M. MELIA.

BATTERY TRAY.

APPLICATION FILED SEPT. 21, 1918.

1,290,487. Patented Jan. 7, 1919.

Fig. 1.

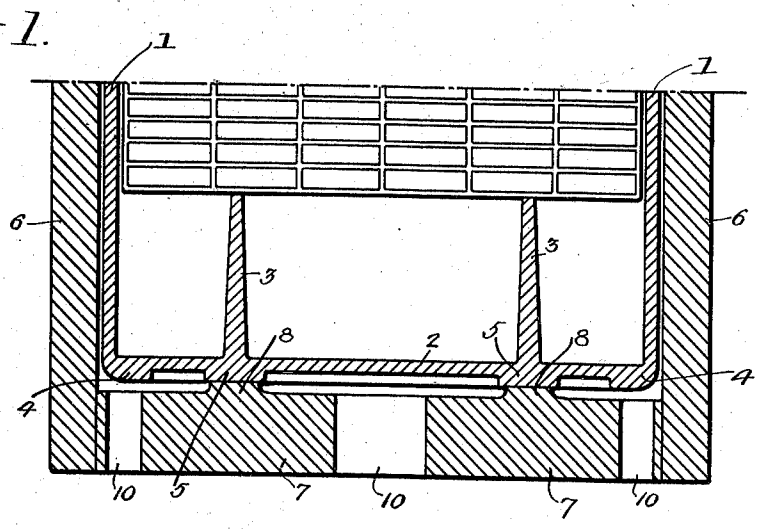
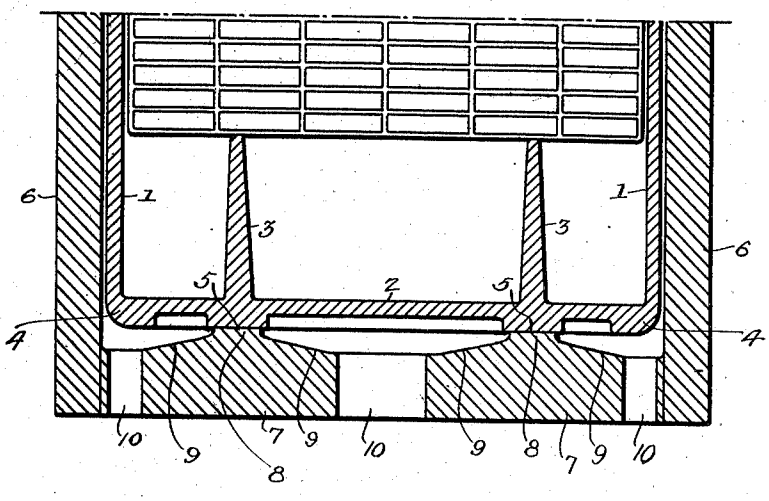


Fig. 2.



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UNITED STATES PATENT OFFICE.

MARTIN MELIA, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO COMMERCIAL TRUCK COMPANY OF AMERICA, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BATTERY-TRAY.

1,290,487. Specification of Letters Patent. Patented Jan. 7, 1919.

Application filed September 21, 1918. Serial No. 255,019.

To all whom it may concern:

Be it known that I, MARTIN MELIA, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented Battery-Trays, of which the following is a specification.

One object of my invention is to provide novel means for so supporting hard rubber and similar storage battery jars within their inclosing trays as to effectually prevent the stresses which in the past have been the frequent cause of cracking and breakage of said jars;—the invention especially contemplating a tray or container having the inner surface of its bottom of novel form with a view to avoiding such stresses and particularly designed to prevent the formation of hollows in which electrolyte may accumulate as well as to avoid such wear as will cause the jar to be supported in a manner liable to cause its breakage or cracking.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawing, in which,

Figure 1 is a vertical section showing my invention as employed in supporting a battery jar; and

Fig. 2 is a vertical section similar to Fig. 1, showing a modified form of the invention.

In the above drawings 1 represents the sides and 2 the bottom of a battery jar usually made of hard rubber or similar material, and which has projecting upwardly from said bottom a pair of narrow transverse ribs 3 designed to support the plates of the battery some distance above the bottom.

As ordinarily made, the bottom of the jar has its marginal portions 4 thicker than the remainder, being likewise thickened at 5 immediately under the ribs 3, and while such a construction gives satisfactory results as long as the jar is resting upon a perfectly plane surface, when, as under ordinary operating conditions, it is mounted in a tray or box 6 whose bottom 7 invariably warps to a greater or less extent and more or less serious stresses are set up owing to the concentration of the combined weight of the electrolyte and battery plates, upon a limited part of the jar which happens to engage the warped surface of the tray bottom.

Under conditions of use, the sudden shocks to which storage batteries are subjected, especially while supplying current for the operation of a motor vehicle, frequently cause breakage of the relatively brittle jars. While this breakage may be lessened by extending the external ribs 5 under the ribs 3, and causing them to project below the plane of the under side of the thickened margin 4, this is objectionable since the slight movement of the jar relatively to its tray or container 6 causes such external ribs to gradually wear away the tray surface upon which they rest and form depressions in which the electrolyte spilled under operating conditions will accumulate. As a result, the life of the tray is materially shortened and if the wear continues for a prolonged time, the projecting ribs wear into the bottom to such an extent as to allow the thickened margin of the cell to engage and be more or less supported by the inner surface of the bottom of the tray or container. The injurious stresses above noted are thereupon certain to occur.

In order to avoid the objections described, I have provided the bottom 7 of the tray or container 6 with upwardly extending ribs 8 so formed and situated as to be parallel with and in direct engagement with the external ribs 5 of the battery jar 1, the width of these ribs 8 being preferably less than that of the ribs 5 so that the latter overhang them. In order to facilitate the delivery from the tray or container 6 of any liquid accidentally entering the same, I incline the inner surface of the bottom 7 as indicated at 9 in Fig. 2 so that such liquid naturally drains away from the ribs 8 toward and through openings or perforations 10 formed at the middle and ends of the tray bottom.

With this arrangement of parts the weight of the battery plates and electrolyte is directly transmitted to the ribs 8 immediately under the battery jar so that there is no possibility of the bottom 2 or of the sides of the jar being required to support any of such weight.

If by reason of relative movement between the jar 1 and its tray or container 6 wear should occur between the ribs 5 and 8, the latter ribs would merely be reduced in height without the formation of hollows wherein liquid might accumulate. Where there is a possibility of such cutting or wearing becoming excessive, the ribs 8 may be made of such a height that it would be a practical im-

possibility for the marginal portions of the battery jar to ever come into engagement with the upper surface of the bottom 7.

I claim:

1. The combination of a battery jar having internal plate-supporting ribs and external ribs extending respectively under said internal ribs; with a container for the jar having ribs fixed to and projecting upwardly from its bottom in positions to respectively engage and support the external ribs of the jar.

2. The combination of a battery jar having internal plate-supporting ribs and external ribs extending respectively under said internal ribs; with a container for the jar having ribs fixed to and projecting upwardly from its bottom in positions to respectively engage and support the external ribs of the jar, the latter ribs being of greater width than the supporting ribs of the container so as to overlap the same.

3. The combination of a battery jar having internal plate-supporting ribs and external carrying ribs extending vertically under said internal ribs; with a container for said jar having ribs positioned to respectively engage the external ribs, the bottom of said container having drainage openings and being sloped downwardly away from its ribs toward openings.

In witness whereof I affix my signature.

MARTIN MELIA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."