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J. MEERMANS.
NON-REFILLABLE BOTTLE.
APPLICATION FILED NOV. 27, 1905.

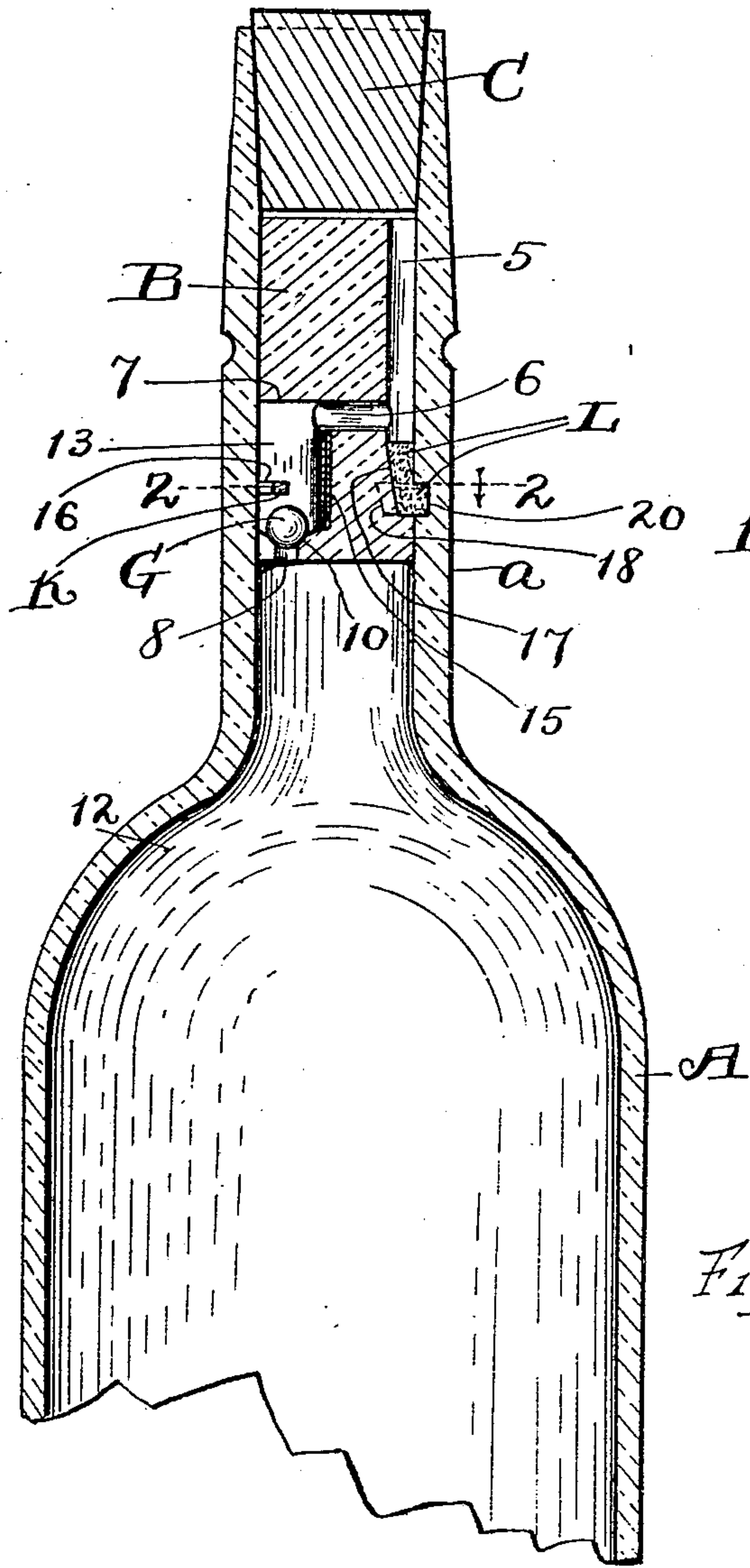


Fig. 1.

