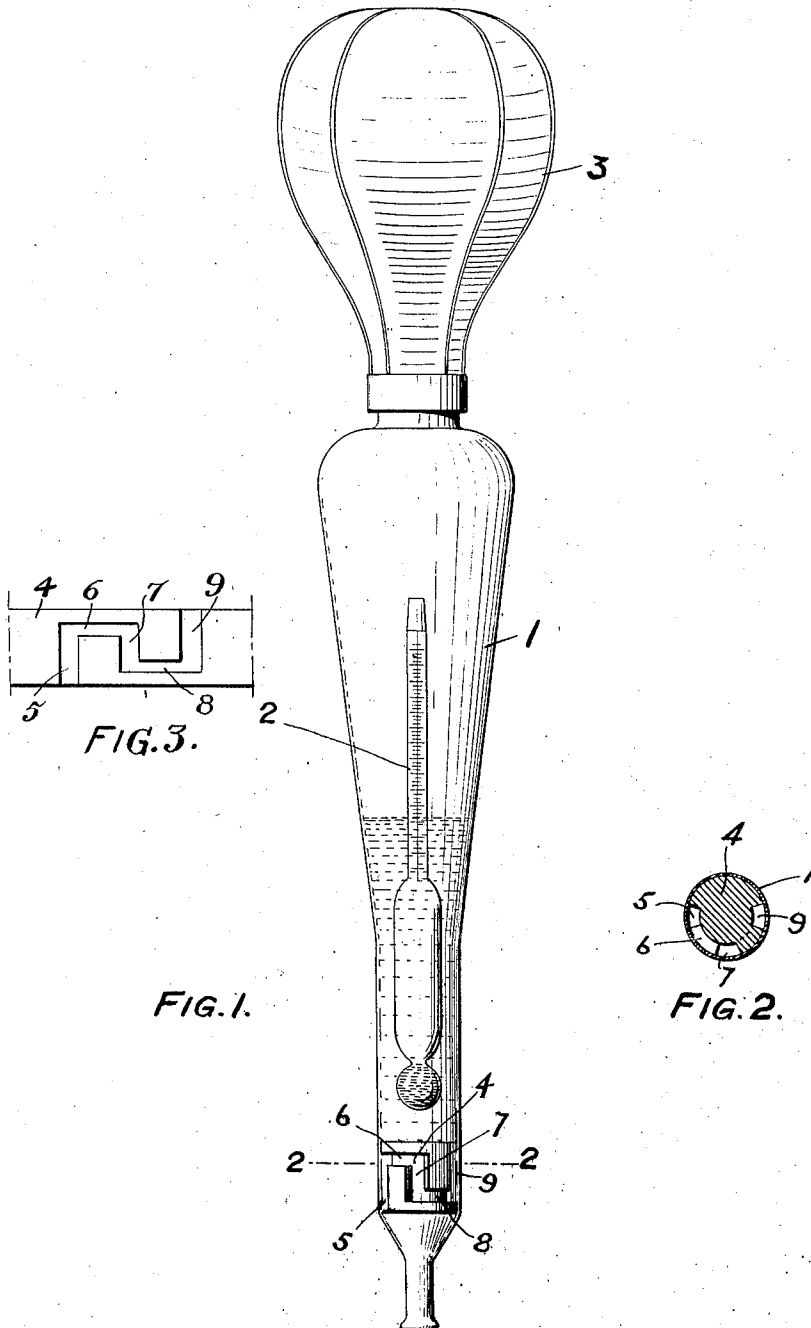


E. W. SMITH.
HYDROMETER FOR STORAGE BATTERIES.
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1,025,543.

Patented May 7, 1912.



WITNESSES:

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HYDROMETER FOR STORAGE BATTERIES.

1,025,543.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed June 23, 1910. Serial No. 568,450.

To all whom it may concern:

Be it known that I, EDWARD W. SMITH, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Hydrometers for Storage Batteries and the Like, of which the following is a specification.

10 In ascertaining the specific gravity of the electrolyte of storage batteries it is usual to employ a hydrometer mounted in a bulb having a compressible portion, so that the compressible portion can be compressed and
15 then released so as to draw the electrolyte up into the bulb. The hydrometer can then be conveniently read and for this purpose the electrolyte should be retained in the bulb.

20 The principal object of the present invention is to provide for retaining the electrolyte in the bulb while the hydrometer is read and at the same time to provide for expelling the electrolyte from the bulb after the
25 hydrometer has been read.

The invention will be claimed at the end hereof but will be first described in connection with the embodiment of it chosen for the sake of illustration in the accompanying drawings in which—

30 Figure 1, is a side view of a device embodying features of the invention, Fig. 2, is a sectional view taken on the line 2—2, of Fig. 1, and Fig. 3, is a development of the surface of the stopper showing the channels and openings therein.

In the drawings 1, is a bulb within which is arranged a hydrometer 2. At one end of the bulb there is a compressible portion 3, as of rubber, and near the other and open
40 end of the bulb there is a stopper 4. The stopper is provided with a tortuous passage consisting of a channel formed in its periphery. One portion 5 of the channel, extends
45 through one end face of the stopper. Another portion 6, extends peripherally along the stopper. Another portion 7, extends in the direction of the axis of the stopper. An-

other portion 8, extends peripherally of the stopper, and another portion 9, extends in the direction of the axis of the stopper through the other end face of the stopper. This channel is generally S-shaped and constitutes as it were a seal which tends to prevent the entrance of air when the bulb contains fluid, and by excluding air the contents of the bulb is retained while the hydrometer 2, is read. When the compressible portion 3, is compressed and released to draw electrolyte into the bulb or compressed
60 to expel it therefrom the tortuous channel permits of the passage of fluid but, as has been said, it operates as a seal to exclude air while fluid is retained in the bulb.

What I claim is:

1. A bulb provided at one end with a compressible portion and at its other and open end with a stopper having an S-shaped tortuous channel which constitutes a seal for excluding air, substantially as described. 70

2. In combination a bulb having an opening at one end and a compressible portion at the other end, a hydrometer arranged in the bulb, and a stopper arranged near the open end and provided with an S-shaped
75 tortuous passage which operates as an air seal, substantially as described.

3. The combination of a bulb having an open end and provided with a compressible portion, and a stopper arranged near the
80 open end and provided with two channels opening through the respective faces and with a channel disposed in axial direction and intermediate of the first-mentioned channels and having at its ends peripheral
85 channels which communicate with the first-mentioned channels, and all said channels constituting an S-shaped seal for excluding air, substantially as described.

In testimony whereof I have hereunto
90 signed my name.

EDWARD W. SMITH.

Witnesses:

BRUCE FORD,
CARROLL HOPE.