July 3, 1928. 1,675,321

C. AMBRUSTER

SECONDARY OR STORAGE BATTERY

Filed Nov. 23, 1925 2 Sheets-Sheet 1

FIG. 1.

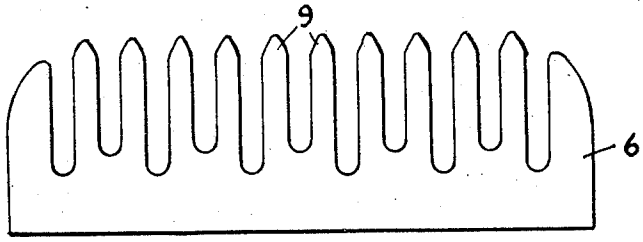


FIG. 2.

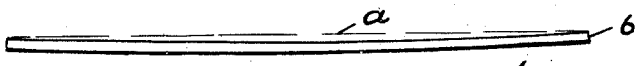


FIG. 3.

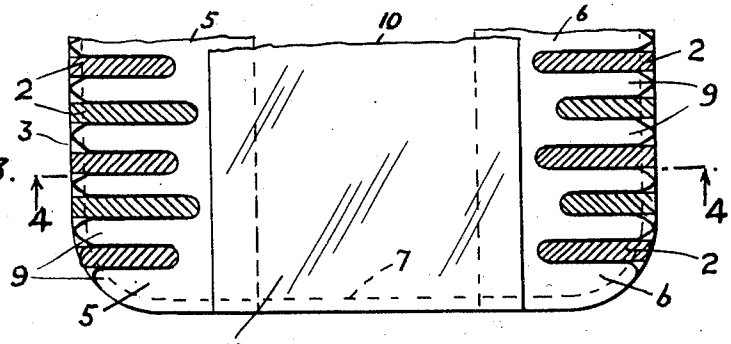


FIG. 4.

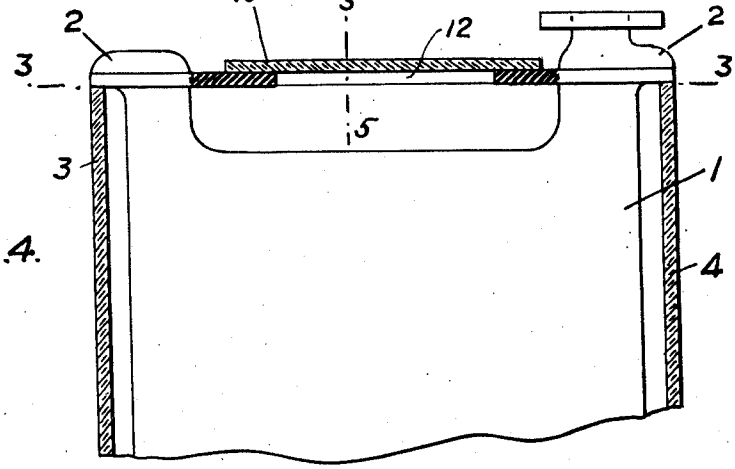
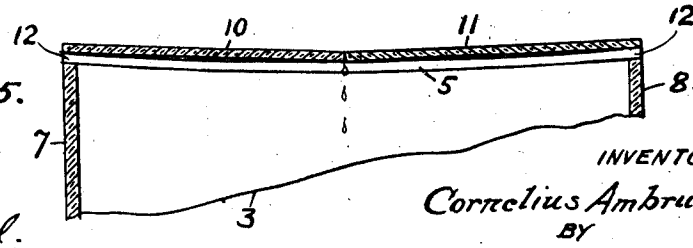


FIG. 5.