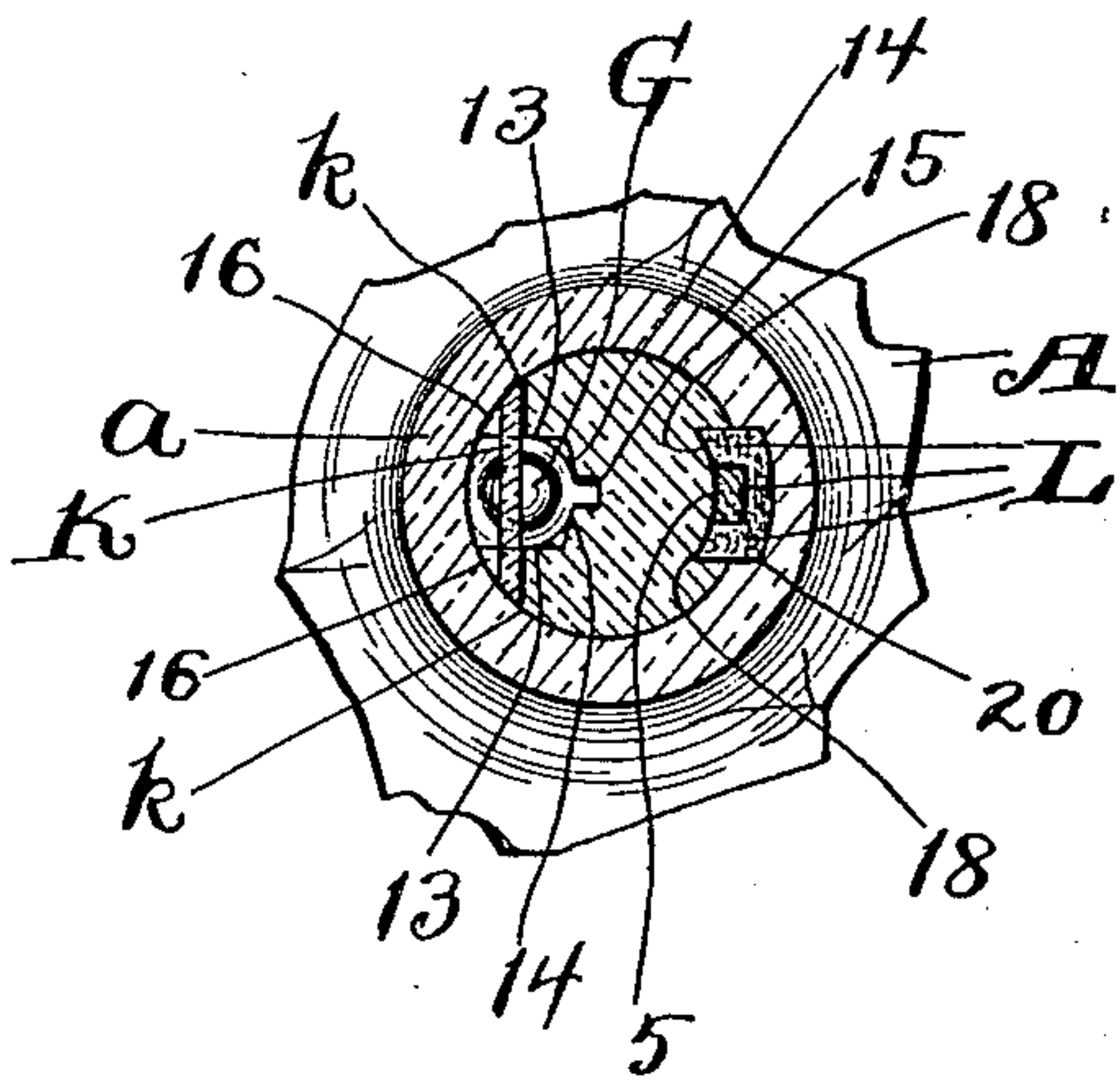


Fig. 2.

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JOHN MEERMANS, OF CLEVELAND, OHIO.

