A. WOODEN.

METAL HOT WATER BOTTLE.

APPLICATION FILED DEC. 6, 1915.

1,178,897. Patented Apr. 11, 1916.

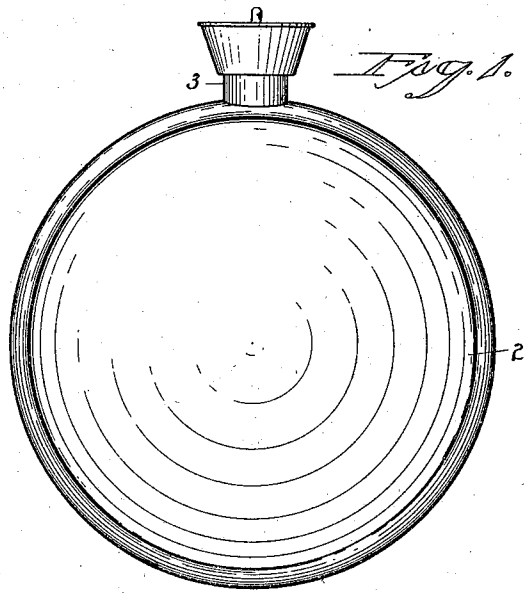


Fig. 1.

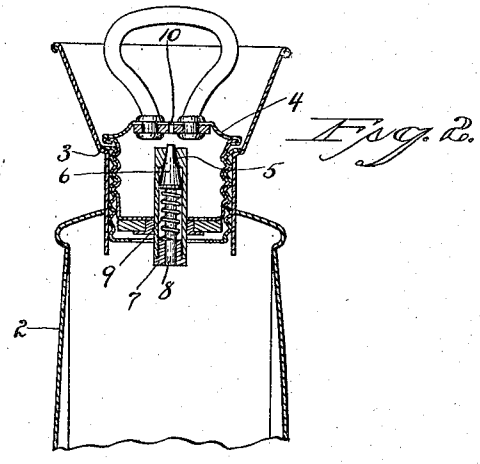


Fig. 2.

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UNITED STATES PATENT OFFICE.

ALBERT WOODEN, OF WATERBURY, CONNECTICUT, ASSIGNOR TO WATERBURY MFG. CO., OF WATERBURY, CONNECTICUT, A CORPORATION.

METAL HOT-WATER BOTTLE.

1,178,897. Specification of Letters Patent. **Patented Apr. 11, 1916.**

Application filed December 6, 1915. Serial No. 65,231.

To all whom it may concern:

Be it known that I, ALBERT WOODEN, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Metal Hot-Water Bottles; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same and which said drawings constitute part of this application, and represent, in—

Figure 1 a side view of a metal hot water bottle constructed in accordance with my invention. Fig. 2 a transverse sectional view through the filling opening and my improved stopper therefor.

This invention relates to an improvement in metal hot water bottles, and particularly to stoppers therefor, the object of the invention being to provide a stopper with a valve, whereby as the bottle cools, air may be admitted into the bottle; and the invention consists in the construction hereinafter described and particularly recited in the claim.

The bottle 2 is of any approved design, and formed from metal with the usual neck 3 which is adapted to receive the screw stopper 4. In the usual construction of metal hot water bottles, the bottles must be sufficiently rigid to withstand the pressure of the vacuum formed by the cooling of the water, or as is sometimes the case, springs must be placed inside the water bottle to prevent the sides from collapsing. In my construction I provide the stopper with a valve seat 5 opening through the bottom of the stopper, and in this valve seat 5 I place a tapered valve 6 which is maintained in place by a plug 7 through which the stem 8 of the valve freely passes and between the plug and the head of the valve is a spring 9 the tendency of which is to hold the valve in its seat. Somewhere in the upper part of the stopper I provide a small air hole 10. My improved plug is inserted into the bottle in the usual way and forms a water-tight closure therefor. As the water in the bottle cools, the vacuum in the bottle will draw the valve away from its seat to admit sufficient air to overcome the vacuum formed in the bottle, the pressure of the spring 9 being sufficient, however, to close the valve when the pressure inside the bottle has been equalized. By thus providing the stopper with a valve I am enabled to construct the bottle from comparatively light metal and avoid the necessity of placing any springs or other means inside the bottle to prevent collapsing.

I claim:—

A hollow metal stopper for metal hot water bottles formed in its top with an air hole, a valve tube extending through the bottom of the stopper in which it is secured and extending upward inside the stopper and terminating below the top of the stopper, a valve-seat at the upper end of said tube, a valve located in said valve tube to co-act with said seat and provided with a valve-stem, a plug in the lower end of said tube, said plug formed with an opening through which the valve stem passes, and a spring around the stem between the valve and plug normally forcing the said valve upward into its seat.

ALBERT WOODEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."