

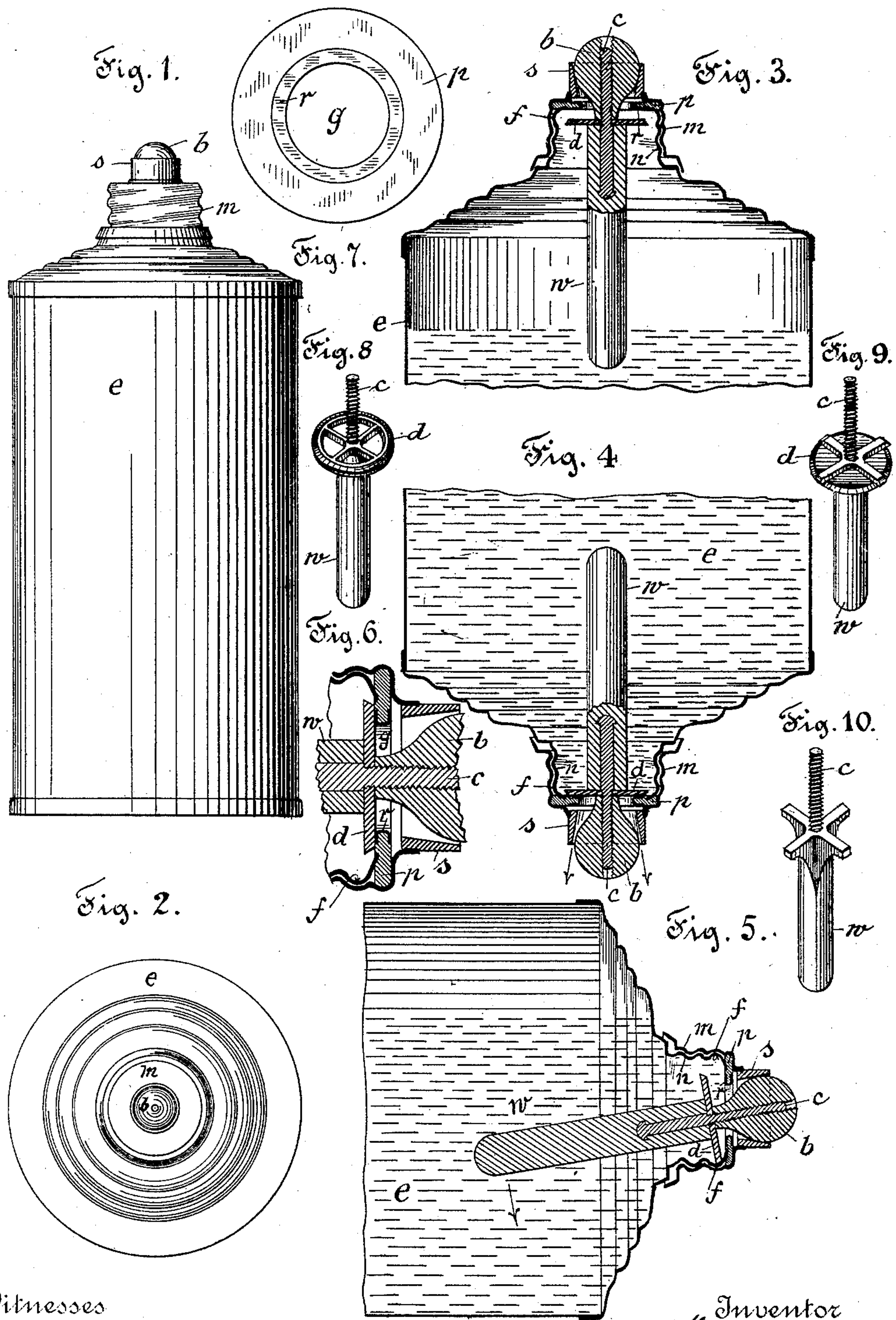
(No Model.)

