

No. 844,755.

PATENTED FEB. 19, 1907.

F. J. SCHALOW.
VENT VALVE FOR BATTERIES.
APPLICATION FILED SEPT. 28, 1906.

Fig. 1.

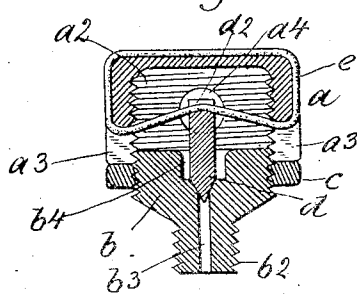


Fig. 2.

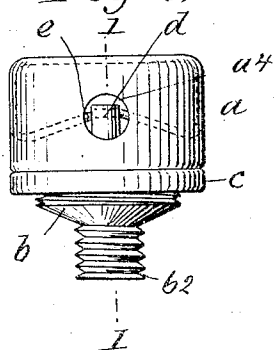


Fig. 3.

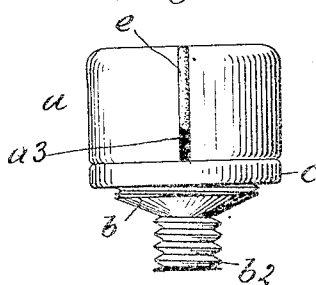
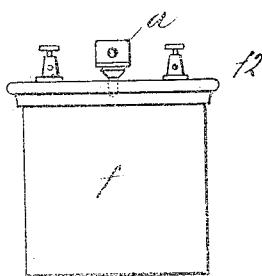


Fig. 4.



WITNESSES

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VENT-VALVE FOR BATTERIES.

No. 844,755.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed September 28, 1906. Serial No. 336,562.

To all whom it may concern:

Be it known that I, FRANK J. SCHALOW, a citizen of the United States, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Vent-Valves for Batteries, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to what are known as "wet batteries;" and the object thereof is to provide an improved vent-valve device for batteries of this class by means of which any accumulation of gas in the battery may be allowed to escape or be blown off without permitting the escape of any material amount of the battery liquid, a further object being to provide a vent-valve for batteries of this class which will operate in any position of the battery to prevent the escape of the liquid therefrom.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a central vertical section of my improved vent-valve device for batteries, the section being taken on the line 1 1 of Fig. 2; Fig. 2, a side view of the device at right angles to Fig. 1; Fig. 3, a side view at right angles to Fig. 2, and Fig. 4 a side view of a battery provided with my improved vent-valve device.

In the practice of my invention I provide a vent-valve device *a* of the class specified in the construction of which I employ a thimble-shaped cap *a*², which is screw-threaded internally, and into the bottom of which is screwed a screw-threaded plug *b*, provided with a threaded neck *b*². The plug *b* is provided with a set-nut *c*, and the opposite side portions of the cap *a*² are slotted vertically for a predetermined distance to form openings *a*³, and the opposite side portions of said cap at right angles to the openings *a*³ are provided with sight ports or passages *a*⁴.

The plug *b* is provided with a central bore *b*³, which passes therethrough and through the neck *b*² and the top end of which is enlarged to form a chamber *b*⁴, and I also provide a plug-valve *d*, one end of which is pointed and adapted to close the upper end

of the bore or passage *b*³ and the other or upper end of which is slotted transversely to form a recess *d*², and passed around the top portion of the cap *a*², and through the opposite side openings or recesses *a*³ is a rubber band *e*, adapted to be passed through the recess *d*² and to hold the plug-valve *d* seated, as shown in Fig. 1.

In Fig. 4 of the drawings I have shown at *f* an ordinary wet battery and in the cap or top *f*² of which is screwed my vent-valve device *a*; and if at any time there should be an accumulation of gas within the battery sufficiently great to raise the plug *d* against the operation of the rubber band *e* said gas will be blown off, as will be readily understood. It will also be apparent that the valve *d* is normally seated at all times, and the strength of the rubber band *e* may be such as to permit of the blowing off of the accumulated gases under any predetermined pressure, and the operation of this valve will be such as to prevent the escape of any considerable amount of the battery liquid when the gas is blown off. It will also be understood that the pressure of the rubber band *e* on the valve *d* may be regulated by regulating the position of the cap *a*² on the plug *b*, which may be accomplished by turning said cap in either direction, and the set-nut *c* serves to hold the cap *a*² in the desired position.

