P. D. IVEY AND A. J. SALISBURY.

BATTERY CELL HYDROMETER.

APPLICATION FILED APR. 14, 1919.

1,354,255. Patented Sept. 28, 1920.

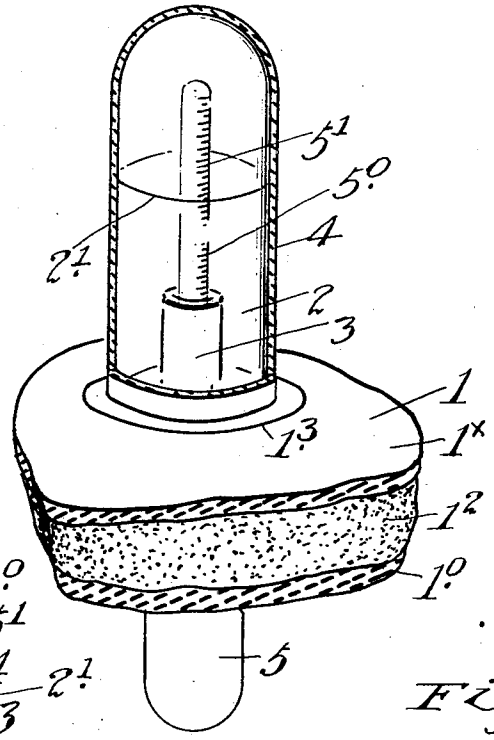


Fig. 1.

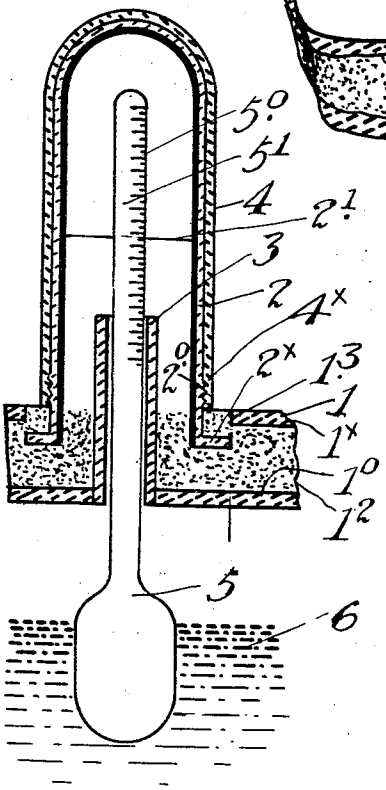


Fig. 2.

INVENTORS.

PERCY D. IVEY.

ALFRED. J. SALISBURY.

by Fellhustonlaughlin Attys.

UNITED STATES PATENT OFFICE.

PERCY DOUGLAS IVEY, OF GUELPH, ONTARIO, AND ALFRED JAMES SALISBURY, OF TORONTO, ONTARIO, CANADA, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE IVEY STORAGE BATTERIES, LIMITED, OF TORONTO, CANADA, A CORPORATION OF ONTARIO.

BATTERY-CELL HYDROMETER.

1,354,255. Specification of Letters Patent. **Patented Sept. 28, 1920.**

Application filed April 14, 1919. Serial No. 290,050.

To all whom it may concern:

Be it known that we, PERCY DOUGLAS IVEY, of the city of Guelph, in the county of Wellington, in the Province of Ontario, Canada, and ALFRED JAMES SALISBURY, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Battery-Cell Hydrometers, of which the following is the specification.

Our invention relates to improvements in battery cell hydrometers particularly adaptable to cells having opaque walls whereby the hydrometer readings will be always readily visible at all times and it consists essentially of the following arrangement and construction of parts as hereinafter more particularly explained.

Figure 1, is a perspective view of a portion of a cell top showing our hydrometer and hydrometer housing in position.

Fig. 2, is a vertical section through Fig. 1.

In the drawings like characters of reference indicate corresponding parts in the various figures.

1 indicates the cell top which is composed of an upper and lower layer of rubber 1^x and 1° respectively and an intermediate filling of asphaltum 1^2. An orifice 1^3 is formed in the upper layer of rubber 1^x. 2 indicates a glass dome provided at its lower end with an annular outwardly extending flange 2^x and a threaded exterior portion 2°. After the asphaltum has been poured on to the rubber layer 1° and the top $1'$ placed in position the lower portion of the glass dome is inserted in the hot asphaltum before it sets so as to be embedded therein.

3 indicates a rubber sleeve or guideway secured in the rubber 1° so as to extend upwardly through the asphaltum 1^2 into the dome 2. 4 indicates a dome like cover adapted to fit the glass dome 2 and is provided at its lower end with an internally threaded portion 4^x adapted to be screwed on to the threaded portion 2° of the dome 2. 5 indicates our hydrometer which is provided with a stem $5'$ which extends freely through the sleeve 3 and is provided at its upper end with a graduated portion 5° which co-acts with the hair line $2'$ marked upon the glass dome 2 to give the reading. The lower end of the hydrometer is supported by the liquid 6 within the battery cell and as the density of the liquid decreases the hydrometer falls, giving the required reading by the hair line $2'$.

When it is required to make a reading all that it is necessary to do is to remove the cover 4 when the hydrometer may be easily and immediately read.

What we claim as our invention is.

1. In a storage battery a transparent dome secured in one of the walls of the cell, a guide way covered thereby, extending through the wall and designed to receive hydrometer.

2. In a storage battery, the combination with the lid and guide-way extending therethrough, and a hydrometer extending up through the guide-way, of a transparent dome secured to the lid and extending over the guide-way and hydrometer, and a cover for the dome suitably secured in position thereon.

3. In a storage battery, the combination with the lid and guide-way extending therethrough, and a hydrometer extending up through the guide-way, of a transparent dome secured to the lid and extending over the guide-way and hydrometer, and externally threaded and a protecting cover fitting over the dome and internally threaded to fit the exterior thread on the dome.

PERCY DOUGLAS IVEY.
ALFRED JAMES SALISBURY.

Witnesses:
B. BOYD,
K. D. POYSON.