

No. 726,223.

PATENTED APR. 21, 1903.

E. HOERICHS.
NON-REFILLABLE BOTTLE.
APPLICATION FILED MAR. 24, 1902.

NO MODEL.

Fig. 1.

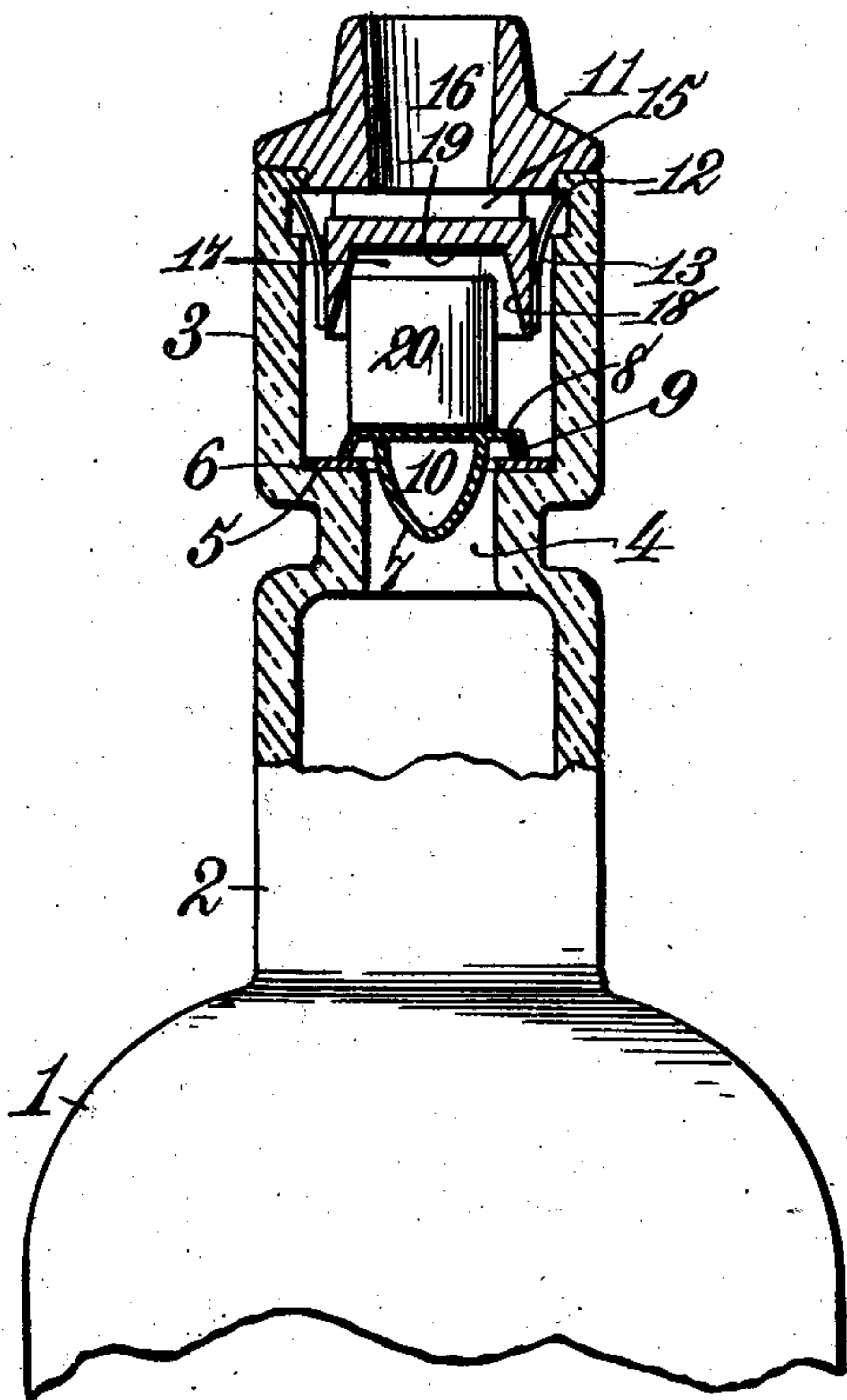


Fig. 2.

