Dec. 27, 1938. C. L. KELLER 2,141,791

CONSTRUCTION OF STORAGE BATTERY CONTAINERS

Filed May 6, 1936

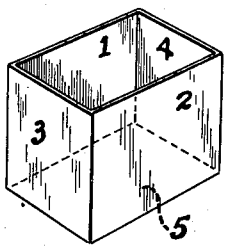


FIG. 1.

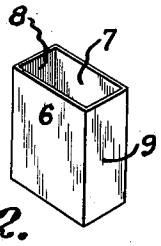


FIG. 2.

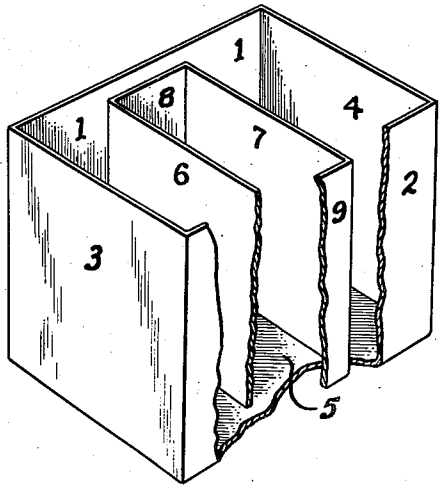


FIG. 3.

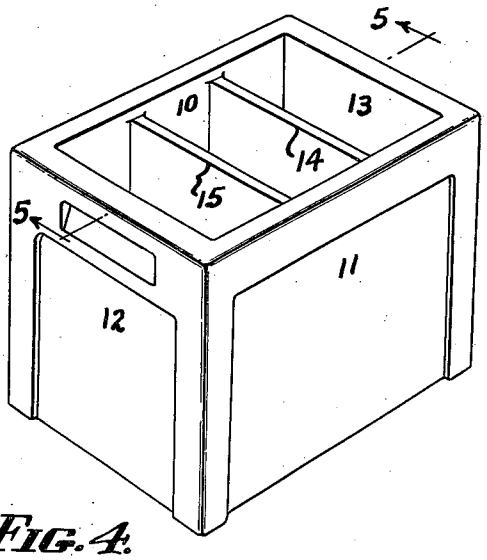


FIG. 4.

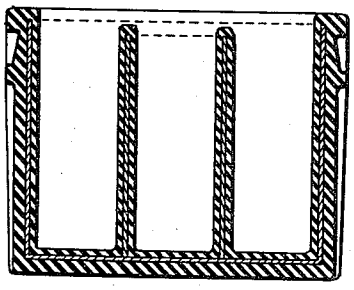


FIG. 5.

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CONSTRUCTION OF STORAGE BATTERY CONTAINERS

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2 Claims. (Cl. 206—2)

The making of a storage battery container, comprising a metal shell lined and coated with rubber or some other suitable composition, has hereto been suggested in the art and presents certain advantages. The use of a metal shell for only the exterior walls and bottom of the container, with the molding of the partition elements of the case from the composition alone, is disadvantageous. But the use of metal partition members to be coated with the rubber or other composition has been attended with a large number of commercial and operating troubles and has not been found entirely feasible. Not only is there a tendency for warpage to occur in these metal partition members, but the members themselves if spot welded or otherwise fastened to the outer shell, tend frequently to be ripped loose. Even where this does not occur, there are disadvantageous strains set up in the structure which lead to distortion, and may result in failure.

It is an object of my invention to provide means and a method to overcome these disadvantages in a construction, all parts of which are reinforced. This and other objects of my invention which will be set forth hereinafter, or will be apparent to one skilled in the art upon reading these specifications I accomplish by that certain construction and arrangement of parts of which I shall now describe an exemplary embodiment. Reference is made to the drawing wherein:

Figure 1 is a perspective view of an outer reinforcement member.

Figure 2 is a perspective view of an inner, or partition forming reinforcement member.

