No. 755,439. PATENTED MAR. 22, 1904.

P. BONNETEAU.

STOPPER FOR PREVENTING THE REFILLING OF VESSELS.

APPLICATION FILED AUG. 19, 1901.

NO MODEL.

Fig. 2.

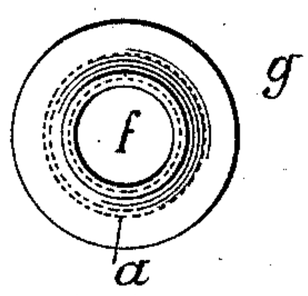


Fig. 1.

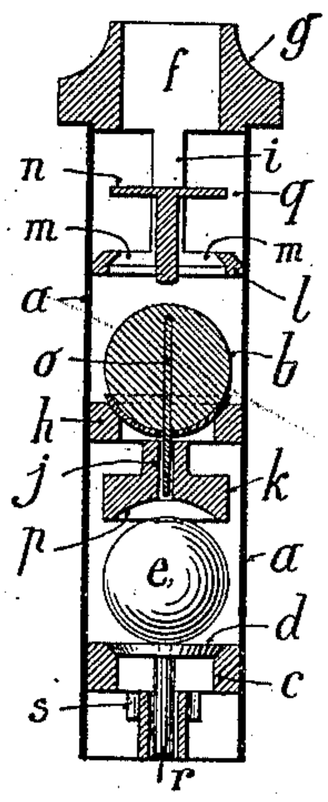


Fig. 3.

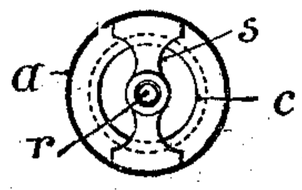
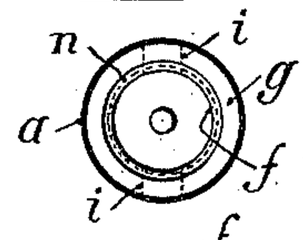


Fig. 5.



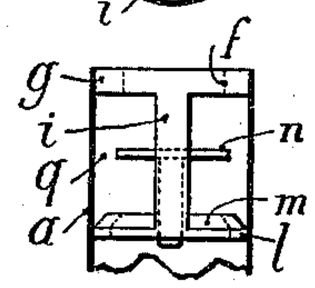
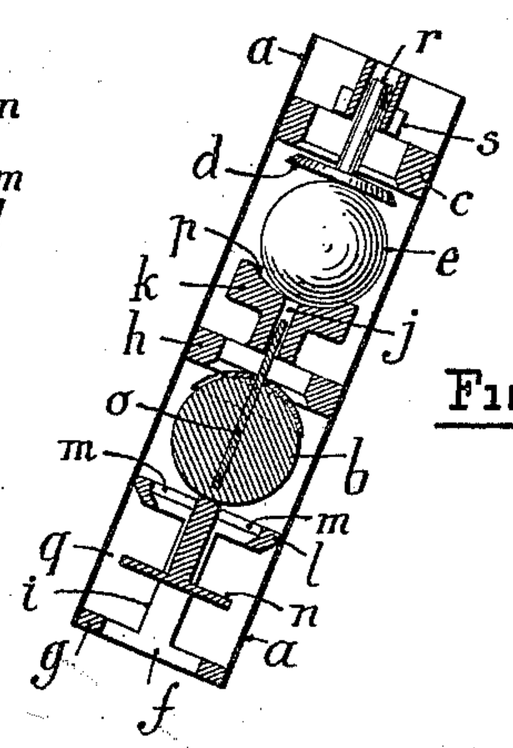


Fig. 4.

Fig. 6.



Witnesses:-
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Samuel Percival

Inventor
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By his Attorneys
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No. 755,439. Patented March 22, 1904.

UNITED STATES PATENT OFFICE.

PIERRE BONNETEAU, OF PARIS, FRANCE.

STOPPER FOR PREVENTING THE REFILLING OF VESSELS.

SPECIFICATION forming part of Letters Patent No. 755,439, dated March 22, 1904.

Application filed August 19, 1901. Serial No. 72,562. (No model.)

To all whom it may concern:

Be it known that I, PIERRE BONNETEAU, a citizen of the Republic of France, residing at 15 Rue de Richelieu, Paris, France, have invented certain new and useful Improvements in Stoppers for Preventing the Refilling of Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved stopper for insertion in the necks of vessels of any kind for holding liquids and of any diameter for the purpose of preventing such vessels from being refilled after having been once emptied.