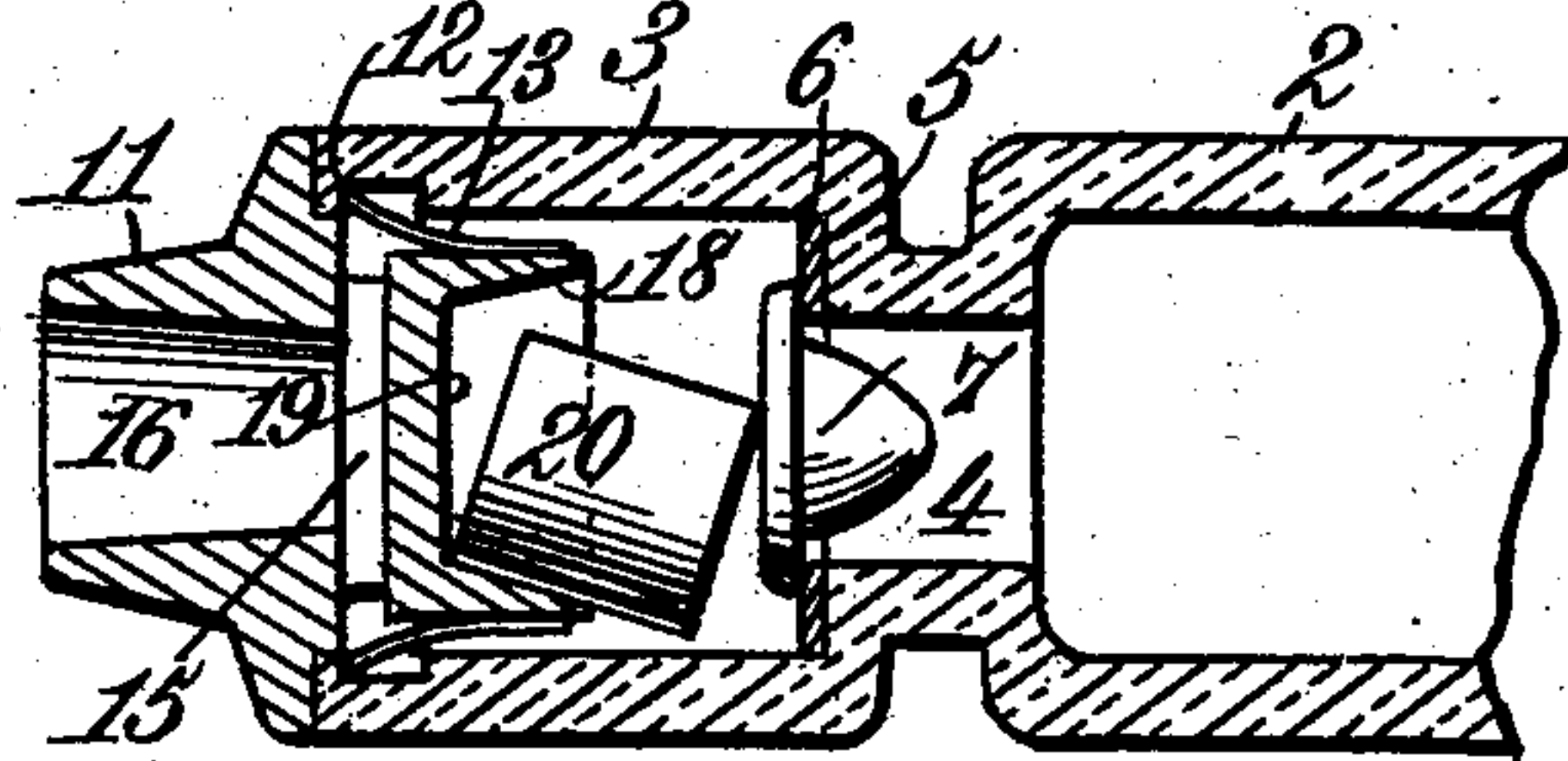


Fig. 3.

