No. 653,624. Patented July 10, 1900.

G. S. LINTHICUM.

NON-REFILLABLE BOTTLE.

(Application filed May 28, 1900.)

(No Model.)

Fig. 1.

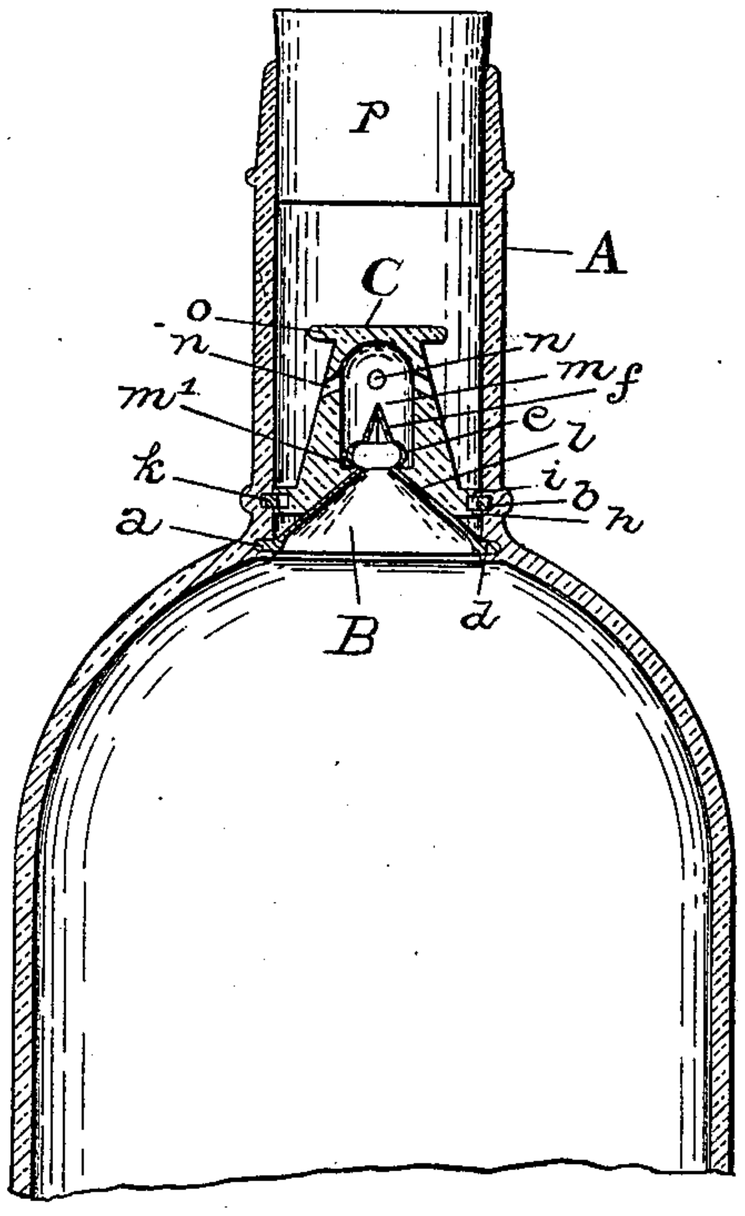
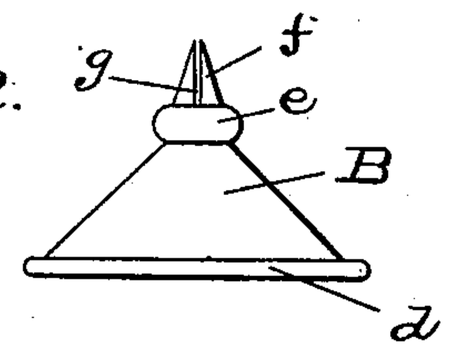


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE S. LINTHICUM, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO CHARLES W. LINTHICUM, OF SAME PLACE.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 653,624, dated July 10, 1900.

Application filed May 28, 1900. Serial No. 18,189. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. LINTHICUM, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention relates to non-refillable bottles; and its object is to provide a bottle of this character which although of few and simple parts will effectually prevent any one from refilling it after it has once been emptied of its original contents.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a vertical section of the bottle, and Fig. 2 is an enlarged side elevation of the valve detached.

Referring to the drawings, A designates the neck of a bottle having two annular recesses *a* and *b* on its interior at its lower end.

