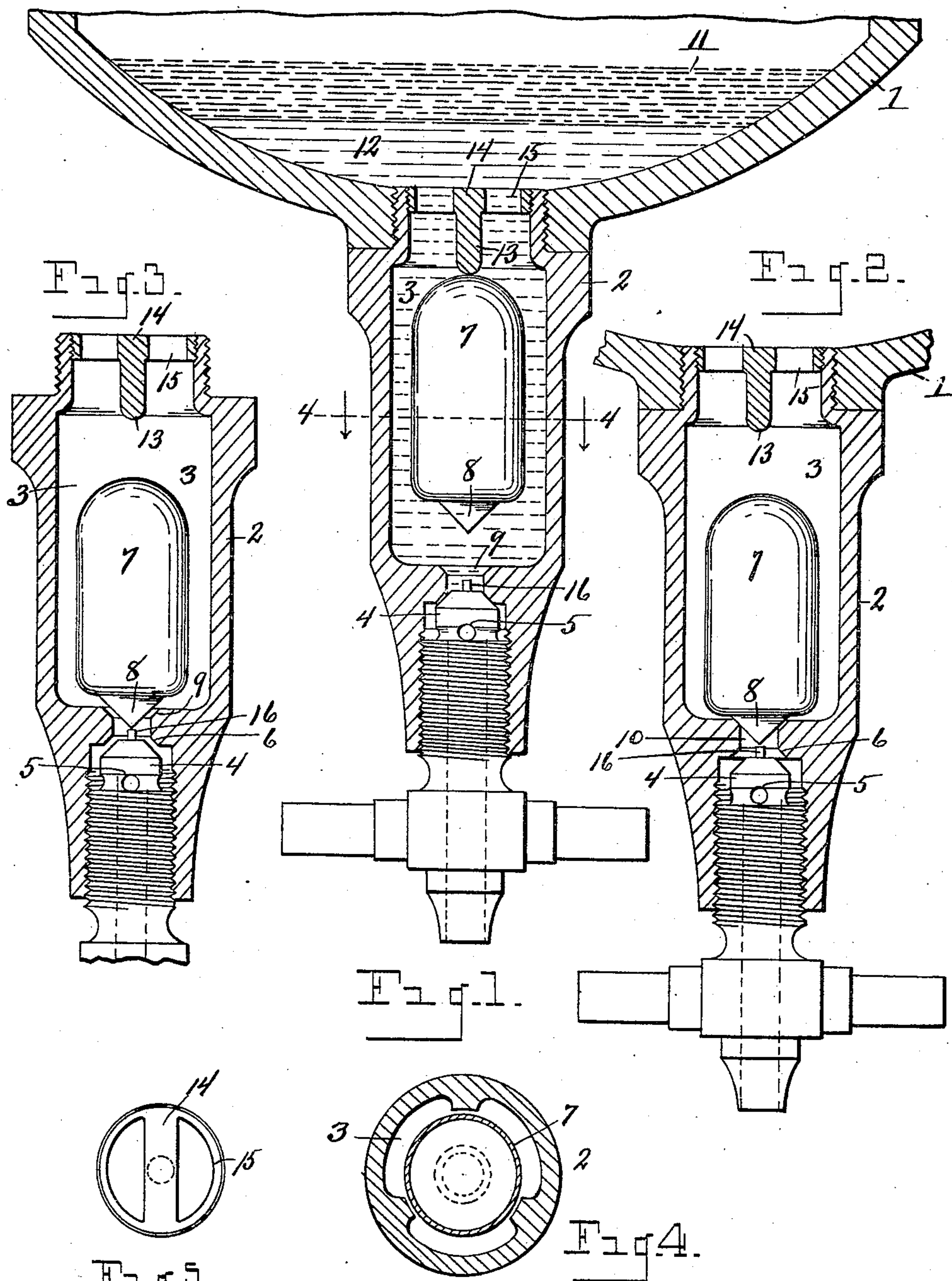


No. 855,932.

PATENTED JUNE 4, 1907.

W. E. BRYANT.  
FLOAT VALVE FOR DRAIN COCK PLUGS.

APPLICATION FILED OCT. 22, 1906.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

WILLIAM E. BRYANT, OF DETROIT, MICHIGAN, ASSIGNOR TO MICHIGAN LUBRICATOR CO., OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

## FLOAT-VALVE FOR DRAIN-COCK PLUGS.

No. 855,932.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed October 22, 1906. Serial No. 339,962.

*To all whom it may concern:*

Be it known that I, WILLIAM E. BRYANT, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Float-Valves for Drain-Cock Plugs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable other skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to hydrostatic lubricators, and especially to means for preventing the escape of oil from the reservoir upon the draining of the water therefrom; being a different arrangement for accomplishing the results attained by the structure described and shown in my co-pending application Serial No. 321,101, as will be hereinafter more fully set forth and pointed out in the claims.

