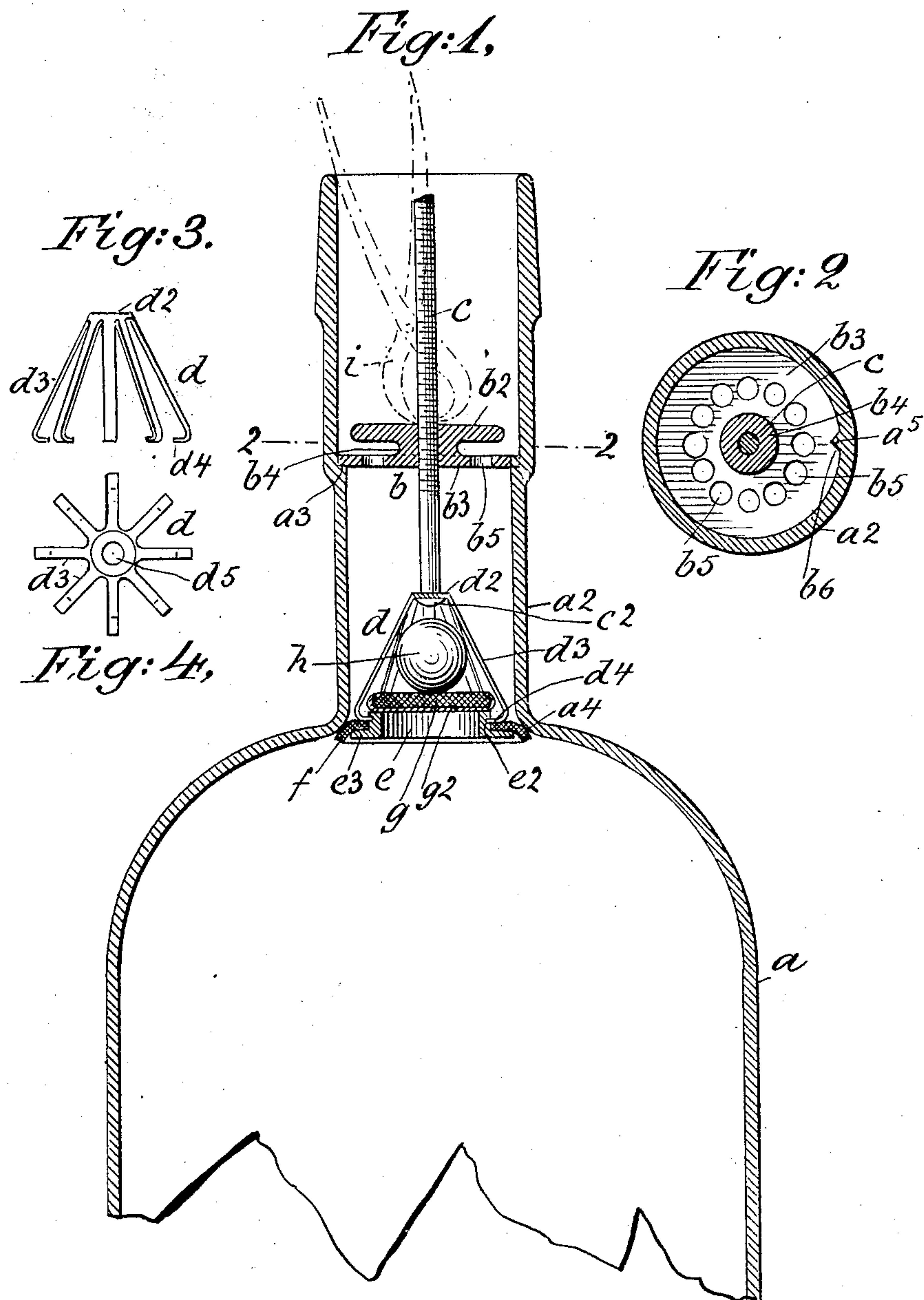


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H. F. & W. R. ATKINSON.
NON-REFILLABLE BOTTLE.
APPLICATION FILED FEB. 27, 1906.



WITNESSES

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UNITED STATES PATENT OFFICE

HORACE F. ATKINSON AND WILLIAM R. ATKINSON, OF NEW YORK, N. Y.

