No. 729,550. PATENTED JUNE 2, 1903.

G. H. CONDICT.

BATTERY JAR.

APPLICATION FILED DEC. 16, 1898.

NO MODEL.

Fig. 1.

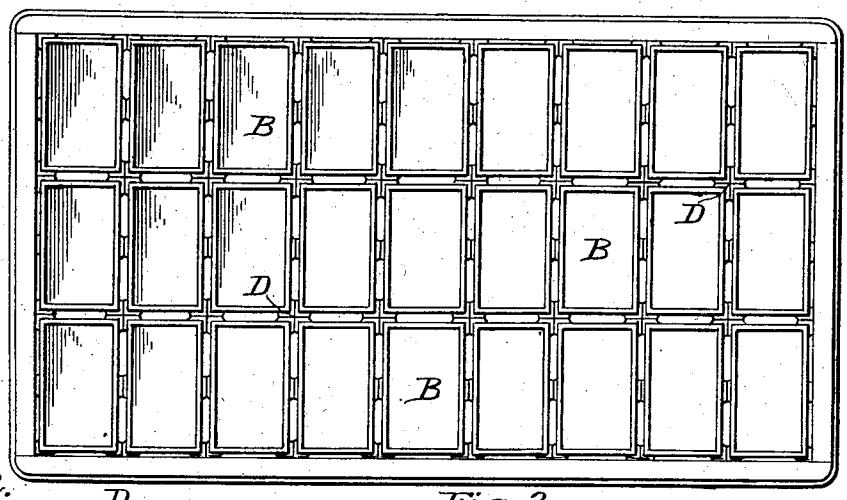



Fig. 2.

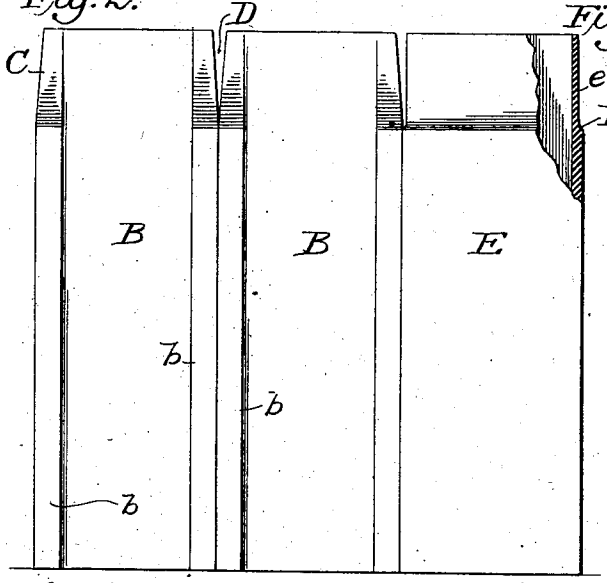



Fig. 3.

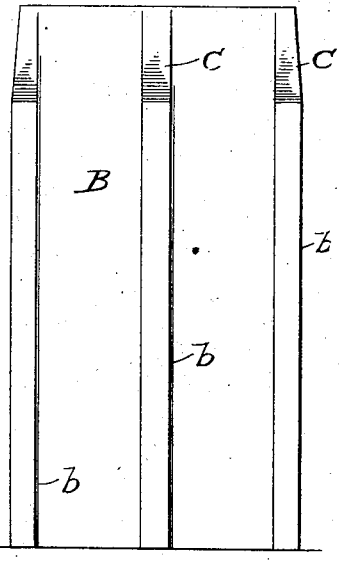



Fig. 4.

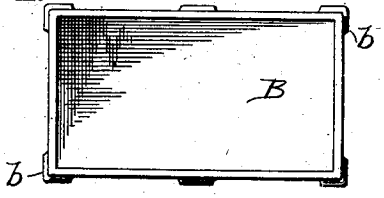
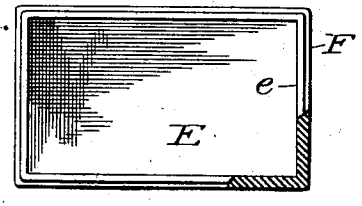



Fig. 5.




