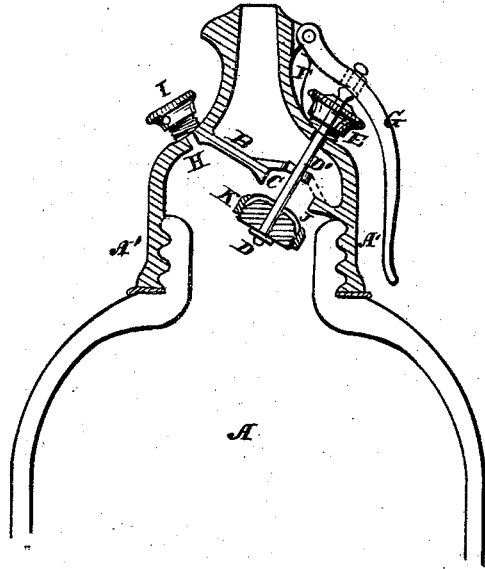


E. B. REQUA.

VESSELS FOR HOLDING LIQUIDS.

No. 182,037.

Patented Sept. 12, 1876.



*Witnesses:*

*W. B. Bond.*

*Charles H. Smith*

*Inventor:*

*E. B. Requa.*

# UNITED STATES PATENT OFFICE.

ELIAS B. REQUA, OF JERSEY CITY, NEW JERSEY.

## IMPROVEMENT IN VESSELS FOR HOLDING LIQUIDS.

Specification forming part of Letters Patent No. **182,037**, dated September 12, 1876; application filed June 5, 1876.

*To all whom it may concern:*

Be it known that I, ELIAS B. REQUA, of Jersey City, Hudson county, State of New Jersey, have invented certain new and useful Improvements in Vessels for Holding Liquids, whereof the following is a specification:

My improvements relate to the valve through which the liquid is both received and discharged, and its combination with the valve-seat formed around an opening in an oblique or transverse diaphragm in the neck of the vessel, or in a screw-cap fitted thereto, which is also provided with a vent-tube or aperture, and an air-tight cap or screw-top, for use in filling. The vessel is chiefly intended for effervescent fluids, which are held therein under pressure.

The drawing represents part of a vessel, A, with the neck and screw-cap in partial section.

Within the screw-cap A' is a diaphragm, B, having an opening, C, surrounded by a valve-seat for a valve, D, affixed to a valve-stem, D', passing out diagonally through a stuffing-box, E. The valve is arranged to open inwardly, and the pressure of the effervescent fluid closes the valve tightly when not opened by design. I however apply a light spring, as indicated at F, for holding the valve closed when there is no pressure from within. The valve in this instance is operated by a lever-handle, G, (under which, for convenience, the spring F is placed,) which lever is connected with the head of the valve-stem; but it may be worked in any convenient manner.

The valve D is peculiar, consisting of the body, which is affixed to the valve-stem, and has a screw-thread on its periphery, and a ring, K, (shown in cross-section,) threaded within to match, surrounds it. Said ring K has an inwardly-projecting flange that draws and holds down a disk of sheet-rubber, J, which presses against the valve-seat in the diaphragm. This construction of valve is advantageous in affording facility for renewal after wear. Moreover, in other devices of this nature for bottles and other vessels, a considerable portion of the rubber or other packing substance is so exposed that the liquid is brought in constant contact therewith when not in the act of being drawn, rendering it liable to imbibe the taste of the packing. This is particularly the case when the vessel is sustained with the mouth downward.

In the construction of valve described, none of the packing is exposed to the liquid excepting at the very instant of drawing it off.

The arrangement and combination of valve, diaphragm, and cap A' (and I do not confine myself to a "screw-cap," but use that term for convenience) renders it practicable to dispense with a long rod running down to or through the bottom of the vessel, and cheapens and simplifies the mechanism.

H is a vent-tube or aperture, closed by a cap, I, having a packing within, and provided with a small vent-hole, through which air can escape when the cap is slightly loosened. This vent is not for use in drawing off the liquid, but in filling the vessel—that is to say, when in course of filling the bottle, as with an effervescent liquid, the pressure of air and gas in the bottle equals the pressure employed in its filling, preventing further ingress of the fluid, then the vent-cap is to be slightly loosened, allowing a portion of the air or gas to escape, thereby reducing the pressure within, whereupon the filling of the bottle can be completed. Without such vent for use in this manner, it is very difficult to fill the bottle entirely, except under such a pressure as to endanger the bursting of the bottle—a result which often happens.

The vent should open into the vessel under the diaphragm; but the form of the latter is not material in this connection.

I claim as my invention—

1. The combination, with a cap, A', of the oblique diaphragm B, having an opening therein, furnishing a valve-seat for a valve having its stem working through the side of the said screw-cap, substantially as described.

2. The combination, with the diaphragm, of the valve D, constituted of the body, the ring K, and the disk of india-rubber or other packing substance.

3. In combination with a cap for bottles which are filled through a valve-closed opening in a diaphragm, the vent-tube H, (and screw-top,) arranged so as to open into the vessel below the diaphragm, for use in filling the vessel, substantially as set forth.

E. B. REQUA.

Witnesses:

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J. B. NONES.