WITNESS:

INVENTOR

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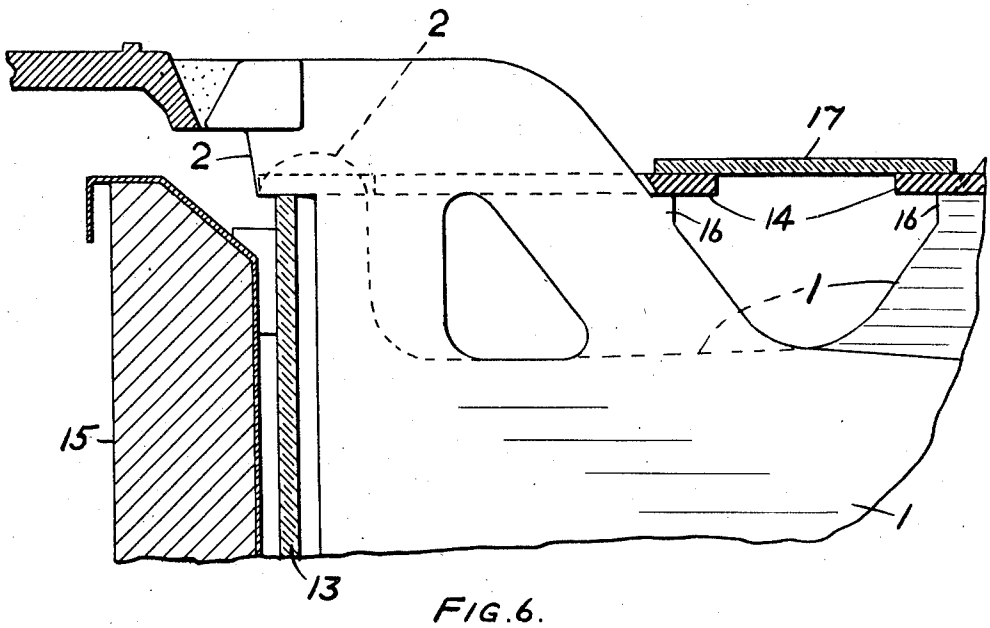


FIG. 6.

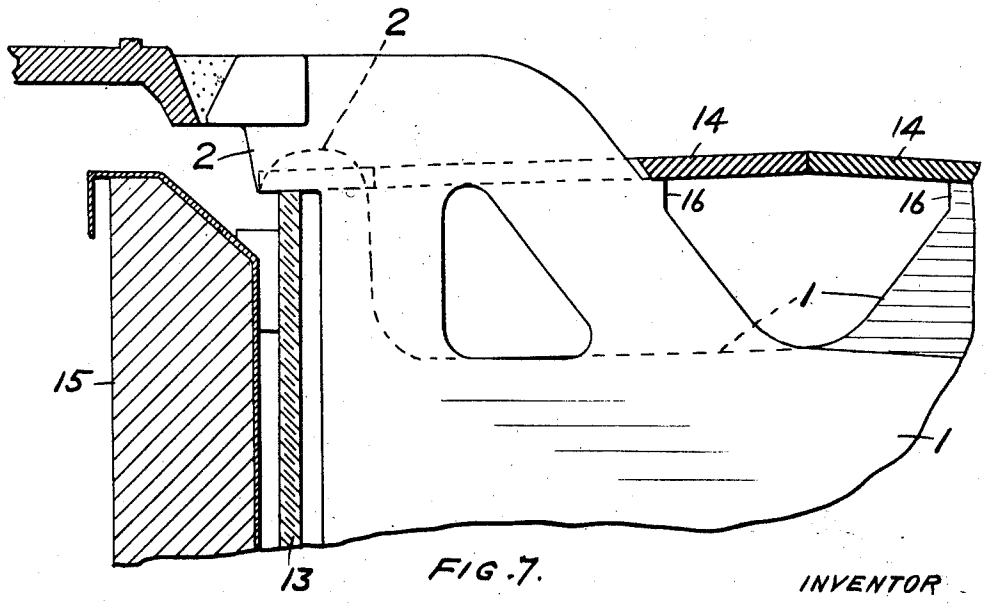


FIG. 7.

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Patented July 3, 1928. 1,675,321

UNITED STATES PATENT OFFICE.

CORNELIUS AMBRUSTER, OF ROSLYN, PENNSYLVANIA.

SECONDARY OR STORAGE BATTERY.