The chamber *b*⁴ at the upper end of the bore or passage *b*³ in the plug *b* serves, as will be understood, to prevent the valve *d* from being blown out of operative position, the movement of said valve being never sufficient to permit of the pointed end thereof of being blown out of the chamber *b*⁴.

This device will also prevent the escape of the battery liquid when the battery is laid on its side or inverted, and the tension of the rubber band *e* may be so regulated as to accomplish this result.

By making the band *e* of rubber it is prevented from being effected, corroded, or destroyed by the escaping gases or liquids, and a new band may be substituted for the old one whenever necessary.

The sight ports or passages *a*⁴ are intended to afford means through which the end of the plug-valve *d* may be seen in the operation of screwing on the cap *a*², so that the bottom transverse portion of the band *e* within the cap *a*² may be properly located in the notch or recess *d*² in the valve *d* in the operation of

screwing the cap onto the plug *b*, and these sight ports or passages also permit of the escape of the gases from the cap *a*², as do also the ports or passages *a*³.

5 Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A vent-valve for batteries comprising a thimble-shaped cap screw-threaded internally and provided in its opposite sides with recesses which extend to the bottom of the sides thereof, a threaded plug screwed into said cap and provided with a central longitudinal bore or passage, a plug-valve mounted in said cap longitudinally of the axis thereof and movable in said plug and adapted to close the bore thereof, and an elastic band passed around the top portion of said cap through the recesses in the sides thereof, and that part of which which passes through said cap being adapted to rest in a notch or recess in the top of the plug-valve.

2. A vent-valve for batteries comprising a thimble-shaped cap screw-threaded internally and provided in its opposite sides with recesses which extend to the bottom of the sides thereof, a threaded plug screwed into said cap and provided with a central longitudinal bore or passage, a plug-valve mounted in said cap longitudinally of the axis thereof and movable in said plug and adapted to close the bore thereof, and an elastic band passed around the top portion of said cap through the recesses in the sides thereof, and that part of which which passes through said cap being adapted to rest in a notch or recess in the top of the plug-valve, said cap being also provided with sight ports or passages.

3. A vent-valve for batteries comprising a thimble-shaped cap screw-threaded internally and provided in its opposite sides with recesses which extend to the bottom of the sides thereof, a threaded plug screwed into said cap and provided with a central longitudinal bore or passage, a plug-valve mounted in said cap longitudinally of the axis thereof and movable in said plug and adapted to close the bore thereof, and an elastic band passed around the top portion of said cap

through the recesses in the sides thereof, and that part of which which passes through said cap being adapted to rest in a notch or recess in the top of the plug-valve, said cap being also provided with sight ports or passages, and said plug with a jam-nut.

4. A battery provided with a vent-valve device comprising a thimble-shaped cap screw-threaded internally and provided in its opposite sides with vertically-arranged recesses which extend to the bottom of the sides thereof, a threaded plug screwed into said cap and provided with a longitudinal bore or passage and with means whereby the valve device may be secured to the battery, a plug-valve mounted in the cap and in the end of said screw-threaded plug and adapted to close the bore or passage therethrough and movable longitudinally of the axis of said plug, and an elastic band passed around the top portion of the cap and through the recesses in the opposite sides thereof, and that part of which within the cap is adapted to rest in a notch or recess in the top of the plug-valve.

5. A battery provided with a vent-valve device comprising a thimble-shaped cap screw-threaded internally and provided in its opposite sides with openings, a threaded plug screwed into said cap and provided with a longitudinal bore or passage, and with means whereby the valve device may be secured to the battery, a plug-valve mounted in the cap and one end of which normally rests in the end of said bore or passage and is adapted to close the same, said plug-valve being movable longitudinally of the axis of said plug and a non-corrosive tensional device for holding said plug-valve normally seated so as to close said bore or passage, said plug-valve being adapted to be forced from its seat by pressure in the battery.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 27th day of September, 1906.

FRANK J. SCHALOW.

Witnesses:

C. E. MULREANY,
C. J. KLEIN.