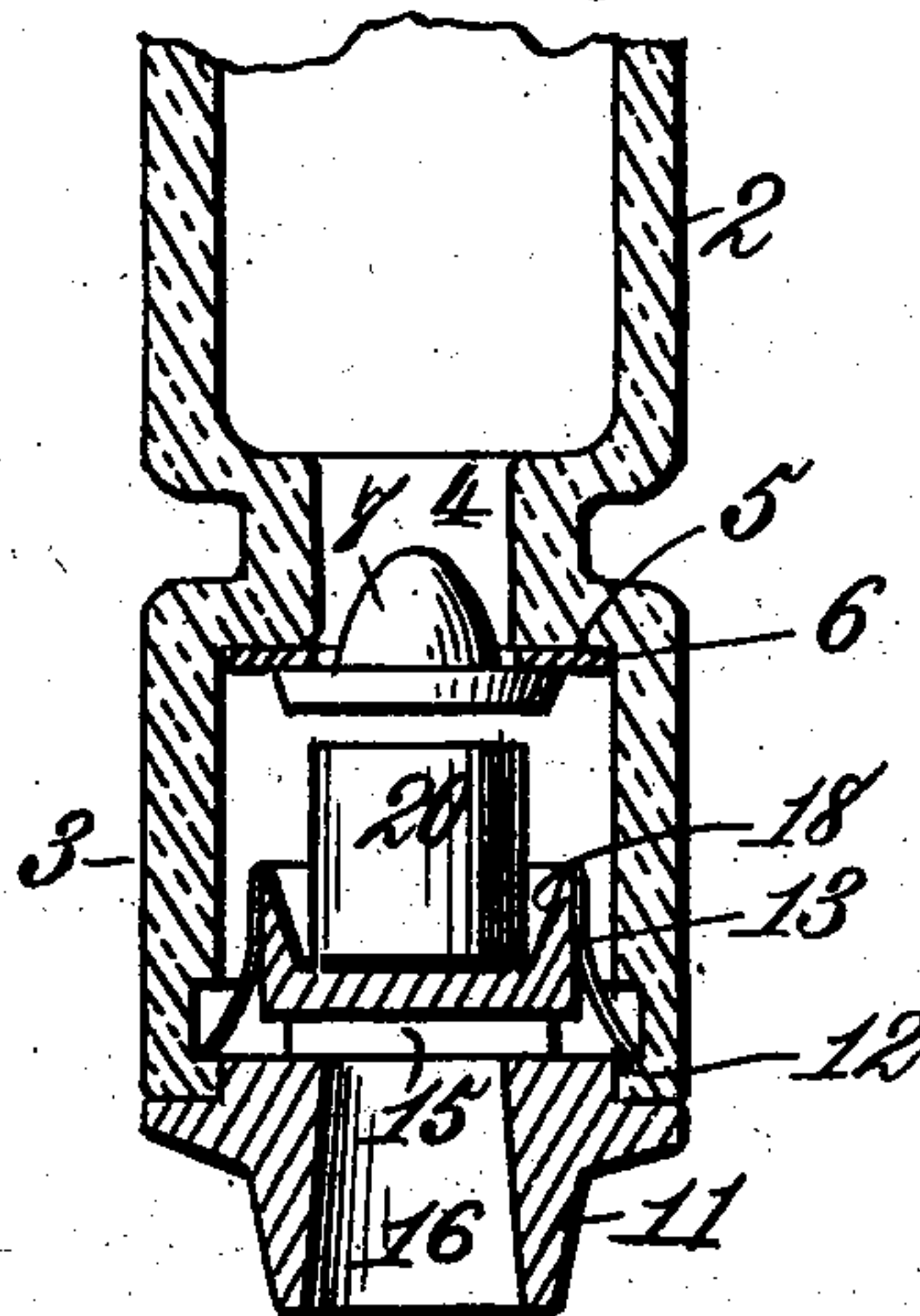


Fig. 4.