Application filed November 23, 1925. Serial No. 70,766.

The principal objects of the present invention are, first, to separate or keep separated and spaced apart the lugs by which the plates are supported or suspended from the tops of the walls provided by glass jars or other containers; second, to obviate or prevent spraying between the plate lugs; third, to provide for drainage; and fourth, to provide for venting.

Other objects of the invention will appear from the following description at the end of which the invention will be claimed.

In the following description reference will be made to the accompanying drawing forming part hereof and in which

Figs. 1 and 2 are a top and an edge view of the elements illustrated in Figs. 3 and 4.

Fig. 3 is a sectional view taken generally on the line 3—3 of Fig. 4.

Fig. 4 is a sectional view taken generally on the line 4—4 of Fig. 3.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 4 with the plate lugs and plates omitted for the sake of clearness.

Fig. 6 is a sectional view of so much of a cell as is necessary for showing the elements of Figs. 1 and 2 supported by inner walls provided in a tank according to a modification of the invention, and

Fig. 7 is a view similar to Fig. 6 illustrating another modification.

Referring more particularly to Figs. 1 to 4 of the drawings, the plates 1 are provided with lugs 2 arranged in spaced relation and resting on the tops of one pair of opposed walls 3 and 4 of a jar usually, but not in all cases essentially, of glass. 5 and 6 are a pair of combs of insulating material having their backs of concave form as indicated by reference to the dashed line *a* in Fig. 2. These combs are arranged to bridge the other pair of opposed walls 7 and 8 of the jar and their teeth 9 are arranged between the plate lugs 2 to fill the spaces between the lugs to oppose spraying or escape of spray and to separate or space the lugs to avoid short circuiting. 10 and 11 are a pair of plates as of glass covering or overlying the top of the jar and bridging the backs of the combs and held in inwardly sloping relation by the concave form of the backs of the combs to facilitate drainage of condensed vapor into the jar, Fig. 5. Between the tops of the walls 7 and 8 and the plates 10 and 11 and at the ends of the combs are openings 12, Figs. 4 and 5, that provide for venting the cell. As shown the ends of the teeth conform in contour with the contour of the top rim of the jar and when thus constructed a neat appearance is presented. Some of the spaces between the teeth are shown as deeper than others and that is done because some of the plate lugs 2 are wider than others.

In the modifications shown in Figs. 6 and 7 the pair of walls 13 that support the teeth of the combs 14 are spaced from the walls 15 of the tank or container and the backs of the combs are supported on feet 16 provided on the plates 1. The backs of the combs need not be concave. In Fig. 6 a cover is provided by the plate 17, supported by the backs of the combs, whereas in Fig. 7 the abutting backs of the combs provide a cover. Venting may be provided for at the ends of the tank from which the walls 13 are absent.

It will be obvious to those skilled in the art to which the invention relates that modifications may be made in details of construction and arrangement and in matters of mere form without departing from the spirit of the invention which is not limited to such matters or otherwise than the prior art and the appended claims may require.

I claim:

1. In a storage battery the combination of a jar, plates having lugs arranged in spaced relation and resting on the tops of one pair of the opposed walls of the jar, a pair of combs of insulating material having their backs of concave form and arranged to bridge the other pair of the opposed walls of the jar and having their teeth arranged between plate lugs to fill the spaces between the lugs and to separate the lugs, and a pair of glass plates covering the top of the jar and bridging the backs of the combs and held in inwardly sloping relation by the concave form of the backs of the combs.

2. In a storage battery the combination of a jar, plates having lugs arranged in spaced relation at and resting on the top of one pair of the opposed walls of the jar, a pair

of insulating combs resting on the top of the other pair of jar walls and having their teeth arranged in horizontal projection between the lugs, and a cover for the top of the jar supported upon the backs of the combs.

3. In a storage battery the combination of a plate supporting wall, plates having lugs supported by the top of said wall, and an insulating comb resting upon the top of said wall and having its teeth arranged horizontally and interposed between said lugs.

CORNELIUS AMBRUSTER.