NON-REFILLABLE BOTTLE.

No. 829,619.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed February 27, 1906. Serial No. 303,322.

To all whom it may concern:

Be it known that we, HORACE F. ATKINSON and WILLIAM R. ATKINSON, citizens of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to bottles, jugs, jars, and similar vessels; and the object thereof is to provide a vessel of this class having a neck with a neck attachment which is so constructed that after the vessel has been filled and the neck attachment applied the vessel may be emptied of its contents, but cannot be refilled or reused.

In the accompanying drawings we have shown our improvement applied to a bottle; and the invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of our improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a central vertical section of the top portion of a bottle provided with our improvement; Fig. 2, a section on the line 2 2 of Fig. 1; Fig. 3, a side view of a valve-cage which forms a part of our invention, and Fig. 4 a top plan view of said valve-cage.

In the drawings forming part of this specification we have shown at *a* an ordinary bottle provided with a neck *a*², the top portion of which is enlarged to form an annular shoulder *a*³ about midway of the neck of the bottle, and at the point where the neck joins the bottle proper is another annular shoulder *a*⁴.

Our improved neck attachment comprises in the form of construction shown a guard member *b*, comprising top and bottom disks *b*² and *b*³, integrally connected by a central neck member *b*⁴, and the bottom disk *b*³ is of such diameter as to rest on the annular shoulder *a*³, while the top disk *b*² is of a diameter less than that of the top portion of the neck of the bottle, and the bottom disk member *b*³ is perforated, as shown at *b*⁵, to form ports or passages, and the diameter of the disk *b*² is such that it covers or overlaps the ports or passages *b*⁵.

Passing vertically through the guard member *b* is a screw-threaded rod *c*, with the lower end of which is connected a valve-cage *d*, the

general form of which is that of a cone, and said valve-cage consists of a top plate *d*² and diverging and inwardly-inclined fingers *d*³, provided at their lower ends with inwardly-directed hook members *d*⁴, and the top plate *d*² is provided with a hole *d*⁵, through which the rod *c* is passed, said rod *c* being also provided at its lower end with a head *c*².

An annular base member *e* is connected with the cage *d*, said base member being tubular in form and provided with an annular groove *e*², adapted to receive the hook members *d*⁴ at the lower ends of the fingers *d*³ of the cage *d*, and the base member *e* is also provided at the bottom thereof with an annular flange *e*³, on which is placed a flexible gasket *f*, which is held in connection with the base member *e* by the fingers *d*³ of the cage *d*.

A valve *g*, composed of any suitable material which will not be affected by acids or liquids, is placed on the base member *e* and is adapted to close the port or passage formed thereby, and a spherical ball or body *h* is placed in the cage *d* and rests on the valve *g*. The valve *g* may be of any preferred construction and may be composed of any suitable material, but if composed of anything but metal or glass is preferably provided with a metal casing *g*², which incloses the bottom and the edges thereof, and the flexible gasket *f* may also be composed of any suitable material which will not be destructively affected by acids or liquids of any kind or class.

The bottom disk member *b*³ of the guard *b* is provided at one side with a notch or recess *b*⁶, and the neck of the bottle is provided above the annular shoulder *a*³ with an inwardly-directed tooth or projection *a*⁵, adapted to enter said recess, and the application of the neck attachment is as follows: It will be understood that the guard member *b* where the rod *c* passes therethrough is threaded to correspond with the thread on said rod, and after the bottle has been filled with the desired contents the guard member *b* is adjusted on the rod *c*, so that the distance between the said guard and the base member *e* will be greater than the distance between the annular shoulder *a*³ in the neck of the bottle and the bottom of said neck or the annular shoulder *a*⁴. The neck attachment is then passed downwardly into the neck of the bottle until the disk *b*³ of the guard *b* rests on the annular shoulder *a*³, and in this position of the parts

the base member *e* is below the annular shoulder *a*⁴, after which the rod *c* is turned so as to draw the base member *e* upwardly into the position shown in Fig. 1, in which position the gasket *f* presses on the annular shoulder *a*⁴, as shown in said figure, and the diameter of the flange *e*³ of the base member *e* is such that the gasket *f* will form a close fit between the flange *e*³ of the base member *e* and the annular shoulder *a*⁴ at the bottom of the neck of the bottle. In forcing the attachment down into the neck, as hereinbefore described, the gasket *f* bends upwardly, so as to permit of said operation; but after the attachment has been forced into the neck, as above described, the gasket *f* assumes the position shown in Fig. 1, and when the rod *c* is turned so as to draw the base member *e* upwardly the gasket *f* closes the space between the base member *e* and the annular shoulder *a*⁴, as hereinbefore described.