The object of the invention is to provide means for automatically preventing the escape of oil from the reservoir or body of the lubricator upon the draining of the water of condensation therefrom.

The above object is attained by the structure illustrated in the accompanying drawings, in which:—

Figure 1 is a fragmentary view in vertical section through the bottom of the lubricator reservoir and the drain cock plug, showing the float valve therein which permits of the drawing off of the water, but prevents the passage of the oil through the drain cock. Fig. 2 is a similar view showing the valve seated as when preventing the passage of oil after the draining of the water from the reservoir. Fig. 3 is a similar view showing how the valve may be partially held from its seat and the drain cock partially opened to permit of the blowing out of the lubricator reservoir by steam when desired. Fig. 4 is a horizontal section as on line 4—4 of Fig. 1. Fig. 5 is a plan view of the ring which screws into the upper end of the drain plug and which is provided with a cross bar having a depending lug which retains the float valve

in place when the chamber of the drain plug is filled with water.

Referring to the characters of reference, 1 designates the reservoir of a lubricator having a tapped aperture in the bottom thereof into which is screwed the drain plug 2, said plug having a chamber 3 within the body thereof, and a drain cock 4 which screws into the lower end of said plug, said cock being hollow, as shown by dotted lines, and having transverse apertures 5 communicating with the interior thereof; the upper end of said cock seats at 6 to close the opening through the drain plug and to prevent the escape of the contents of the reservoir.

Within the chamber 3 of the drain plug is a hollow valve 7 of such specific gravity as to render it buoyant in water, but which will not float in liquids of lesser density, such as oil. Upon the lower end of said valve is a conical formation 8 adapted to seat at 9 to close the opening 10, which connects the chamber 3 with the drain cock.

With the parts in their normal position, as shown in Fig. 1, and with the reservoir filled with oil 11, the entrance of water of condensation 12 from the condenser, not shown, will displace the oil at the bottom of the reservoir, and cause it to flow therefrom through a suitable oil passage to the parts to be lubricated, in a manner not shown, but well understood in the art. The water which displaces the oil in the lubricator reservoir, fills the chamber 3 of the drain plug and causes the valve 7 to float to the position shown in Fig. 1, said valve being prevented passing from said chamber by the depending lug 13 of the cross bar 14 of the ring 15, which screws into the upper end of the drain plug, in which position the parts remain while the lubricator is in operation.

When the oil shall have become exhausted from the reservoir and it is necessary to draw off the water to permit the reservoir to be re-filled, the cock 4 is opened, as shown in Fig. 2, permitting the water 12 to pass from the chamber 3 and from the body of the reservoir through said cock until it is all discharged. As the last of the water is withdrawn, the oil remaining in the reservoir follows the water into the chamber 3 and sur-



rounds the valve 7. Because of the difference in the specific gravity between the oil and water, the valve 7 will sink when immersed in the oil, causing it to seat in and close the aperture 10, thereby preventing the escape of any of the oil through the drain cock. After the extraction of the water from the reservoir, the drain cock is closed and said reservoir re-filled with oil when the lubricator is in condition for further use. It will be understood that as the water of condensation flows into the reservoir, it displaces the oil from the lower levels first, causing the valve 7 to float from its seat to the position shown in Fig. 1, when the chamber 3 shall have become filled with water, in which position said valve remains until the water is again drawn off. Should it be desired to blow out the reservoir for the purpose of thoroughly cleaning it, the plug cock valve is partially opened, as shown in Fig. 3, in which position the conical point 8 on the valve 7 rests upon the pin 16 projecting from the upper end of the plug cock 4, thereby holding said valve off its seat and affording a free passage way from the reservoir through the chamber 3 and through the drain cock, permitting a jet of steam to be passed through the reservoir when the cleansing of the reservoir is found necessary.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with a reservoir

adapted to contain liquids of different specific gravity and having a drain passage leading therefrom, of a float valve adapted to close said drain passage when immersed in the lighter liquid. 35

2. The combination with a reservoir adapted to contain oil and water in superimposed relation, and having a discharge opening leading therefrom, of a float valve in said discharge opening buoyant in water but precipitable in oil, said valve automatically seating to close the discharge opening when immersed in oil. 40

3. The combination with a reservoir adapted to contain oil and water in superimposed relation and having a discharge opening leading therefrom, of a float valve in said discharge opening adapted to seat therein to prevent an outward flow of fluid there-through, said valve being buoyant in water but precipitable in oil. 45

4. The combination with a reservoir, of a drain plug communicating therewith, having a valve chamber therein, and having a drain opening leading therefrom, a float valve in said chamber adapted to seat and close said opening, and a drain cock in said plug communicating with said chamber. 50

In testimony whereof, I sign this specification in the presence of two witnesses.

WILLIAM E. BRYANT.

Witnesses:

E. S. WHEELER,  
I. G. HOWLETT.