the upper surface I provide the guard plate 11 which is positioned adjacent the filling plugs 12, as illustrated, and projecting from the lower surface I provide a peripheral flange 26 about the guard A. The battery B is formed with a groove 27 into which the flange 26 is adapted to fit.

The plate A in the construction of Figures 8 to 10 inclusive, is secured to the terminal post 18 by building up the upper portion 18' of the same with my same method as described in Figures 3 to 5 inclusive, to integrally connect the top 18' of the terminal post with the battery guard A.

Thus I provide a battery guard for terminal posts which is adapted to extend about the post in a manner to form a shield and guard to prevent the acid from the battery cell working up along the post to the top of the same where it will contact with the connector which is ordinarily attached to the post. I have found that my acid guard will keep the upper part of the terminal posts 18' of the battery entirely free of acid and thereby provide a very desirable means for preventing corrosion on storage battery connecting posts. This is quite important in the use of storage batteries in the home where they are connected with radios as it overcomes the undesirable corrosion about the connectors.

In accordance with the patent statutes I have described the principles of my acid guard and while I have illustrated and endeavored to set forth the best embodiment thereof, the drawings and description are only illustrative of a means of carrying out the same and I desire to have it understood that obvious changes and other adaptations may be accomplished within the scope of the following claims without departing from the spirit of the invention.

I claim:

1. The combination, a storage battery, a sealed surface thereon, a filler plug thereupon, a terminal post adjacent said filler plug, a guard plate on said post, parallel with the sealed surface of the battery and spaced therefrom, a series of annular flanges about said post extending downwardly from said guard plate into close proximity with but spaced from the battery sealed surface, an upwardly extending flange about said post on said guard plate, an upstanding splash guard on said guard plate on the portion thereof next adjacent the filler plug, and open sides on said guard plate to provide free access to the terminal adapted to be positioned on said post.

2. The combination, a storage battery, a sealed surface thereon, a filler plug thereon, a terminal post adjacent said plug, a rounded flat guard plate on said terminal post disposed parallel with and in spaced relation to said sealed surface, a splash guard upstanding along a portion of the edge of said guard plate adjacent said filler plug, leaving the rest of the edge open to provide free access to place a terminal on said post, and upwardly and downwardly extending flanges on said flat guard plate surrounding said terminal post.

3. The combination of a storage battery, a sealed surface thereon, a filler plug thereon, a terminal post adjacent said plug, a flat guard plate on said terminal post, a splash guard upstanding along a relatively short portion of the edge of said guard plate adjacent the filler plug leaving the rest of the edge open to provide free access to place a terminal on said post, and a slanting upper extremity on said splash guard extending inwardly of said guard plate.

HANS R. PETERSON.