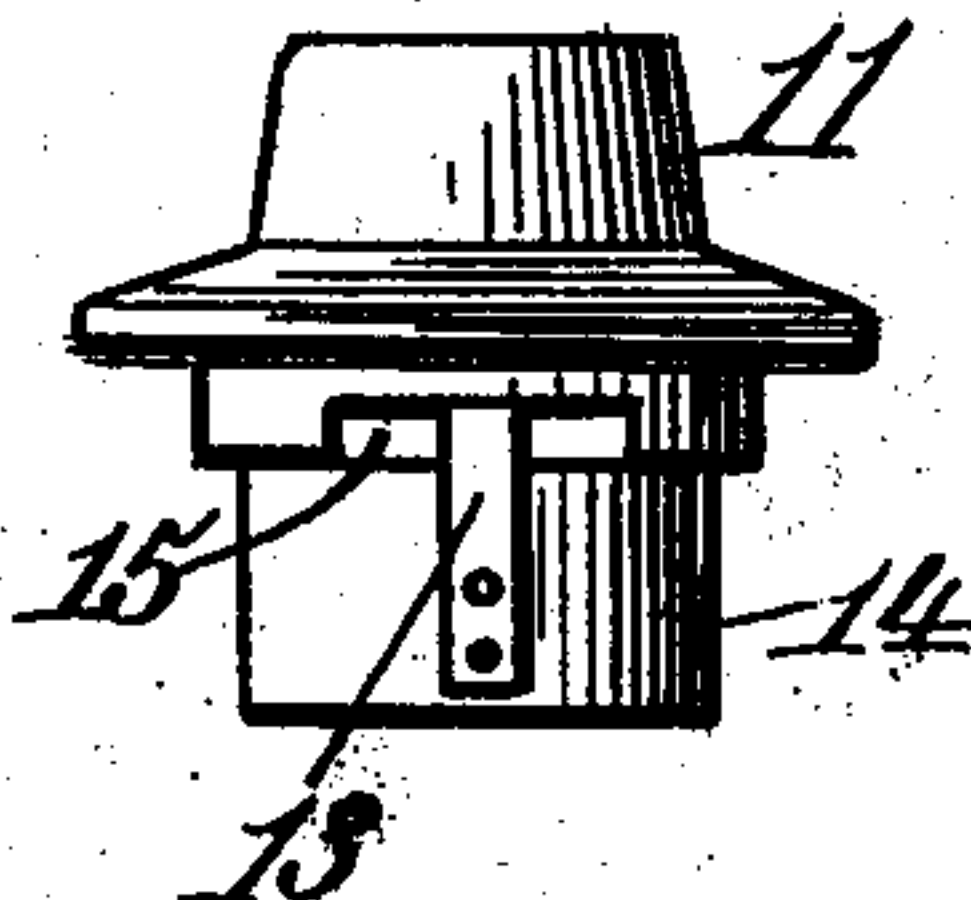


Fig. 5.



Fig. 6.



Witnesses,
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UNITED STATES PATENT OFFICE.

EDWARD HOERICHS, OF BALTIMORE, MARYLAND, ASSIGNOR OF TWO-THIRDS TO THOMAS A. BRYAN AND CHARLES H. BOONE, OF BALTIMORE, MARYLAND.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 726,223, dated April 21, 1903.

Application filed March 24, 1902. Serial No. 99,731. (No model.)

To all whom it may concern:

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

My invention relates to an improvement in non-refillable bottles, and has for its general object to provide a simple and novel construction and arrangement of parts located within the bottle-neck, which parts include valve mechanism and operate in such manner as to permit the ready flow of a liquid from the bottle, while rendering it impossible to pour a liquid into the bottle.

Detail objects of the invention will appear from the description to follow and that which I claim will be set forth specifically in the claim at the end of the specification.

