(No Model.)

A. H. MEECH.

NON-REFILLABLE BOTTLE.

No. 592,157. Patented Oct. 19, 1897.

Fig. 1.

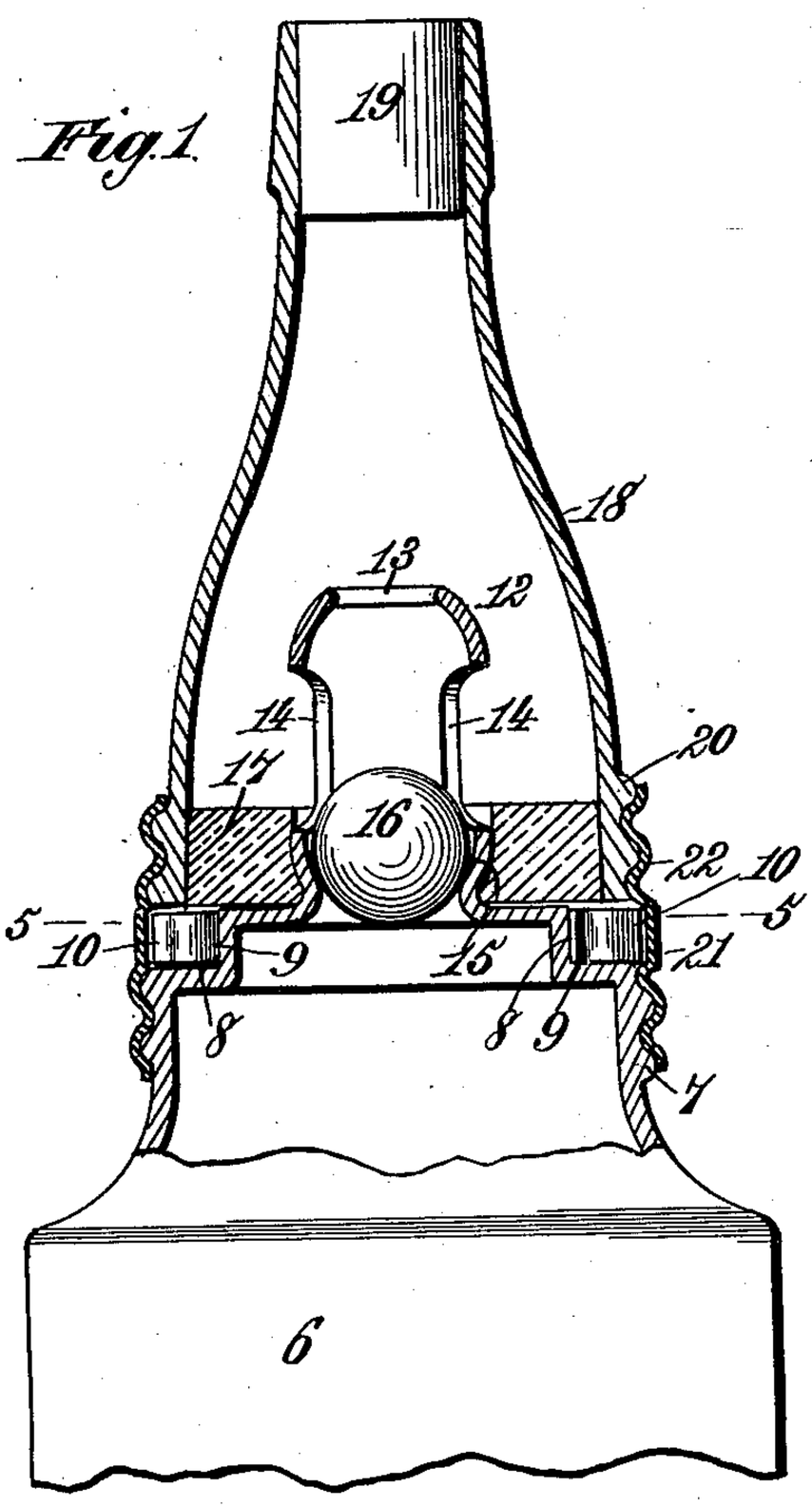


Fig. 2.