NON-REFILLABLE BOTTLE.

No. 817,500.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed November 27, 1905. Serial No. 289,286.

To all whom it may concern:

Be it known that I, JOHN MEERMANS, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Non-Refillable Bottles; and I 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 pertains to make and use the same.

This invention relates to an improved non-refillable bottle.

The primary object of this invention is to provide a bottle of the character indicated which is exceedingly simple in construction and reliable.

With this object in view this invention consists in certain peculiarities of construction and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a central vertical section of the upper portion of a non-refillable bottle embodying my invention. Fig. 2 is a horizontal section on line 2 2, Fig. 1, looking downwardly.

Referring to the drawings, A indicates the body portion of my improved bottle, and *a* the cylindrical neck of the bottle. The neck *a* is provided interiorly with a correspondingly cylindrical plug or stopper B, made of suitable material—such, for instance, as glass or porcelain. The stopper B snugly fits interiorly of the neck *a*. The stopper B is arranged within the neck *a* a suitable distance below the upper or outer extremity of the neck to accommodate the introduction of an ordinary cork C into the said neck above the stopper B.

The stopper B is provided in its upper portion and at one side with a vertically-arranged groove 5, which extends downwardly from the upper extremity of the stopper into suitable proximity to the lower end of the stopper.

The stopper B is provided, preferably centrally between its upper and lower ends, with a passage-way 6, arranged horizontally and extending transversely of the stopper from the groove 5 to the upper end of a chamber or recess 7, formed in the lower portion of the stopper. The transverse passage-way 6 therefore communicates at one end with the groove 5 and at its other end with the recess or chamber 7. The chamber 7 extends

downwardly from the passage-way 6 into suitable proximity but not quite to the lower extremity of the stopper B, and the bottom wall of the said chamber is provided with a perforation 8 and has the contour required to form a valve-seat 10 around the upper end of the said perforation for a ball-valve G, which normally closes the upper end of the said perforation in the upright and standing position of the bottle. The perforation 8 is in communication at its lower end with the interior chamber 12 of the body portion of the bottle.

The chamber 7 extends to the circumferential or exterior surface of the stopper B and has two opposite side walls 13 and 13 and an outwardly-facing central inner side wall 14, as shown very clearly in Fig. 2. Each wall 13 is provided a short distance above the valve G with a recess 16, which extends to the circumferential or exterior surface of the stopper B and is arranged in line laterally with the recess 16 in the opposite wall 13. The recesses 16 in the walls 13 are engaged by a cross-bar K, which is beveled at the ends, with the said ends flush, as at *k*, with the exterior surface of the stopper B. The bar K is arranged in such proximity to the valve G and to the wall 14 that it does not interfere with the separation of the valve far enough from the valve-seat 10 to accommodate the pouring of liquid from the bottle, but prevents the valve from moving to the adjacent end of the passage-way 6 in pouring liquid from the bottle. Preferably the wall 14 is provided with a groove 15, which extends downwardly from the passage-way 6 and facilitates the flow in pouring liquid from the bottle.

It will be observed that the bar K, extending flush with the circumferential or exterior surface of the stopper B at both ends of the bar and being arranged next to the outwardly-facing side walls of the recesses 16, cannot become displaced laterally, because the interior surface of the bottle-neck *a* and the said walls of the said recesses prevent displacement of the bar laterally in opposite directions, respectively.

