No. 666,519. Patented Jan. 22. 1901.

J. S. HAGGERTY.

NON-REFILLABLE BOTTLE.

(Application filed June 12, 1900.)

(No Model.)

Fig. 1,

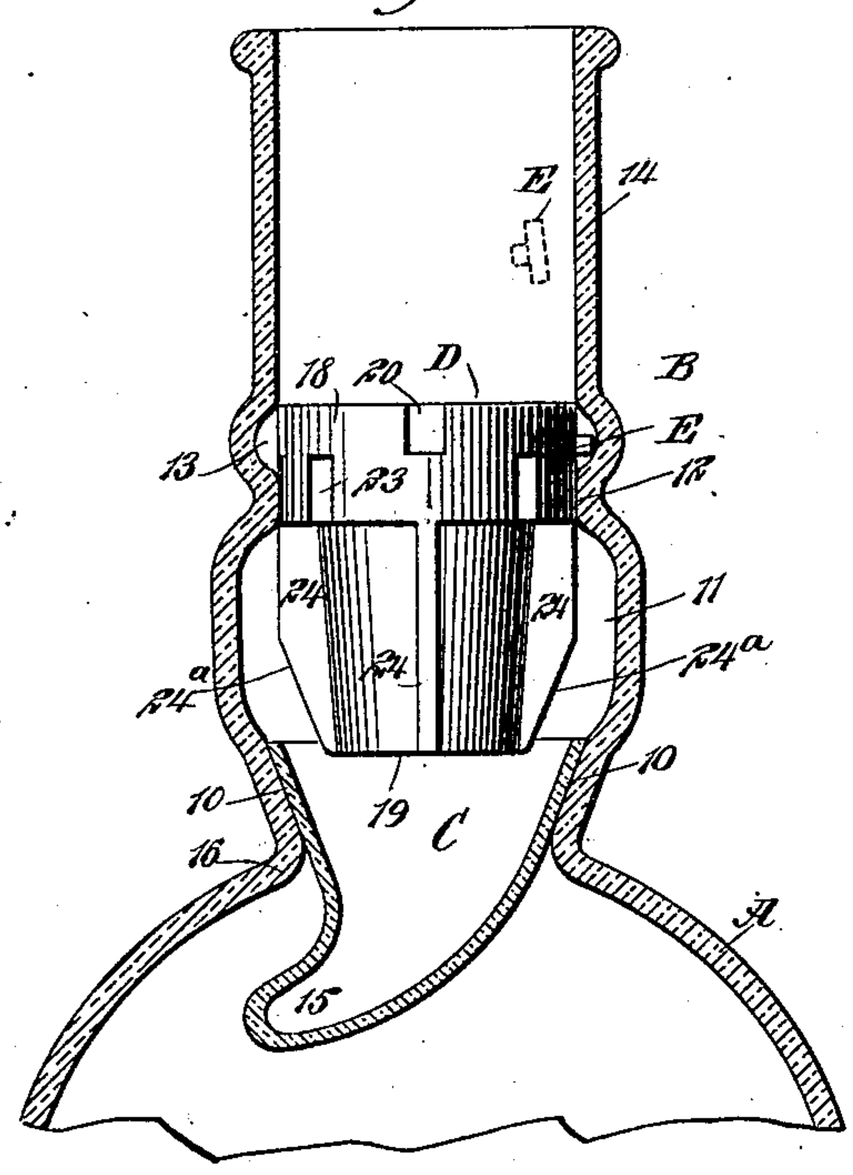


Fig. 2,

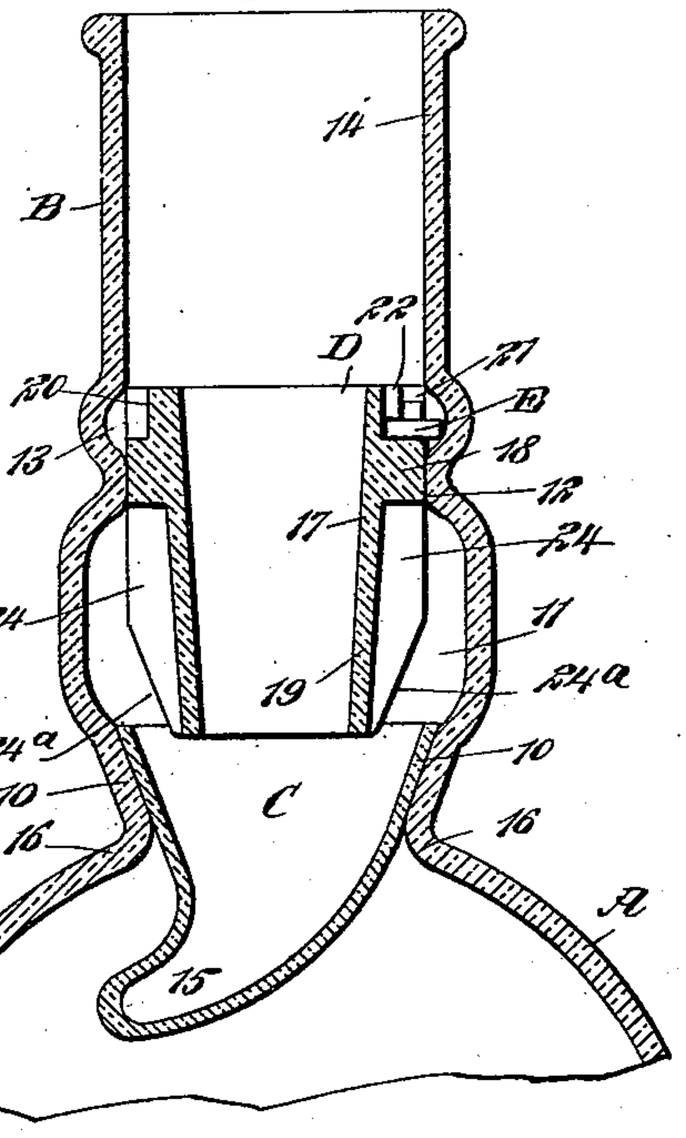


Fig. 3,

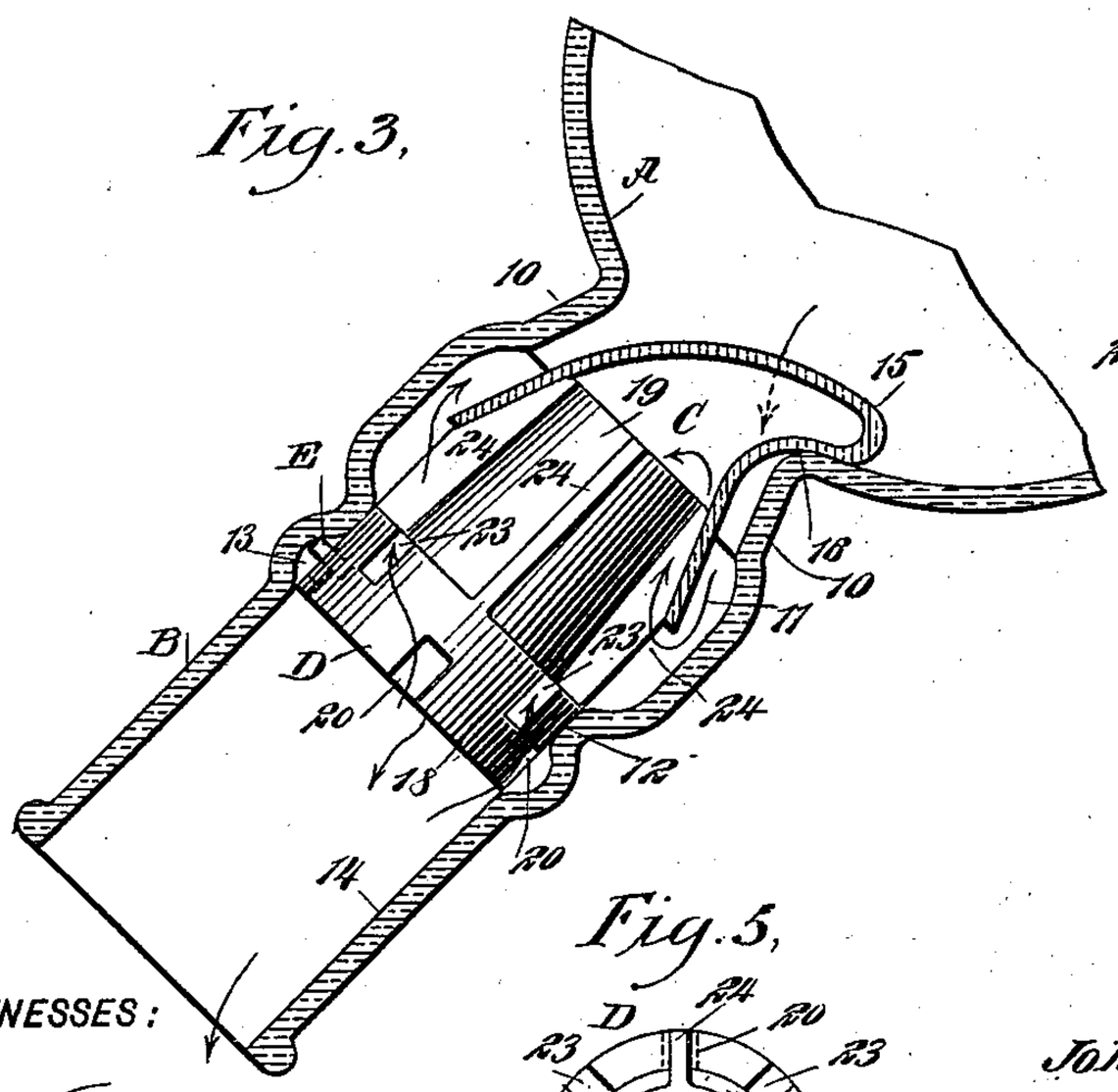


Fig. 4.

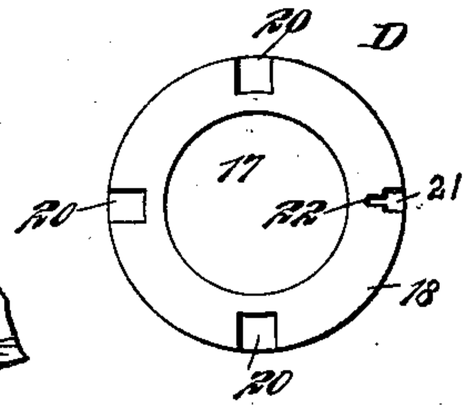


Fig. 6.

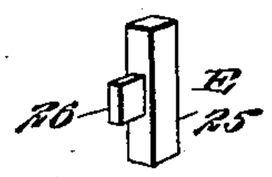
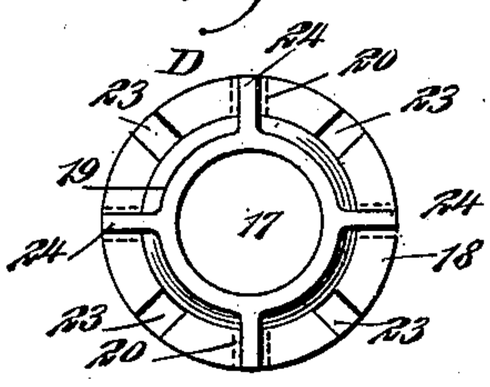


Fig. 5,



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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 666,519, dated January 22, 1901.

Application filed June 12, 1900. Serial No. 19,996. (No model.)

To all whom it may concern:

Be it known that I, JOHN SYLVESTER HAGGERTY, a citizen of the United States, and a resident of the city of New York, (Astoria,) borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Non-Refillable Bottle, of which the following is a full, clear, and exact description.