B designates an elastic valve, preferably formed of rubber and of approximately conical or funnel-shaped form inverted. Said valve has a thickened base rim-flange *d*, which springs out by its own elasticity into the lowermost annular recess *a*, which thus holds the valve in place. Near its upper end the elastic valve B has an approximately-spherical bulb *e*, above which is a tapered apex *f*, which is formed with a plurality of longitudinal slits *g*, extending radially from its tip and terminating at the bulb.

In the bottle-neck A above the elastic valve B is located a guard C, preferably formed of glass and in the form of a truncated cone. This guard has at its base an annular flange *h*, which fits accurately in the bottle-neck A and is formed with an annular groove or recess *i*, adapted to coincide with the uppermost interior recess *b*. In said recess *i* is located an outwardly-springing split ring *k*, which takes in the said annular recess *b*, and thereby holds the guard C securely in place.

The guard C is further formed with a central upwardly-tapering cavity *l*, whose walls fit closely around and contact with the exterior part of the funnel-shaped elastic valve B. Above this cavity is an enlarged outlet-chamber *m*, having a slightly-contracted bottom flange *m'*, which supports the said bulb, as shown, the bulb *e* and apex *f* being in the chamber *m*. Discharge-passages *n* are formed in the side walls of said chamber *m* and lead therefrom in a downwardly-inclined direction. At its top or small part the cone-guard C is provided with a circular baffle-plate *o*, projecting out over the discharge-passages *n* and serving to deflect a wire or any like device which might be inserted in the bottle-neck in an attempt to fraudulently open the valve. The mouth of the bottle is closed by a stopper *p* in the usual manner.

When the bottle is inverted to pour out its liquid contents, the weight of the liquid will open the slits *g* in the apex of the valve and the liquid will pass out through the outlet-chamber *m* and discharge-passages *n*, and the construction of the guard C, with its tapering cavity *l* fitting closely in contact with the valve, forms a rigid support for the valve and overcomes the tendency of the weight of the liquid to dislodge the valve from its place. When the bottle is again restored to normal position, the slits *g* automatically close by the elasticity of the material and a partial vacuum is momentarily formed within the rubber valve, which tends to collapse the latter; but this tendency is overcome by the spherical bulb *e*, which, as shown in Fig. 1, is expanded within the chamber and rests upon and is supported by the bottom flange *m'*, whereby said bulb prevents any downward collapsing movement of that portion of the valve below it, and at the same time the bulb forms a strengthening base or support for the slitted apex *f*.

The arrangement of the outlet-passages *n*, leading from the outlet-chamber *m* in a downwardly-inclined direction, and the baffle-plate *o* effectually prevents the insertion of a wire or similar instrument to reach the slitted apex *f* for the purpose of refilling the bottle.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A non-refillable bottle provided in its neck with an interior annular recess; an elastic conical valve having a base rim-flange held by its own elasticity in said annular recess and an apex provided with longitudinal slits; and a guard in the bottle-neck hav-

ing a central tapering cavity whose walls fit closely in contact with said valve and terminating below the said apex, and provided with an outlet-chamber surrounding said apex, and with downwardly-inclined discharge-passages leading outwardly from said outlet-chamber.

2. A non-refillable bottle provided in its neck with an interior annular recess; an elastic conical valve having a base rim-flange held by its own elasticity in said annular recess, said valve also having a spherical bulb near its upper end and a tapered apex above said bulb having longitudinal slits extending from its tip and terminating at the said bulb; and a guard in the bottle-neck having a central tapering cavity whose walls closely contact with said valve and terminate at the lower side of said spherical bulb, an outlet-chamber surrounding said apex and spherical bulb and provided with a bottom flange which supports the bulb, and discharge-passages leading from said outlet-chamber.

3. A non-refillable bottle provided in its neck with two interior annular recesses *a*, *b*; an elastic conical valve having a base rim-flange held by its own elasticity in the annular recess *a*, said valve also having a bulb near its upper end and a tapered apex above said bulb having a plurality of longitudinal slits extending from its tip to the bulb; a guard in said bottle-neck having an annular base-flange formed with an annular recess *i* coinciding with the uppermost recess *b*—said guard also having a central tapering cavity whose walls fit closely in contact with said valve and terminate at the lower side of said bulb, an outlet-chamber surrounding said apex and bulb and having a contracted bottom flange which supports the bulb, discharge-passages leading outwardly in a downwardly-inclined direction from said outlet-chamber, and a baffle-plate above said discharge-passages; and a split ring in the recess *i* of the guard and expanded into the uppermost recess *b* in the neck.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE S. LINTHICUM.

Witnesses:

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