A not unimportant feature of my invention consists in the extension of the groove 5 below the passage-way 6. The groove 5 is preferably gradually reduced transversely toward the lower end of the groove, as at 17, Fig. 1, and the said lower portion of the said

groove is enlarged circumferentially of the stopper B in opposite directions, as at 18. The enlargements 18 of the lower end of the groove 5 register with a recess 20, formed within and interiorly of the bottle-neck a. The lower portion of the groove 5 below the passage-way 6 and the enlargements 18 of the lower end of the said groove and the recess 20 in the bottle-neck are occupied by a suitable cement or filling L, which is forced into its place from the outer end of the groove 5. It will therefore be observed that the groove 5 performs the function of a passage-way in pouring liquid from the bottle as well as means for permitting the application of the filling L. It will also be observed that the cement or filling L effectually locks the stopper B to the neck of the bottle, and the construction is such that the successful application and operation of a drill to the end in view of unlocking the stopper from the neck is an impossibility. It will be observed, furthermore, that the chamber 7 and the perforation 10 form a passage-way provided with a valve G, and I would have it understood that my invention broadly embraces the combination, with a bottle having a neck, of a stopper arranged within the neck and provided with the following: a passage-way formed at a suitable point between the upper and lower ends of and extending transversely of the stopper, a valved passage-way extending downwardly from one end of the transverse passage-way and communicating with the interior chamber of the body portion of the bottle, a groove formed in and exteriorly of the stopper and extending from the upper extremity of the stopper into communication with and downwardly below the transverse passage-way, and a filling occupying the said groove below the transverse passage-way and extending into the neck of the bottle.

What I claim is—

1. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way arranged centrally between the upper and lower ends and extending transversely of the stopper; a chamber formed in one side of the lower portion of the stopper at one end of and in communication with the said passage-way, which chamber is provided in its bottom with a perforation which is in communication with the interior chamber of the body portion of the bottle; a valve normally closing the said perforation; a groove formed in the opposite side of the stopper and extending from the upper end of the stopper to the opposite end of and in communication with and downwardly below the transverse passage-way, which groove is enlarged circumferentially of the stopper a suitable distance below the transverse passage-way, and a filling occupy-

ing the circumferentially-enlarged portion of the groove and extending into the neck of the bottle.

2. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way arranged at a suitable point between the upper and lower ends and extending transversely of the stopper; a chamber formed in the lower portion of the stopper at one end of and in communication with the said passage-way, which chamber is provided in its bottom with a perforation which is in communication with the interior chamber of the body portion of the bottle; a valve normally closing the said perforation; a groove formed in the exterior of the stopper and extending from the upper end of the stopper to the opposite end of and into communication with and downwardly below the transverse passage-way, which groove is enlarged circumferentially of the stopper a suitable distance below the transverse passage-way, and a filling occupying the enlargement of the groove and extending into the neck of the bottle.

3. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way arranged at a suitable point between the upper and lower ends and extending transversely of the stopper; a chamber formed in the lower portion of the stopper at one end of and in communication with the said passage-way, which chamber is provided in its bottom with a perforation which is in communication with the interior chamber of the body portion of the bottle; a valve normally closing the said perforation; a groove formed in the exterior of the stopper and extending from the upper end of the stopper to the opposite end of and into communication with and downwardly below the transverse passage-way, and a filling occupying the groove below the transverse passage-way and extending into the neck of the bottle.

4. The combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends and extending transversely of the stopper; a valved passage-way extending downwardly from one end of the transverse passage-way and communicating with the interior chamber of the body portion of the bottle; a groove formed in and exteriorly of the stopper at the opposite end of the transverse passage-way and extending from the upper extremity of the stopper into communication with and downwardly below the transverse passage-way, which groove is gradually reduced transversely below the transverse passage-way and toward its lower end and is enlarged at

the said end circumferentially of the stopper, and a filling occupying the enlargement of the groove and extending into the neck of the bottle.

5 5. The combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends and extending transversely of the stopper; a valved pas-
10 sage-way extending downwardly from one end of the transverse passage-way and communicating with the interior chamber of the body portion of the bottle; a groove formed
15 in and exteriorly of the stopper at the opposite end of the transverse passage-way and extending from the upper extremity of the stopper into communication with and downwardly below the transverse passage-way,
20 which groove is enlarged at its lower end circumferentially of the stopper in opposite directions, and a filling occupying the enlargement of the groove and extending into the neck of the bottle.