WITNESSES

James F. Duhamel

F. Hopkinson.

INVENTOR,

George Herbert Condict,

BY

Fraser and James.

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 729,550. Patented June 2, 1903.

# UNITED STATES PATENT OFFICE.

GEORGE HERBERT CONDICT, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO ELECTRIC VEHICLE COMPANY, OF JERSEY CITY, NEW JERSEY, AND NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## BATTERY-JAR.

SPECIFICATION forming part of Letters Patent No. 729,550, dated June 2, 1903.

Application filed December 16, 1898. Serial No. 699,425. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE HERBERT CONDICT, a citizen of the United States of America, and a resident of the city of New York, county of New York, State of New York, have invented certain new and useful Improvements in Battery-Jars, of which the following is a specification.

My invention relates to improvements in vessels or jars in which battery elements are contained.

The invention is applicable under various conditions; and it consists in constructing a sufficient number of the jars of the battery with side ribs or spacing devices, so that when a number of them are arranged close together in a group their ribs may touch to give mutual strength and support and their top edges will be so separated that should the liquid or electrolyte escape therefrom it will run down between the separated edges and sides instead of forming an electric circuit to the adjoining cell.

I will describe my invention in connection with a group of secondary battery elements placed in jars, which jars are grouped in a container or tray, which is adapted to be placed upon an electric car or vehicle to furnish the power to operate the same and which is therefore frequently moved about from the vehicle to the place of recharging, and vice versa. In such a group of batteries the jars containing the elements are arranged as close together as possible and so secured that they cannot move and will be mutually supporting, and my invention consists in a jar the walls of which are substantially parallel, but separated from each other and of uniform width and thickness except at their upper portion, where a part of each jar is either cut away or formed thinner, so as to entirely separate the upper portions of the jars, allowing any liquid which may escape from the jars to pass down into the space between them without producing a short circuit. The same result may be attained by contracting the tops of the jars, as will appear.

By the use of the term "unsealed" I mean that the battery-jars herein referred to are not hermetically sealed, so that it is possible for liquid to escape therefrom, especially when used on a moving vehicle.

In the accompanying drawings, Figure 1 is a top plan view of a tray of battery-jars. Fig. 2 is an end elevation, on an enlarged scale, showing three jars arranged close together. Fig. 3 is a side elevation of one of the jars. Fig. 4 is a top plan view of the jar shown in Fig. 3. Fig. 5 is a top plan view of the jar E shown in Fig. 2.

In said drawings, A is a tray or container in which are closely arranged three rows of battery-jars B. The jar B is for the purpose of car or vehicle propulsion desirably constructed of hard rubber or vulcanite, but for stationary uses may be of glass or any other suitable material. The jar B is relatively tall and narrow, with parallel sides, and is substantially of uniform size throughout. It is provided upon its exterior with a number of ribs *b*, which, being similarly placed on all the jars having ribs, come together in the tray and while giving additional strength form spaces between the jars. These side ribs or spacing devices, as stated in my preamble, when at the corners of the jars may be so made and disposed that the vertical strips of insulating material by separating the corners hold the entire sides of jars out of contact. Thus the groups of jars may be packed as tightly as desirable for mutual support in a vehicle or other portable tray, while the separator, being between the corners of adjacent jars, insures stability and insulation, as well as avoidance of pressure, on the yielding sides or any weak parts. With this form of jar the ribs may be cut away at their upper portions C, so that when grouped, as indicated, there will be a clear space D between the upper portions of the jars, into which any liquid escaping from the jars would fall instead of resting on their top edges and bridging across the upper portions of adjoining jars.

In the jars E, Figs. 2 and 5, the ribs *b* are dispensed with and a separation between the upper edges of a group of such jars is secured by having the upper portions thereof of thin-

ner material, the difference in thickness being upon the outside, as indicated at *e*, and extending upward from the point F. The jar E is therefore, as are the jars B, of substantially uniform internal dimensions from top to bottom.

According to the method in which the elements of the battery contained in the separate jars are electrically connected, in some instances there will be a much greater difference of potential between the sides of adjoining jars than between adjoining ends, and therefore where such will suffice the separation may be confined to those adjoining parts where the difference of potential between them is considerable. I therefore do not limit myself to separating the jars on all sides or on any particular sides, the amount and degree of separation being dictated by circumstances.

