No. 631,252. Patented Aug. 15, 1899.

J. F. GAYLORD.

NON-REFILLABLE BOTTLE.

(Application filed Dec. 5, 1898.)

(No Model.)

Fig. 1.

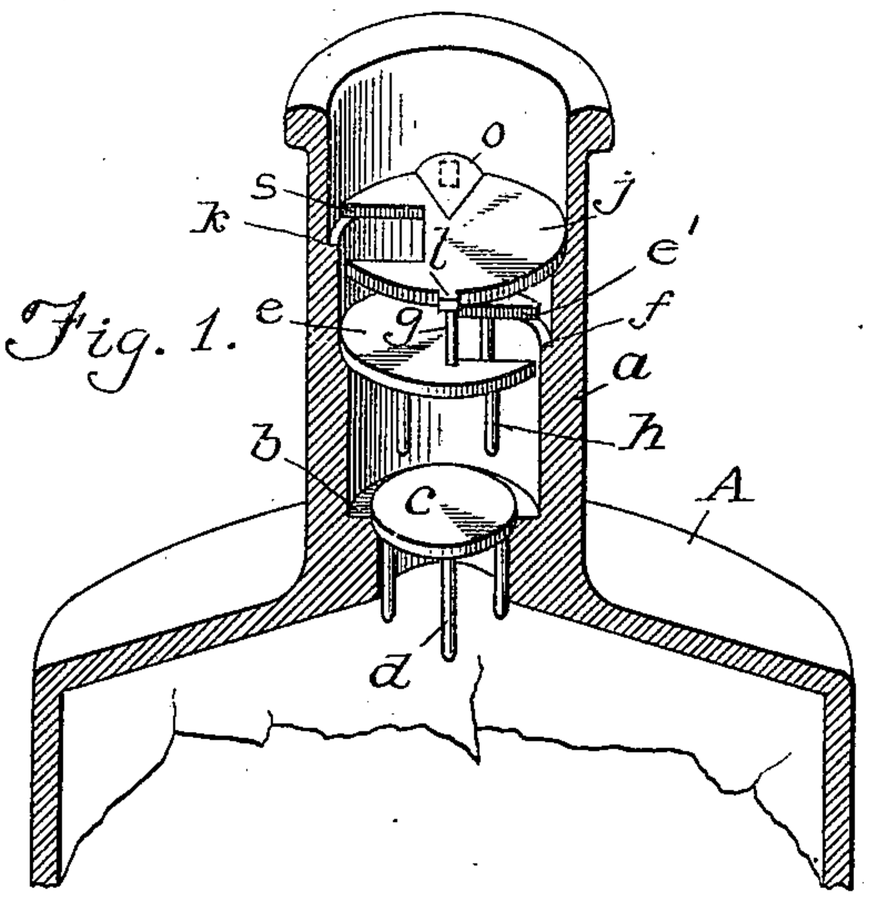


Fig. 2.

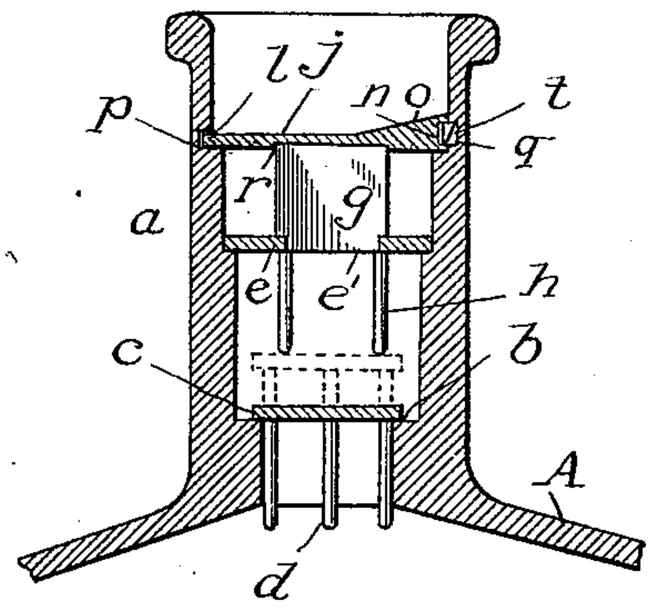


Fig. 3.

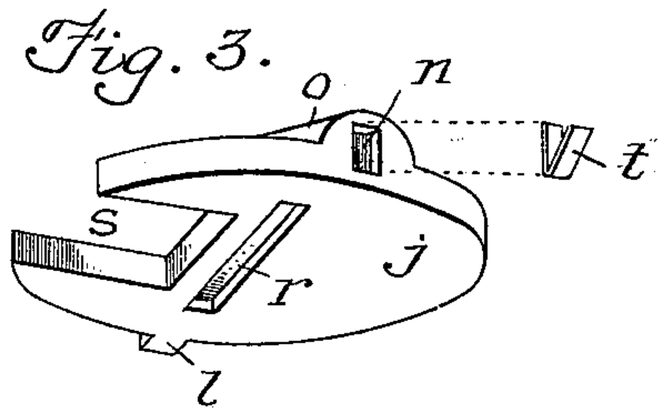
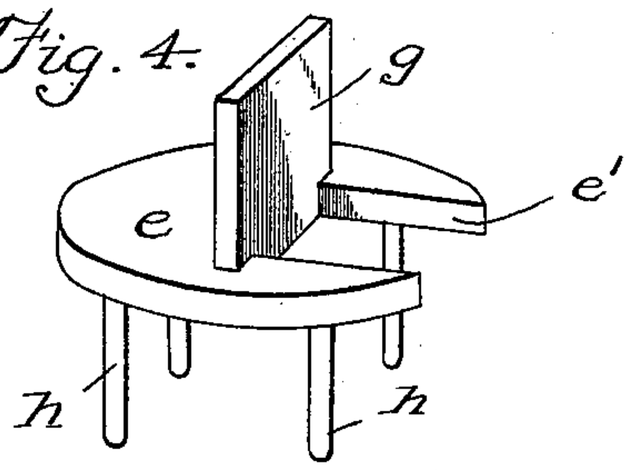


Fig. 4.



