



# UNITED STATES PATENT OFFICE.

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## STORAGE BATTERY.

No. 863,347.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed April 16, 1906. Serial No. 311,928.

*To all whom it may concern:*

Be it known that I, CHARLES BERST, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented  
5 a certain new and useful Improvement in Storage Batteries, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which forms a part of my specification.

My invention relates to electric storage batteries, of  
10 the character, for example, of those generally adaptable for use in fire and police alarm systems.

The object of my invention is to provide a storage battery provided with a top so formed as to prevent the escape of the gases and the bubbling over of the  
15 liquid during the process of charging the battery, and the formation of the coating on the outside of the upper edges of the battery cell consequent upon such bubbling over of the liquid in the battery.

A further object of my invention is to so form the inner surface of the covering of the battery as to provide  
20 a large extent of cooling surface, and to guide the condensed liquid from the cooling surface back into the main body of the battery.

My invention is simple and economical of construction, and may be used with any batteries of the type referred to.

In the drawings:—Figure 1 is a side elevation of a battery with my improvement attached, a part of the wall of the body being broken away at the upper edge  
30 to more clearly illustrate the top; Fig. 2 is a side elevation of the top; Fig. 3 is a plan view of the top looked at from below; and Fig. 4 is a section through Fig. 2 on the line 4—4 thereof.

A is the cell, B, B, the elements, and C the top of the  
35 battery. It will be understood of course, that these cells are arranged in series in the usual manner, with the positive element of one battery connected to the negative element of the next battery. This feature of the apparatus is as usual and forms no part of my invention.  
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The top C is of sufficient extent to have its edges projecting beyond the top of the cell, the top thus hav-

ing formed on the four sides an overlapping flange *c*. Below this flange the top extends vertically for a short distance with its four edges in contact with the inner  
45 walls of the cell, as seen at *c'*. It is then curved inward and downward away from the four planes of the inner walls of the cell, so as to form a depending curved flange, said flange having concave, curved sides *D* terminating in a more or less rounded edge *d*, and also  
50 concave, curved ends *D'*. Openings *E* are formed at each side of the top to permit of the extension through the top of the supporting ends of the elements.

From the description it will be apparent that when the cell is charged, and there occurs the resultant bubbling up of the liquid contained in the cell, the bubbling and upwardly spurting liquid will be caught on the concave sides and ends of the flange, depending  
55 from the top. The vapor will be condensed, and when condensed it, with such other liquid as by the violence of the bubbling has been carried up, will gradually travel along the concave sides of the flange down to the edge *d* thereof, and when sufficient has collected thereon, will drop back into the main body of the battery.  
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The advantages of my invention are apparent from the description.

Having thus described my invention, what I desire to claim as new and to cover by Letters Patent, is:—

1. In a storage battery, in combination with the cell, a top therefor having a flange resting upon and projecting  
70 beyond the upper edges of said cell, said top being provided with a depending flange having concave, curved sides and ends terminating in an edge extending in the direction of the length of the top.  
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2. In a storage battery, in combination with the cell, a top having a flange portion adapted to rest upon the upper edges of said cell, a vertical portion adapted to engage the inner walls of the upper edges of said cell, and a depending flange having concave, curved sides and ends terminating in an edge extending in the direction of the length of said top.  
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CHARLES BERST.

Witnesses:

JAY WELLINGTON HULL,  
H. B. BATES.