H. JOHNSON.

AUTOMATICALLY CLOSING CAN, BOTTLE, &c.

No. 475,775.

Patented May 31, 1892.



Witnesses
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HENRY JOHNSON, OF NEW YORK, N. Y.

AUTOMATICALLY-CLOSING CAN, BOTTLE, &c.

SPECIFICATION forming part of Letters Patent No. 475,775, dated May 31, 1892.

Application filed July 6, 1891. Serial No. 398,562. (No model.)

To all whom it may concern:

Be it known that I, HENRY JOHNSON, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Improvement in Automatically-Closing Cans, Bottles, &c., (for which I have obtained no foreign Letters Patent whatever,) of which the following is a specification.

My invention relates to improvements in automatically-closing cans in which it is desired to use the benzine or other fluid contents of the can economically, safely, and under control at will.

The objects of my improvement are, first, to provide means for locking the cork or stopper in its seat by the use of a weight provided with a continuous fulcrum that will cause the weight to act upon the stopper at any or all points or directions under and around the outlet of the can to close it instantly and directly whenever it is tilted or rolled and before the fluid can escape; second, to provide means for controlling the flow of the fluid by the use of a whole or partial valve with a valve-seat and weight that will act automatically to limit the outflow of the fluid when the can is reversed and held bottom side up, but will nevertheless permit the escape of as much fluid as may be desired by the lifting of the can and suddenly lowering it, and, third, to provide a removable valve and valve-seat, in combination with the washer or packing in the top of the can, independent of the cork or stopper seat, thereby avoiding the use of a tube extending down into the can and permitting the entire contents of the can to be emptied and used by passing through the stopper-seat and out of the can. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation or outside view of the can. Fig. 2 is a top view of the same. Figs. 3, 4, and 5 are sectional views of the same, the first upright, the next reversed, and the last, Fig. 5, showing the relations of the parts adjacent to the outlet when the can is laid on its side. Fig. 6 is an enlarged sectional view of the operating parts of and in the neck of the can. Fig. 7 is a plan view of the washer, and Figs. 8, 9, and 10 are per-

spective views of the weight and whole or partial valve.

Similar letters relate to similar parts throughout the several views.

The body of the can *e* is made in any usual way—of course with bottom and top, the latter being provided with a screw-nipple *n*, to which is fitted the screw-cap *m*. The screw-cap *m* is provided with a ball or cork seat or neck *s*, fitted to receive tightly the ball or cork *b*, which corresponds to the shape of the inner surface of its seat *s*. The ball or cork *b* is preferably secured to an extension *c* of the weight *w* by male and female screw-threads and is practically an extension of the same. The weight *w* is provided on its upper end and neck with a collar, flange, or projecting arms *d*, which may be solid and continuous around its edge, extending on all sides beyond or outside of the ball-seat *s*, as shown in Figs. 3, 4, 5, and 6, or it may be cut away on its circumference, as shown in Fig. 10, or perforated, as shown in Fig. 8, or provided with radial supports on the under side, as shown in Fig. 9. Between the collar or flange *d* and the inner top edge of the screw-cap *m* and between the top edge of the screw-nipple and the screw-cap I place a washer *p*, preferably of leather, the inner edge of which is provided with an eyelet *r*, extending beyond the edge on both sides of the valve around the hole *g* through the center of the same. The collar or arms *d* furnish, practically, axes for the weight when the can is tilted, which finds a fulcrum *f* on all sides whichever way the can is tilted, and thereby draws the stopper *b* into its seat *s*. It also in all its forms affords a sufficient valve to limit the escape of fluid.