Witnesses:-
Lee J. Van Horn
Charles B. Mann Jr.

Inventor:-
John F. Gaylord
By Chas B. Mann
Attorney.

UNITED STATES PATENT OFFICE.

JOHN F. GAYLORD, OF PORTSMOUTH, VIRGINIA, ASSIGNOR OF TWO-THIRDS TO J. EDWARD COLE AND ROBERT W. SHULTICE, OF NORFOLK, VIRGINIA.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 631,252, dated August 15, 1899.

Application filed December 5, 1898. Serial No. 698,250. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. GAYLORD, a citizen of the United States, residing at Portsmouth, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to non-refillable bottles; and it consists of the novel construction, combination, and arrangement of parts, as hereinafter shown and described.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective section view of a bottle and neck and shows the relative arrangement of the several parts constituting my invention. Fig. 2 is a vertical section of the bottle-neck and the means employed for preventing refilling. Fig. 3 is a perspective view, on a larger scale, of the upper diaphragm. Fig. 4 is also a perspective view, on the same scale, of the lower diaphragm.

In practice I prefer to make all the parts of glass or porcelain, although other material may be used.

In the drawings, A designates a portion of a bottle provided with a neck *a*, which is largest at its outer or discharge end and on its internal diameter is provided with two or more inward-projecting shoulders, each of which reduces the internal diameter. In the lower portion of the neck of the bottle the internal diameter of the neck is reduced to form a shoulder or seat *b* for a puppet-valve *c*, said puppet-valve provided on its bottom with downward-projecting guides *d*, which insures that the valve will rise, lower, and seat properly. Above the puppet-valve *c* is the lower horizontal diaphragm *e*, which is supported by an annular shoulder *f* in the bottle-neck. This diaphragm *e* has on its bottom depending pins *h*, which prevent the puppet-valve *c* from becoming dislodged by rising too far off its seat. The lower diaphragm *e* is slotted or cut away at *e'* at one side to permit the liquid to pass out, and a vertical partition-wall *g* projects centrally up from the diaphragm.

An upper horizontal diaphragm *j* is supported in the bottle-neck by a shoulder *k*, and said diaphragm is provided at one side with a small projecting lug *l*, and at the other side or diametrically opposite said lug is a recess or depression *n*. At this depression the diaphragm is thicker, as at *o*, to accommodate said depression.

The bottle-neck at the upper shoulder *k* is provided at one side with a recess *p*, which receives the said projecting lug *l*, and in the neck diametrically opposite is another recess or depression *q*. On the bottom said upper diaphragm *j* is provided with a central groove or depression *r*, which takes over or receives the top edge of the vertical partition-wall *g*, and the two diaphragms are thereby secured in their proper relative position to each other. The upper diaphragm *j* is also provided at one side with a cut-away or opening (designated *s*) through which the liquid discharges, and the relative position of said opening is diametrically opposite the opening *e'* in the lower diaphragm *e*, and the vertical partition *g* is between the two openings. The object in arranging the cut-away portions or openings in the two diaphragms diametrically opposite each other and providing the vertical wall *g* between them is to prevent any one tampering with the valve by the insertion of a wire down through the neck of the bottle.

In placing the upper diaphragm *j* in position the lug *l* is first inserted in the recess *p*, and a V-shaped metal spring *t* is inserted so as to fit in both recesses *n* and *q*. It will now be seen that when the upper diaphragm is pushed down and seated on the shoulder *k* the V-shaped spring *t* will register with the recess *q*, and upon registering the spring will expand and take into said recess and lock the upper diaphragm in position.

The vertical partition *g* in the present instance is attached to the lower diaphragm; but it might be attached to the upper one. This partition *g* keeps the lower diaphragm seated. It also causes the two diaphragms, with their openings on opposites sides, to maintain the same relative position, and it separates the said two openings.

It will be understood that the bottle is first filled and then my improved non-refillable means placed in the neck afterward. A cork

will then be placed in the neck above the upper diaphragm to seal it.

Having described my invention, what I claim is—

1. In a non-refillable bottle, the combination of a bottle-neck largest at its outer end and provided on its internal diameter with two or more inward-projecting shoulders each of which reduce the internal diameter of said neck; diaphragms of different sizes seated on said shoulders each diaphragm having a discharge-opening that is diametrically opposite the opening in the other diaphragm; a vertical partition-wall, *g*, loosely connecting two of the diaphragms; and a puppet-valve below the diaphragm, as set forth.

2. In a non-refillable bottle the combination of a bottle-neck largest at its outer end and provided on its internal diameter with two or more inward-projecting shoulders each of which reduces the internal diameter of said neck; two recesses, *p*, *q*, in said neck at the uppermost shoulders, one of said recesses having position diametrically opposite the other; diaphragms of different sizes seated on said shoulders and each diaphragm provided with an opening for the discharge of liquid, the uppermost diaphragm having at one side a lug, *l*, fitting in one neck-recess, and diametrically opposite a recess or depression, *n*, coincident with the other neck-recess, *q*; a V-shaped spring fitting in the recess of the diaphragm and also in the recess of the bottle-neck; and a puppet-valve below the diaphragms, substantially as described.

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

JOHN F. GAYLORD.

Witnesses:

A. NEWTON CRUSER,

WM. W. DEY, JR.