In order that my invention may be fully understood, I have illustrated the same in the accompanying drawings, in which—

Figure 1 is a sectional view through the upper portion of the bottle with my improved mechanism located in position, the bottle being in an upright position. Fig. 2 is a similar view, the bottle being turned on its side to illustrate the manner in which the weight will close the valve in this position. Fig. 3 is a similar view, the bottle being inverted to show the manner in which the valve will operate should a vacuum be formed in the bottle and then liquid allowed to enter. Fig. 4 is a detail view of the plug. Fig. 5 is a detail view of the weight, and Fig. 6 is a detail view of the valve.

Referring to the drawings, the numeral 1 indicates a bottle having a contracted neck portion 2 and an enlarged portion or head 3, between the bottle and which head is a channel or opening 4. The head 3 is provided in its lower portion or bottom with a valve-seat 5, upon which I preferably locate a washer 6, of paper or other soft material.

7 indicates my improved valve, which is made hollow, so as to be capable of floating, and is preferably constructed of aluminium. Said valve comprises a flat top 8, having a di-

verging annular flange 9, the lower edge of which forms the seat proper of the valve. Secured to the top 8 and extending downward from the same is a tapering hollow body 10, which is adapted to pass into the opening 4 and center the valve upon its seat.

11 indicates the stopper, which is adapted to be secured in the bottle in a manner to prevent its removal. To this end the head 3 is provided with an annular recess affording a shoulder 12, and said stopper 11 is provided on opposite sides with spring members 13, which diverge upwardly from the body of the stopper, so that when said stopper is inserted in the head 3 or mouth of the bottle said spring members 13 will spring out beneath the shoulder 12 and prevent removal of the stopper. In order to provide for permitting the liquid to be poured from the bottle through said stopper, while at the same time preventing access to the valve mechanism, I form a reduced portion 14 to the stopper 11, and through this reduced portion extends a transverse aperture 15, which communicates with an opening 16, extending at right angles from said aperture 15 through the upper side of the stopper 11. The bottom of the stopper 11 is provided with a recess 17, having a diverging or inclined wall 18. Between the opening 15 and the recess 17 it will be seen that a wall 19 is afforded, which will prevent an implement being inserted through the stopper to open the valve.

20 indicates a cylindrical weight, of metal or glass, which normally rests upon the top 8 of the valve 7 and is of such height that when in position it does not quite reach to the wall 19, so that when the bottle is turned up to pour liquid therefrom said weight may fall from the valve and permit it to be lifted from its seat by the outgoing liquid. When the bottle is in an upright position, the weight 20 will rest upon the valve and press the edge of the flange 9 firmly into the paper or other soft material 6 and prevent liquid from passing to the interior of the bottle.

In bottles of the non-refillable type there are two objections which can usually be cited: First, either the bottle may be placed upon

its side to permit the valve to fall from its seat and then submerged in the liquid, which will be allowed to enter slowly, or else the bottle can be turned upside down and a vacuum formed therein and liquid thus be conveyed into the interior. In the construction which I have invented should the bottle be turned upon its side the weight 20, owing to the provision of the inclined wall 18, will fall over, as indicated in Fig. 2, and one or the other edge portion of said weight will press upon the valve and force it to its seat. Should the bottle be subjected to the vacuum test, the float-valve 7 will rise to its seat on the surface of the inflowing liquid, and as soon as it reaches its seat the vacuum within the bottle will cause it to adhere thereto firmly, so that it will be impossible for any liquid to enter. While I prefer to make the valve 7 of aluminium for the sake of lightness and durability, it will be manifest that any suitable material may be employed for this purpose. It will be seen that my invention presents an exceedingly simple, durable, and economical construction and that it is accurate and reliable in operation.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

In combination with a bottle having a valve-seat formed in its neck and a contracted opening leading through said seat, a float-valve located on said seat comprising a flat top portion having an annular flange extending downwardly therefrom to form the seat proper of the valve, and a hollow downwardly-depending portion adapted to extend into, but out of contact with the wall of said contracted opening, a cylindrical weight normally resting on the top of said valve, a plug secured in the neck of said bottle and having in its lower end a recess for receiving the upper end of said weight, said recess having an inclined wall and said plug having passages therein to permit the liquid to be poured from the bottle.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDWARD HOERICHS.

Witnesses:

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GEO. W. REA.