The aim of this invention is to so construct bottles of the type mentioned that they will be effective for the designed purpose and so that they will be commercially desirable, as the cost of the improved bottle will but slightly exceed that of an ordinary bottle of like capacity.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical section through the upper portion of the body of a bottle and its neck constructed in accordance with my invention, the parts being in upright position, and likewise a vertical section through the valve and a side elevation of the plug or stopper. Fig. 2 is a longitudinal section through the neck and upper portion of the body of the bottle in upright position and likewise a vertical section through the valve and stopper or plug. Fig. 3 is a view similar to Fig. 1, the bottle being shown in position to empty its contents. Fig. 4 is a plan view of the plug or stopper. Fig. 5 is a bottom plan view of the plug or stopper, and Fig. 6 is a perspective view of a key employed to lock the plug or stopper in the neck of the bottle.

The body A of the bottle may be of any desired shape, and the neck B, where it connects with the body of the bottle, is provided with an inclined inner surface 10. Above this inclined surface the neck is swelled out annularly, forming a section 11, which is of greater transverse dimensions than any other portion of the neck. Just above this enlarged section 11 the inner wall 12 of the neck is contracted, and above the contracted portion 12 the neck is provided with an outwardly-curved annular section, which forms an inner annular concaved groove 13 in the neck. Above this groove 13 the neck 14 is of the usual construction and is adapted to receive a cork. Preferably the interior diameter of the upper portion of the neck corresponds to the diameter of the contracted section 12 of the neck. A valve C is employed to close the lower portion of the neck when the bottle is in an upright position. This valve is preferably hollow, being open at the top and closed at its sides and bottom. The body or upper portion of the valve is conical, and its outer surface when the valve is at rest fits snugly against the inclined inner surface 10 at the bottom portion of the neck of the bottle. The lower portion of the valve C extends within the body A of the bottle, and at the lower portion of this valve a tailpiece 15 is formed, which is curved in direction of one side of the valve, and the curvature of the tailpiece is such that when the valve is unseated the concaved surface of the tail section or piece of the valve will bear against the bend 16, produced in the bottle where the body and the neck come together, as shown in Fig. 3.

A plug D is used, which is fitted in the neck of the bottle, and the lower portion of the plug is adapted to extend slightly within the valve C. This plug is provided with a bore 17, preferably tapered, which bore extends through the plug from top to bottom and is narrowest at the bottom. In the detail construction of the plug it comprises a body 18 and a stem or shank 19 of less external dimensions than the body. The body is provided with a series of recesses 20 in its upper surface at the periphery, as shown in Fig. 4, and likewise in the upper surface of the plug at its periphery a T-shaped recess 21 is formed, and in the rear wall of the upright portion of this recess a narrower or thinner extension-recess 22 is produced, as shown in Figs. 2 and 4. In the under surface of the body 18 of the plug D at its periphery recesses 23 are produced, and these recesses 23 alternate with the upper recesses 20, as is shown in Figs. 1, 3, and 5. Fins 24 are longitudinally formed upon the exterior of the stem or shank section of the plug or stopper D, the lower longitudinal edges of which fins are beveled correspondingly to the inclina-

tion of the inner wall of the upper portion of the valve C, since when the bottle is inverted to discharge liquid the inner wall of the valve C at its upper portion engages with the beveled surfaces 24ª of the fins, as is shown in Fig. 3. This contact limits the upward movement of the valve and steadies it. When the plug is placed in position in the neck of the bottle, the body of the plug engages with the upper portion of the neck 14 just above the annular groove 13, and likewise engages with the contracted wall 12 in the neck below the said groove, and the plug is held firmly in the neck, so that it cannot be removed, which result is obtained through the medium of a key E. (Shown in detail in Fig. 6.) This key is practically T-shaped and is adapted to fit in the T-recess 21 and extend into the annular groove 13. The key consists of a rectangular body 25 and a thinner member 26, which extends from one side of the body 25 at the center thereof and at right angles to the body. After the plug has been placed in the neck the key is dropped into the recess 21 in the manner shown in dotted lines in Fig. 1, whereupon the thinner section 26 of the plug will enter the extension 22 of the T-groove 21, and the body or main portion of the key will pass down in the vertical portion of this groove. By shaking the bottle or directing the key with a suitable instrument the body or main portion of the key will take its position in the longer or horizontal portion of the T-slot, as shown in Fig. 2, and will extend into the annular groove 13, while the thinner member 26 of the key will be lodged in the main upright portion of the T-groove 21, as is shown in the same figure. This plug may be cemented in place, if desired; but in practice it has been found that a cement is not absolutely necessary, as after the key is in place it cannot be removed without damaging the key or the stopper, no matter what character of instrument may be introduced into the mouth of the bottle, as the bottom portion of the key cannot be reached.