Figure 3 is a view, with parts in section, showing the two reinforcing structures in assembled relationship.

Figure 4 is a perspective view of the finished storage battery container.

Figure 5 is a sectional view of the container taken along the lines 5—5 of Figure 4.

I shall not describe in detail the methods whereby a rubber or other composition is molded in connection with a reinforcement structure, since any of those methods which are known in the art may be employed. Briefly, in the practice of my invention I provide an outer reinforcing structure of box shape, such as that shown in Figure 1 and having side walls 1 and 2, end walls 3 and 4, and a bottom member 5. I prefer to make this box, or container, of metal, altho other reinforcing structures are useable; and my invention is not limited to a metallic reinforcement; also, my invention is not limited to a structure in which the reinforcement is lined with rubber or other suitable composition, both within and without, altho this is to be preferred. The reinforcement may have any configuration desired and may be provided also with handle structures or with thickened, ribbed or corrugated portions for strength and stiffness. The outer reinforcing structure is, as shown, not provided with any integral partitions. The partitions, on the contrary, are formed as a separate structure, such as that shown in Figure 2, where a box shaped member is provided, preferably, though not necessarily, open at the bottom, and comprising side walls or partition members 6 and 7, and end walls 8 and 9. The proportions of this structure are such that it may be placed inside the structure of Figure 1, forming therewith a relatively snug fit.

In the practice of my invention, therefore, I provide a partition structure which is essentially separate from the outer reinforcing member, and is free to float therein during the molding operation for the equalization of strains; also the partition structure is preferably of integral box shape so that it can resist as a unit any stresses set up by the composition which is molded within it, thereby tending to relieve distorting stresses on the whole storage battery container. As indicated, the partition structure fits relatively snugly into the outer container, but this is not a limitation on my invention since, if desired, some portions of the composition may be molded between the walls 1 and 2 of the outer container, and the walls 8 and 9 of the partition structure; also, if desired, the walls 8 and 9 of the partition structure may be cut away in part, or perforated, so as to permit a bonding of the composition parts inside it, with the walls of the outer container, or with masses of composition thereagainst. Excepting for such attachment as occurs thru the molding of the composition against the several parts, I have found it preferable to leave my partition structure otherwise entirely free from the outer reinforcing structure for reasons which will be clear, altho it is possible to secure good results in most instances by tacking the partition structure to the outer reinforcement members at one or two spots substantially centrally of the walls 8 and 9, as by spot welding. An exemplary form of a completed storage battery case, embodying my invention, is shown in Figure 4 where the side walls of the container are shown at 10 and 11, the end walls at 12 and 13, and the partitions at 14 and 15. Figure 5 shows in section the storage battery

container of Figure 4, and indicates the relationship of the several parts.

In a container of the type of my invention, very little difficulty is had in manufacture, and those difficulties which have hitherto arisen due to the unequal contraction and expansion of the composition of the reinforcement members when the article is in use, have been substantially eliminated.

Modifications may be made in my invention without departing from the spirit of it.

Having thus described my invention what I claim as new and decide to secure by Letters Patent is:

1. In a moulded storage battery container or the like the combination of an outer reinforcing member, comprising side and end parts and a bottom part, and an inner or partition reinforcing member, comprising inter-spaced partition parts and means endwise of said parts for connecting them together, said partition reinforcing member being disposed within said outer reinforcing member, and the whole interior surfaces, at least, of the structure being covered with a molding composition, the inner and outer reinforcing members being otherwise free of each other.

2. In a moulded storage battery container or the like an outer reinforcing member, comprising side, end and bottom parts, forming a rigid structure, and a partition reinforcing member, comprising partition reinforcing parts and endwise means connecting said parts together as a unit, the second mentioned structure being disposed inside the first mentioned structure and connected therewith in such a way as to permit movement of partition parts with reference to the parts of the outer reinforcing member, under conditions of unequal expansion thereof, the interior surfaces at least of said composite structure being covered with a molding composition.

CHARLES L. KELLER.