The accompanying drawings illustrate a stopper constructed according to this invention, in which—

Figure 1 is a longitudinal section showing the valve closed. Fig. 2 is an end view of the same. Fig. 3 is an end view looking from the inside of the vessel. Fig. 4 is a side elevation of a part of the arrangement, showing the intercepting-diaphragm situated at the mouth of the neck of the bottle and which serves to protect the elements of the stopper. Fig. 5 is a plan of the said diaphragm as seen from the outside. Fig. 6 represents the arrangement inverted, the elements of the stopper being shown in those positions they occupy at the moment that the vessel is being emptied, the valve being then fully open.

In the figures the same reference-letters refer to corresponding parts in the various views.

The stopper, which cannot be tampered with—that is to say, to which access cannot be gained by a thread or other object introduced from outside into the neck of the bottle or vessel—comprises a heavy ball or sphere *e*, approximately of the same diameter as the bore of the cylindrical casing *a*, inclosing the various parts of the stopper. This ball *e* is inclosed in a chamber forming part of the said casing, its lower pole resting on a disk *d*, which forms a valve. This valve seats on a conical seating fixed rigidly to the casing *a*. The solid valve-spindle *r* of the valve *d* slides freely in a hole bored in the center of the guide *s*, which is attached to the valve-seating *c* in such a manner that the fluid can freely rise to the seat of the valve. For the purposes of guiding the ball *e* when it moves for regulating the lift of valve *d* and for hindering any object introduced from the outside reaching the valve a stop is provided, consisting of an annular ring *h*, fastened to the casing *a*, and of a central disk *k* in one piece with the ring *h*, and which is formed so as to leave a sufficiently wide annular space between itself and the casing *a* for the passage of the fluid. The disk *k* is provided with a spherically-shaped cavity *p*, adapted to fit closely to the ball *e* when in contact with it.

To assure inaccessibility of the stopper, an intercepting-diaphragm is provided at the mouth of the casing *a*, composed of two rings and a disk *g l n*, connected together by two side rods *i*. The said rings and disk, while affording a passage for the liquid through the spaces *f m q*, prevent direct access to the interior.

The casing *a* is inserted in the neck of the bottle and the mouth-ring *g* molded on its exterior (see Fig. 1) in order that it may rest on the mouth of the neck of the vessel and be sealed or otherwise fixed in position, or the ring *g* may be made flush with the end of casing *a*, (see Figs. 4 and 6,) in which case the casing *a* is sealed in the interior of the neck of the bottle, and thus renders it non-refillable.

To prevent the receptacle once emptied from being refilled by inclining it suitably with the neck directed toward the earth and immersing in a liquid, a light ball *b*, made of cork, celluloid, hollow metal, or glass, is inserted into the space between the two diaphragms *h* and *l*, which rests in the concave part of the ring *h* and closes its central opening. This ball is provided with a central pin *o*, which, sliding easily in its hole *j* in the disk *k*, allows it to rise easily from its seat *h*. The floating ball *b* when raised by the entrance of liquid from the exterior comes up against the ring *h*, and thus prevents any entry of liquid into the receptacle. The ball *b* after having been raised for emptying the

chamber in which the ball *e* is situated reseats itself in the ring *h* when any attempt is made to refill the receptacle.

What I claim, and desire to secure by Letters Patent, is—

1. In a device of the character described, the combination with a lower flat valve *d* and a heavy sphere *e* loading said valve, of a stop limiting the opening of the valve without throttling the flow of the liquid as the vessel is being emptied, consisting of a lower cylindrical part *k* whose diameter is slightly less than that of the stopper and being hollowed out at its lower face to form a cylindrical cavity for the reception of the sphere *e*, an annular disk *h*, a central diametrical part *j* connecting the part *k* with the disk *h*, a cork ball *b* seating on the disk *h*, and a rod carried by the ball *b* and guided in an opening in the part *j*.

2. In a stopper of the character described, the combination with a tube *a*, of a valve *d*, a spindle therefor, a guide for said spindle, a ball *e* upon the valve and whose diameter is slightly less than the bore of the tube, a cylindrical stop *k* concentric with the tube and having its lower face hollowed out, a circular seating *h* secured to the tube and integral with the stop *k*, a ball *b* resting on the seating and having a pin seated in the ball, said pin sliding in an aperture in the stop *k* and said ball *b* being adapted to coact with the ring *h* in the manner described to prevent entry of liquid through the said ring, annular rings *g*, *l*, one above the other and secured to the tube, a flat disk *n* arranged between the rings and whose diameter is less than the bore of the tube and connected with the said rings, and a rod carried by the disk adapted to serve as a stop for the ball *b*, all as and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

PIERRE BONNETEAU.

Witnesses:
ALBERT MAULVAULT,
EDWARD P. MACLEAN.