Having described my invention, what I claim is—

1. A rectangular battery-jar of uniform internal dimensions, constructed of insulating material and adapted to contain an electrolyte and unsealed, its upper portion being tapered upon the outside so as to reduce the thickness of, and separate the edges of said jar from an adjacent body or bodies to allow escaping liquid to recede therefrom.

2. A group of rectangular unsealed battery-jars constructed of insulating material of uniform internal dimension and of uniform external dimension from the bottom to near the tops thereof, whereby said jars are adapted to support and hold each other securely in position, the upper portions of the exterior of the jars for a distance materially greater than the thickness of the walls of the jar being of reduced dimension separating their upper edges to allow escaping liquid to recede therefrom.

3. A rectangular unsealed battery-jar constructed of insulating material and of uniform internal dimension, and adapted to closely fit and securely hold a number of plates, said jar being also of substantially uniform dimension upon its exterior for the greater part of the distance from its bottom up, the upper portion of the exterior of said jar for a distance several times the thickness of the walls of the jar being of reduced dimension, whereby the edges thereof are separated from an adjoining body so as to allow escaping liquid to recede therefrom.

4. A group of rectangular battery-jars constructed of insulating material of uniform internal dimensions and having substantially parallel exterior walls engaging adjacent jars for the greater part of their sides, the upper portions of the jars for a substantial distance downward from the upper edge being of reduced exterior dimension to such an extent as to separate said upper portions of adjacent jars for a distance equal to several times the thickness of the wall of the jar, whereby interstices are formed allowing escaping liquid to readily recede from their upper edges between the jars substantially as and for the purpose described.

5. A group of unsealed battery-jars constructed of insulating material, having substantially parallel walls and arranged in juxtaposition, and permanently separated by a plurality of substantially vertical ribs extending from said walls on the exterior of said jars from the bottom to near the tops of the jars thereby separating them to allow escaping liquid to recede from their edges.

6. A group of unsealed battery-jars having substantially parallel walls and arranged in juxtaposition, said jars being of insulating material and adapted to contain an electrolyte and means for preventing short-circuiting between the jars by accumulation of the electrolyte upon their adjacent upper edges, said means consisting in a plurality of substantially vertical ribs formed upon the exterior walls of the jars and extending from the bottom of said jars to near the top, forming spaces between the walls of the jars through which the escaping liquid may recede, and acting to hold a plurality of jars securely in position.

7. A group of unsealed battery-jars constructed of insulating material and arranged in juxtaposition, the adjacent sides of the said jars formed with exterior ribs integral with the jar, a non-contacting portion, and the upper portion of one of two adjacent jars of reduced exterior dimension.

8. A battery-jar constructed of insulating material and adapted to contain an electrolyte and unsealed, said jar formed of uniform interior dimension and with projecting ribs upon the sides of the jar extending from the bottom to near the top of said jar, the upper portions of said ribs tapering toward the body of the jar, whereby when the ribs are in contact with an adjoining body or bodies the jar will be separated therefrom.

9. A battery-jar constructed of substantially uniform internal dimensions and provided on each side with a plurality of external ribs or projections adapted to coact with adjacent jars or bodies, whereby the edges of the jar are separated to allow escaping liquid to recede.

10. A rectangular battery-jar having vertically substantially uniform interior walls and provided on the exterior of each side with a plurality of projections as and for the purpose described.

11. A battery-jar having substantially uniform interior walls, a plurality of projections of insulating material on the exterior of a plurality of walls in close proximity to the corners of the jar.

12. In combination in a group of mutually-supporting battery-jars, insulating material or spacing devices between the adjacent corners of a plurality of jars separating said

jars at their corners whereby the opposing sides as a whole are kept out of contact, said insulating material or separators extending vertically the major distance between the top and the bottom of the jar and extending laterally on the two walls of each jar adjacent to the corner.

Signed by me at New York, N. Y., this 15th day of December, 1898.

GEORGE HERBERT CONDICT.

Witnesses:
MACK TURK,
FRANKLAND JANNUS.