25 6. The combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends and extending transversely of the stopper; a valved pas-
30 sage-way extending downwardly from one end of the transverse passage-way and communicating with the interior chamber of the body portion of the bottle; a groove formed
35 in and exteriorly of the stopper at the opposite end of the transverse passage-way and extending from the upper extremity of the stopper into communication with and downwardly below the transverse passage-way,
40 and a filling occupying the said groove below the transverse passage-way and extending into the neck of the bottle.

7. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper
45 within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends of and extending transversely of the stopper; a groove formed in and exteriorly of one side of the stopper and extending
50 from the upper extremity of the stopper downwardly into communication with the aforesaid passage-way; a chamber formed in the lower portion of the stopper at and extending to the exterior surface of the opposite side of the stopper, which chamber has a bottom provided with a perforation communicating with the interior chamber of the body portion of the bottle; a ball-valve seated
55 upon the said bottom and normally closing the said perforation, and a cross-bar extending over the valve and transversely of the aforesaid chamber in the stopper, all relatively arranged substantially as and for the purpose set forth.
65

8. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper
70 and lower ends of and extending transversely of the stopper, which passage-way has an outlet at one end; a chamber formed in the lower portion of the stopper at the opposite end of the aforesaid passage-way and extending
75 to the exterior surface of the stopper, which chamber has a bottom provided with a perforation communicating with the interior chamber of the body portion of the bottle; a ball-valve seated upon the said bottom and
80 normally closing the said perforation, and the aforesaid chamber in the stopper having two opposite side walls and a central outwardly-facing inner wall which has a groove extending downwardly from the aforesaid
85 transverse passage-way, and a cross-bar extending over the valve and transversely of the last-mentioned chamber, which is supported from the aforesaid opposite walls of the last-mentioned chamber, all relatively arranged substantially as and for the purpose set forth.
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9. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided
95 with the following: a passage-way formed at a suitable point between the upper and lower ends of and extending transversely of the stopper, which passage-way has an outlet at one end; a chamber formed in the lower
100 portion of the stopper at the opposite end of the aforesaid passage-way and extending to the exterior surface of the stopper, which chamber has a bottom provided with a perforation communicating with the interior chamber of the body portion of the bottle; a ball-valve seated upon the said bottom and normally closing the said perforation, and the aforesaid chamber in the stopper having two
105 opposite side walls provided with recesses extending to the exterior surface of the stopper, and a cross-bar extending over the valve and transversely of the last-mentioned chamber and engaging the said recesses, which bar extends at the ends flush with the exterior
110 surface of the stopper, all relatively arranged substantially as and for the purpose set forth.
115

10. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided
120 with the following: a passage-way formed at a suitable point between the upper and lower ends of and extending transversely of the stopper, which passage-way has an outlet at one end; a chamber formed in the lower
125 portion of the stopper at the opposite end of the aforesaid passage-way and extending to the exterior surface of the stopper, which chamber has a bottom provided with a perforation communicating with the interior cham-
130

of the body portion of the bottle; a ball-valve seated upon the said bottom and normally closing the said perforation, and the aforesaid chamber in the stopper having two
5 opposite side walls provided with recesses extending to the exterior surface of the stopper, and a cross-bar extending over the valve and transversely of the last-mentioned chamber and engaging the aforesaid recesses, all relatively arranged substantially as and for the
10 purpose set forth.

11. A non-refillable bottle having a neck and provided interiorly of the said neck with a stopper provided with the following: a
15 chamber formed in the lower portion of the stopper, with the bottom wall of the chamber provided with a perforation communicat-

ing with the interior chamber of the body portion of the bottle; a valve contained within the chamber and normally closing the said
20 perforation, and a groove formed in one of the side walls of the chamber and extending from the valve-seat upwardly a suitable distance, and a passage-way communicating at one end with the said groove and formed in
25 and extending transversely of the stopper, said passage-way being provided at its other end with an outlet.

In testimony whereof I sign the foregoing specification in the presence of two witnesses. 30
JOHN MEERMANS.

Witnesses:

C. H. DORER,
B. C. BROWN.