It will be understood that when the attachment has been inserted into the neck of the bottle and the cage *d* and base member *e* drawn upwardly by turning the rod *c* the said rod securely locks the separate parts of the attachment together and also locks said attachment in the neck of the bottle, and after this is done the rod *c* is cut off above the guard *b* by an ordinary pair of pliers or similar device *i*, as indicated in dotted lines in Fig. 1, after which the neck of the bottle may be closed by an ordinary cork or stopper in the usual manner.

Whenever it is desired to empty the bottle or to discharge a part of the contents thereof, the cork or stopper is removed and the bottle is tilted or inverted in the usual manner, and in this operation the valve *g* leaves its seat and opens the port or passage through the annular base member *e*, the ball or body *h* dropping into the inverted cage *d*, and the contents of the bottle will flow out through the annular base member *e* and through the guard member *b* or through the ports or passages *b*⁵ in the bottom portion of the guard member and around the top portion of the disk *b*² of said guard member, and this operation may be continued or repeated until the bottle is entirely empty.

If an attempt be made to refill the bottle by pouring liquids thereinto, the valve *g* and ball or body *h* will assume the position shown in Fig. 1 and the port or passage through the base member *e* will be closed, and this operation of the valve *g* and ball or body *h* will be the same in any position in which the bottle can be held in an attempt to pour liquids thereinto, and if the bottle be placed on its side in a tub or tank containing a liquid the shape of the cage *d* will compel the ball or body *h* and the valve *g* to assume the position shown in Fig. 1, and no liquids can enter the bottle, and, if desired, the ball or body *h* and valve *g* may be made to serve as floats, in

which event liquids cannot be forced into the bottle by holding the latter in an upright position.

Our invention is not limited to the particular form of valve-cage *d* herein shown and described, all that is necessary in this connection being that the said valve-cage be conical in form and that it be provided with openings in the side thereof and that it be connected with the base member *e* and that the gasket *f* be suitably secured to the base member *e*.

The object of the guard *b* is to prevent the insertion of a wire, tool, or other instrument in an effort to interfere with or prevent the operation of the valve *g* and ball or body *h*, and the construction of said guard is such as to permit the flow of the contents of the vessel through the bottom portion of the guard, while the top portion thereof prevents the insertion of the wire, tool, or other instrument. Our invention, however, is not limited to this exact form of guard, all that is necessary in this connection being to provide a device of this class through which the rod *c* passes and which may be secured in the neck of the bottle, as described.

It will be apparent that our improved neck attachment may be used in connection with any kind or class of vessels having a neck, and by means of our improvement we provide a vessel of the class specified having a neck formed in the manner described with a neck attachment which will effectually prevent the refilling of said vessel after it has been emptied or partially emptied of its original contents.

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

1. A vessel provided with a neck the top portion of which is enlarged and provided with an annular shoulder at a predetermined distance from the bottom thereof, the vessel and the neck being also provided at their juncture with an annular shoulder, and a neck attachment comprising a guard member adapted to rest on the annular shoulder in the neck, a screw-threaded rod passing through said guard member, a conical cage connected with the lower end of the screw-threaded rod, an annular base member connected with the base portion of the cage, a flexible gasket secured to the annular base member and adapted to close the space between the same and the annular shoulder at the juncture of the neck and the body portion of the vessel, a valve placed in said cage and adapted to close the port or passage through the annular base member, and a ball placed in said cage and adapted to rest on said valve, substantially as shown and described.

2. The herein-described neck attachment for bottles and similar vessels, comprising a guard member, a screw-threaded rod passing

therethrough, a conical cage connected with the lower end of said rod, an annular base member connected with the base portion of said cage, a flexible gasket connected with the
5 annular base member, a valve placed in said cage and adapted to rest on the annular base member, and a ball or spherical body placed in said cage and adapted to rest on said valve, substantially as shown and described.

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