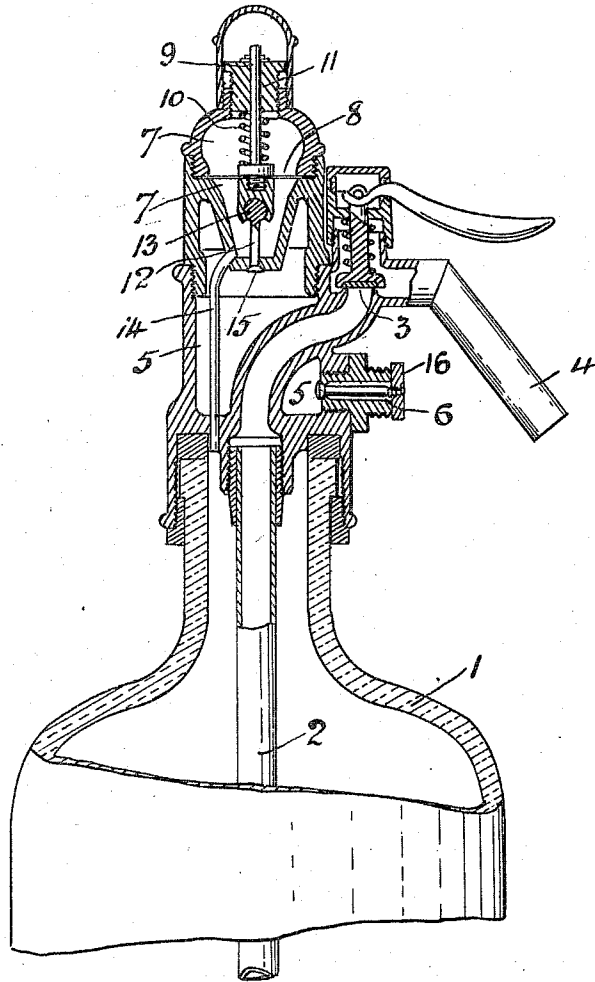


W. R. TATE AND A. V. PARK,
DISCHARGE OF LIQUIDS FROM VESSELS OR CONTAINERS.
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1,305,754.

Patented June 3, 1919.



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DISCHARGE OF LIQUIDS FROM VESSELS OR CONTAINERS.

1,305,754.

Specification of Letters Patent.

Patented June 3, 1919.

Application filed February 14, 1917. Serial No 148,580.

To all whom it may concern:

Be it known that we, WILLIAM RAMAGE TATE, a citizen of the United States of America, and ALBERT VICTOR PARK, a subject of the King of Great Britain, residing at 1 Myrtle street, Rippon Lea, in the State of Victoria, Australia, and Ambert, Lyster-ville avenue, Malvern, in the State aforesaid, respectively, have invented certain new and useful Improvements Relating to the Discharge of Liquids from Vessels or Containers, of which the following is a specification.

This invention has reference to means for discharging liquids from vessels containing beverages so that a uniform pressure shall be maintained in the same until all or nearly all the liquid contents are withdrawn.

The invention is applicable to soda water siphons or other beverage fountains which at present are charged with a certain pressure that continues to fall as the contents are drawn off. Thus, what remains of the liquid becomes flatter and flatter until the last few glassfuls are unpalatable.

It is to obviate this that our invention has been devised, according to which we use apparatus, on a siphon or fountain, which is adapted to contain an equalizing valve and a gas pressure reservoir, the gas in which is led through the valve to the fountain body simultaneously with the withdrawal of its liquid contents. The valve may be operable through a diaphragm and means are provided for setting the diaphragm to act at any pre-arranged or desired pressures.

But in order to fully understand the invention, reference is made to the accompanying drawing, that in this instance illustrates the invention applied to a so-called soda water siphon or fountain. In the drawing 1 is the fountain body shown broken off below the shoulder, and having the discharge pipe 2 that is connected into the discharge valve 3 and spout 4 in the usual way.

The apparatus contains two main compartments, namely, the gas reservoir 5 and the valve chamber 7. Ingress to 5 is through the retention valve 6 by which the reservoir is charged with gas under pressure from any convenient and suitable source. The valve chamber 7 is divided

into two approximately equal parts by the diaphragm 8, preferably composed of thin sheet copper. The diaphragm is attached to a spindle 9 which supports the compression spring 10 that is regulatable by the nut 11 that is screwed into the wall of the chamber and rotates about the spindle 9.

In the lower half of the valve chamber 7 is the valve stem 12 that is connected to the diaphragm preferably through a ball joint 13; the lower part of the stem projects through the chamber 7 into the chamber 5, and is fashioned to seat in the wall of chamber 7.

A port-way 14 communicates between the body of receptacle 1 and the said lower part of the chamber 7 so that the pressure upon the diaphragm in such lower part, and the part 1, is uniform. This port-way is, for sake of clearness, shown in the drawing coming through the gas chamber 5, but in practice it will pass through the metal walls of the apparatus which at that part will be enlarged for the purpose. The pressure of the spring 10 upon the diaphragm is about equal to the desired pressure in the siphon or receptacle. The diaphragm is therefore normally horizontal and while in that position the valve 15 will remain closed by the pressure upward against it from the fountain body, 1, it being understood that the latter has been charged with the required liquid under pressure.

In practice, the pressure upward should be slightly in excess of the spring pressure downward, in order to keep the valve closed. When, however, the pressure in 1 falls through withdrawal of its liquid contents, the pressure in the valve chamber will fall likewise, and the diaphragm be depressed by the spring 10; this will cause the valve 15 to open and admit gas from the reservoir 5, the pressure from which restores the diaphragm to its normal position, and closes the valve again. Thus, the cycle is repeated until the fountain has been emptied, when it should be removed and replaced by another, fully charged, at a depot or other suitable place.

The usual means are provided for removing the metal fountain head containing our apparatus so that the fountain may be refilled. After this has been done the chamber 5 can be re-charged by removing

the nut 16 of the retention valve 6 and connecting up to a gas cylinder or other source of pressure.

While we have shown our invention as applied to a domestic soda water fountain, we wish it to be understood that it may be used on larger containers for beverages for the purposes of maintaining a uniform pressure and aeration therein until the liquid contents are exhausted.

Having now described our invention, what we claim as new and desire to secure by Letters Patent is—

In a vessel for discharging liquid under pressure, the combination of a bottle having a neck, a fitting fixed to the neck of the bottle and having a pressure gas chamber arranged directly above the bottle neck, means to permit gas to be introduced into said chamber, a conduit passing through said chamber and having one of its ends extending into the bottle and its other end extended downwardly on the exterior of the chamber to form a spout for discharging

the contents of the bottle, a manually controlled valve arranged to the conduit, a valve chamber arranged directly above the gas chamber and having a port placing the valve chamber in communication with the gas chamber, a pipe extending from the valve chamber through the gas chamber and into the bottle neck for introducing pressure gas to the bottle, a spring pressed diaphragm arranged in the valve chamber, and a valve head in operative connection with said diaphragm and normally closing said port, said diaphragm being adapted, when the pressure in the bottle falls, to press the valve head downwardly and open the port to permit pressure gas to pass from the gas chamber to said valve chamber.

In testimony whereof we have affixed our signatures in presence of a witness.

WILLIAM RAMAGE TATE.
ALBERT VICTOR PARK.

Witness:

R. N. NEWTON.

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