When liquid is to be poured from the bottle, the bottle is inverted, as shown in Fig. 3. The valve then moves forward, permitting the liquid to enter the expanded or enlarged portion 11 of the neck and pass between the fins 24 to the bore 17 in the plug D and through the bore to the mouth of the bottle. The air meanwhile enters the bottle through the recesses 20 and 23 in the plug, as indicated by the arrows in Fig. 3.

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

1. A bottle the neck of which is provided with adjacent enlargements, a valve adapted to be seated at the bottom portion of the neck, a plug or stopper secured in the said neck, extending past one enlargement and into the next, the said plug or stopper having a longitudinal bore and an exterior enlargement at its upper portion, in which enlargement marginal recesses are produced at the top and bottom thereof, the two series of recesses being alternately placed, as described.

2. A bottle, the neck of which is provided with an interior enlargement and a second enlargement below the upper one, a valve adapted to seat itself at the bottom portion of the neck and enter the lower enlargement in the neck, a plug comprising a body and a reduced shank, the body and shank having a continuous longitudinal bore or opening, the enlarged portion of the body being adapted to vertically cross the upper enlargement in the neck, the said upper portion of the body having marginal upper and lower recesses alternately arranged, the lower recesses communicating with the lower enlarged portion of the neck and the upper enlarged portion, and the upper recesses communicating with the upper enlarged portion of the neck and that portion of the neck above the plug, for the purpose described.

3. A bottle, the neck of which is provided with an interior enlargement and a second enlargement below the upper one, a valve adapted to seat itself at the bottom portion of the neck and enter the lower enlargement in the neck, a plug comprising a body and a reduced shank, the body and shank having a continuous longitudinal bore or opening, the enlarged portion of the body being adapted to span the upper enlargement in the neck, the said upper portion of the body having marginal upper and lower recesses alternately arranged, the lower recesses communicating with the lower enlarged portion of the neck and the upper enlarged portion, and the upper recesses communicating with the upper enlarged portion of the neck and that portion of the neck above the plug, fins located exteriorly on the reduced portion of the plug or stopper, adapted to seat the valve when the bottle is inclined, and a locking device for the plug or stopper, arranged to enter an irregular recess in the upper marginal portion of said plug or stopper and the upper enlarged section of the neck, for the purpose specified.

4. The combination, with the neck and body of a bottle, the neck being provided between its top and bottom portions with an interior annular groove and an interiorly-enlarged section below the groove, together with inclined inner surfaces where the body and neck connect, of a hollow valve having a conical upper portion adapted to seat itself on the lower inclined surface of the neck, the said valve being provided with a curved tailpiece, adapted when the valve is in an open position to engage with the inner surface of the body of the bottle where the body connects with the neck, a plug having a bore-opening extending through from end to end, said plug comprising a body and an exteriorly-reduced stem, which body is provided with upper and lower marginal recesses and with an upper T-shaped recess at its margin, the upper recesses of the plug establishing communica-

tion between the inner groove in the neck and the mouth of the bottle, the lower recesses establishing communication between the enlarged section below the groove and said groove, fins located exteriorly on the stem-section of the plug or stopper, the lower longitudinal edges of said fins being inclined, forming seats for the valve when the bottle is inclined, and a T-shaped key which is fitted in the T-recess in the plug, a portion of the key entering the interior groove in the neck, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN SYLVESTER HAGGERTY.

Witnesses:
CHARLES S. DRESSLER,
GEORGE L. BROWN.