Feb. 3. 1925. 1,525,032

W. J. GRADY

CLOSURE FOR CONTAINERS

Filed March 7, 1923

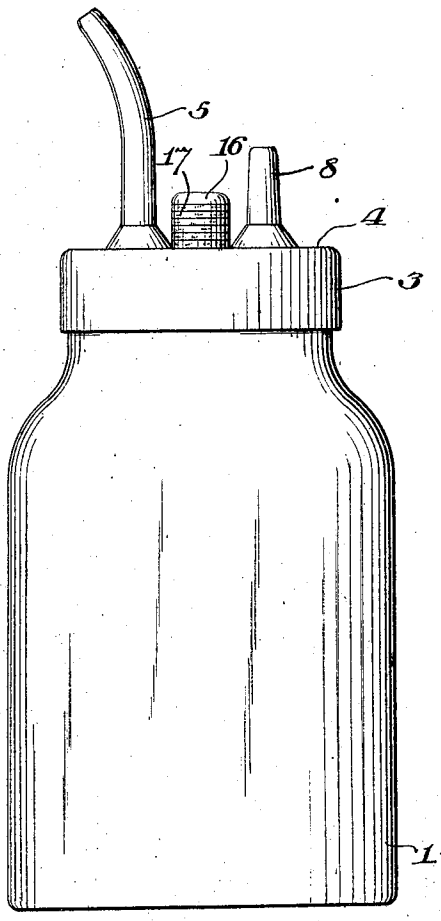


Fig. 1.

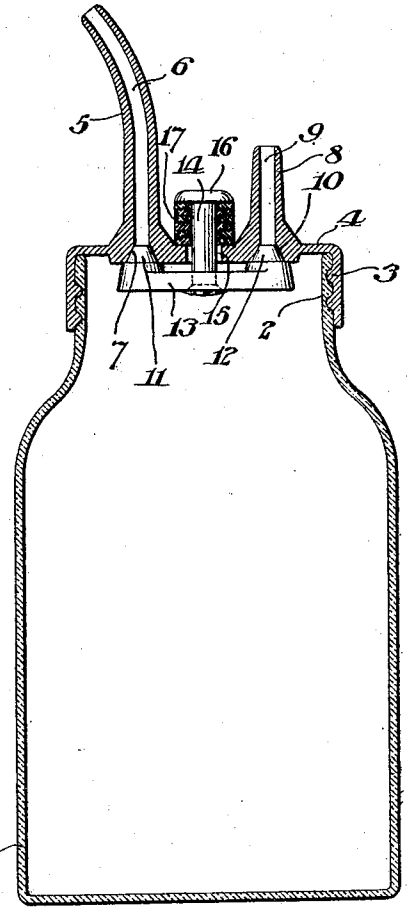


Fig. 2.

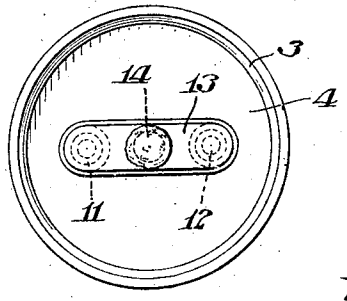


Fig. 3.

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Patented Feb. 3, 1925. 1,525,032

UNITED STATES PATENT OFFICE.

WILLIAM J. GRADY, OF PHILADELPHIA, PENNSYLVANIA.

CLOSURE FOR CONTAINERS.

Application filed March 7, 1923. Serial No. 623,321.

To all whom it may concern:

Be it known that I, WILLIAM J. GRADY, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improved Closure for Containers, of which the following is a specification.

My invention is an improved closure for a receptacle, such as a jar or bottle, and is designed to provide improved means for sealing the interior of such receptacle and for dispensing the contents thereof under control. It is particularly adapted for use in filling batteries with electrolyte or distilled water, and leading objects of my invention are to provide means for accurately dispensing such liquids under positive control and without foaming or contact with the hands, and to prevent ingress of dirt or impurities into the container and leakage or evaporation of liquid therein.

In its preferred form, my invention comprises a cap or stopper provided with a spout and with an air vent, the ports of the spout and vent being controlled by connected valves operable by a plunger which is normally elevated by an elastic collar which operates the plunger and seals the passage through which the plunger passes.

The accompanying drawings illustrate a preferred embodiment of my invention. In the drawings, Fig. 1 is a side elevation of a receptacle having my improved closure applied thereto; Fig. 2 is a transverse sectional view of the same, and Fig. 3 is a bottom plan view of the closure.

As illustrated in the drawings, a receptacle 1, of suitable material, has a threaded neck 2 to which is secured the threaded flange 3 of a cap 4. A curved spout 5, formed integrally with the cap, contains a passage 6 terminating in a port 7 forming a flaring valve seat, and a vent pipe 8, formed integrally with the cap, contains a passage 9 terminating in a port 10 forming a flaring valve seat.

Valves 11 and 12, for controlling the ports 7 and 10, are mounted on a cross bar 13 depending from a plunger stem 14 which passes through the aperture 15 in the cap and terminates in the button or thumb piece 16. An elastic collar 17, preferably formed of perforated rubber disks closely fitting the stem 14, is disposed between the upper face of the cap and the thumb piece 16, so as to provide a resilient wall sealing the passage 15 and acting to normally elevate the plunger 14 and valves 11 and 12 connected therewith. The aperture 15 is preferably made substantially larger than the stem 14 passing therethrough so as to permit lateral play of the plunger and insure accurate seating of the valves 11 and 12.

The receptacle and closure are preferably made of glass or lead so as to resist the action of electrolyte.

When it is desired to dispense the contents of the receptacle, the spout is inserted in or adjacent to the vessel to be filled and the plunger depressed by pressure on the thumb piece 16 to operate the valves and open the ports 7 and 10. The ports being opened, and the receptacle tilted, liquid flows therefrom through the spout without foaming or splashing due to the admission of air through the vent. When a sufficient quantity has been poured, the pressure on the button is released and the elastic collar thereupon elevates the plunger and seats the valves, the collar 17 preventing the passage of liquid through the passage 15.

Having described my invention, I claim:

1. A closure containing a port, a valve controlling said port, a longitudinally reciprocable plunger for operating said valve and an elastic seal for retracting and sealing said plunger.

2. A closure containing a port and a passage, a valve controlling said port, a plunger longitudinally reciprocable through said passage for operating said valve, and an elastic collar around said plunger said collar sealing the joints between said closure and plunger and acting through said plunger to seat said valve.

3. A closure containing a plurality of ports and a passage, valves controlling said ports, a plunger for operating said valves and spaced from the walls of said passage so as to permit tilting of said plunger to equalize the pressure on said valves, and an elastic collar surrounding said plunger and sealing said passage.

4. A closure having a spout and a vent,

valves controlling said spout and vent, a plunger for operating said valves and an elastic member comprising an apertured rubber disk for retracting and sealing said plunger.

5. A closure having a spout and a vent, valves controlling said spout and vent, a plunger for operating said valves and an elastic member comprising apertured rubber disks for retracting and sealing said plunger.

In testimony whereof I have hereunto set my name this 1st day of March, 1923.

WILLIAM J. GRADY.