The operation of the can is simple. When the body of the can has been properly filled, the screw-cap *m*, carrying the weight, the ball or cork, and its seat, with the other attached parts, is screwed in place until the upper part or neck of the can itself bears upon the washer *p*, so as to prevent the escape of fluid between the neck of the can and the screw-cap. The parts will then be found in the positions shown in Fig. 3, in which the stopper is held in place by the weight *w* holding it in its seat by direct downward action, since it is located concentrically with the ball *b* and ball-valve seat

s. When, however, the can is thrown upon its side, as represented in part-sectional view, Fig. 5, the weight w not only still continues to hold the ball-valve in its seat by its weight acting directly, but to lock it there by its leverage action, since the collar or valve d rests upon a fulcrum between the ball and the weight, and does so at whatever point or in whatever direction the can may be moved to lay it on its side or by rolling it thereafter. When, however, the can is reversed and held bottom side up, as represented in part-sectional view, Fig. 4, the ball-valve b will be pressed out of or away from its seat s , thereby leaving room or space for the escape of the fluid contents of the can. The valve or collar d is represented in Fig. 4 as resting upon its seat in or on the washer p , and in that position the further escape of the fluid will be automatically prevented thereby, and, aided by the vacuum formed in the can by even a limited escape of the fluid, even the open forms of collar or valve will limit the escape of fluid from the can; but in reversing the can from the upright position shown in Fig. 3 to that shown in Fig. 4 the parts must necessarily assume the relations shown in Fig. 5, and in those relations it is evident that the fluid contents of the can will be free to pass beyond the collar or valve d and its seat and reach the ball-valve and its seat, and it is also evident that as the can is still further tilted from the position shown in Fig. 5 to that shown in Fig. 4 the fluid contents of the can will have sufficient possession of the two outlets or valve-seats to allow of the escape of a limited amount of the fluid contents of the can before the collar or valve d can reach its seat and prevent the further escape of the fluid. In fact, since the weight w is in part supported and held somewhat in the position shown in Fig. 5 by the fluid contents of the can it will not assume the upright position shown in Fig. 4 immediately or with sufficient quickness to prevent the outflow of the fluid. Indeed, the weight is sufficiently long to hold the valve or collar d away from its seat until the can is brought very near to a vertical position. It is further evident that when the can and its parts are in the positions shown in Fig. 4 slight downward and upward movements of the can in the hand will raise the weight w , lift the flange, valve, or arms d from the seat, and thereby allow of the escape of fluid as often as that action is repeated,

the outflow being stopped presently when the can is held in that position.

From the foregoing description it will be made evident that the can is opened and closed automatically by the weight w in both directions—that is, in allowing and preventing the escape of the contents of the can—and the weight being concentric with the ball, its socket, and its circular bearing or fulcrum the action is equally prompt and effective in whatever direction the can may be moved.

The weight w may preferably be made of lead or other metal, so as to be sufficiently heavy to operate when immersed in a fluid.

I claim as my invention—

1. In automatically-closing cans, a can provided with an outlet or mouth having a stopper-seat at its outer end, in combination with two rigidly-connected stoppers arranged to co-operate one with the stopper-seat in the outer end of the mouth and the other with the inner end of the mouth and with a weighted lever extension rigidly connected with the stoppers, extending within the can, and co-operating with the stoppers, as and for the purpose set forth.

2. In automatically-closing cans, a can provided with a screw-cap having an outlet or mouth with a stopper-seat at its outer end and a washer-packing between the top of the can proper and its screw-cap and with which the screw-cap makes sealing contact, in combination with two rigidly-connected stoppers arranged to co-operate one with the stopper-seat in the outer end of the outlet or mouth and the other with the washer-packing at the inner end of the outlet or mouth and with a weighted lever extension rigidly connected with the stoppers, extending within the can, and co-operating with the stoppers, as and for the purpose set forth.

3. In automatically-closing cans, a can provided with an outlet or mouth having a stopper-seat at its outer end, in combination with two rigidly-connected stoppers provided with a weighted lever extension rigidly connected therewith, extending within the can, and co-operating with the stoppers in their coaction, as shown and described, with the outer and inner ends of the outlet or mouth, for the purposes set forth.

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Witnesses:

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