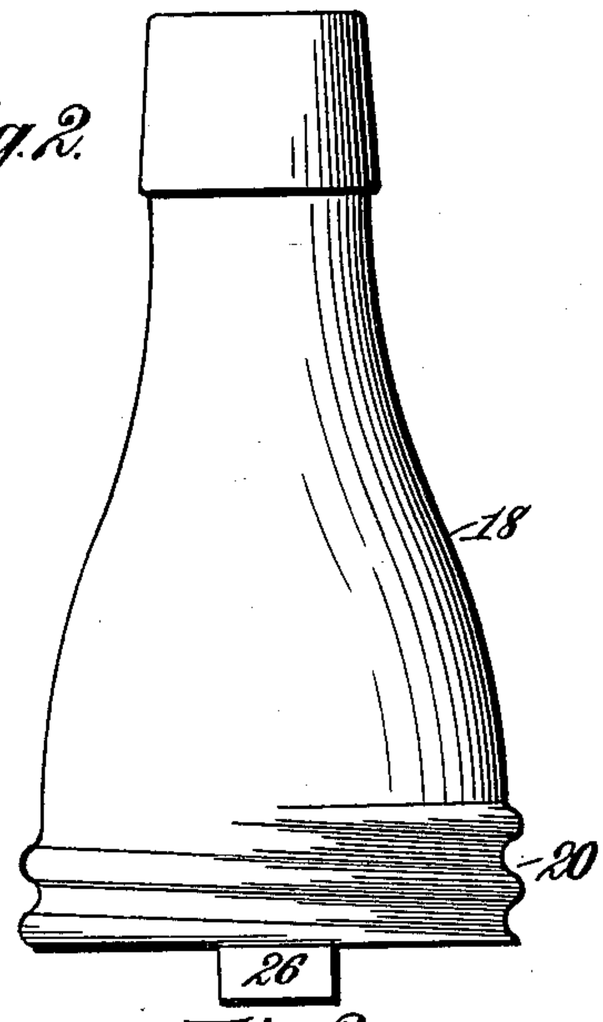


Fig. 3.

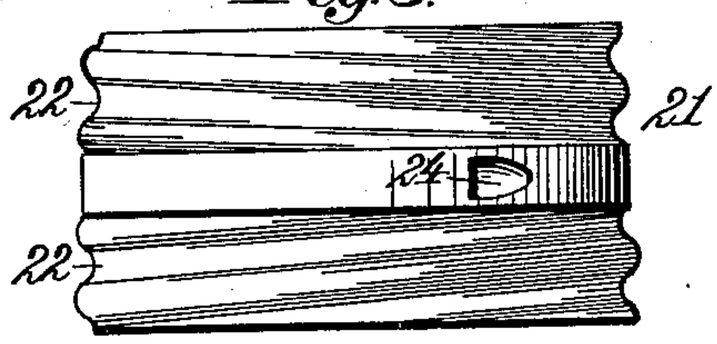


Fig. 4.

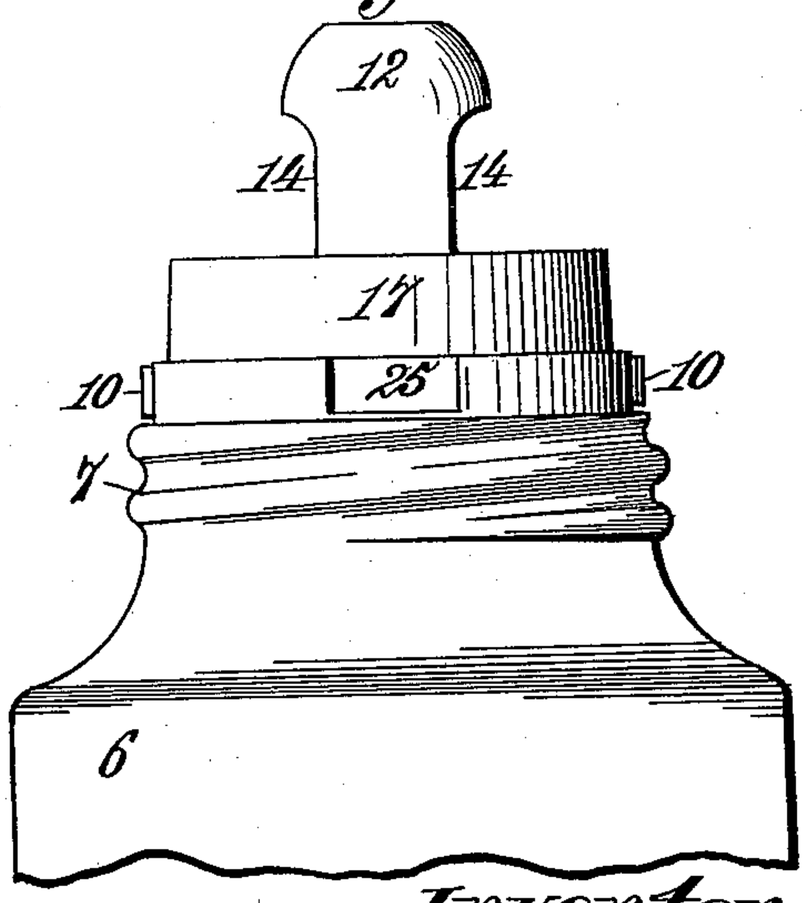
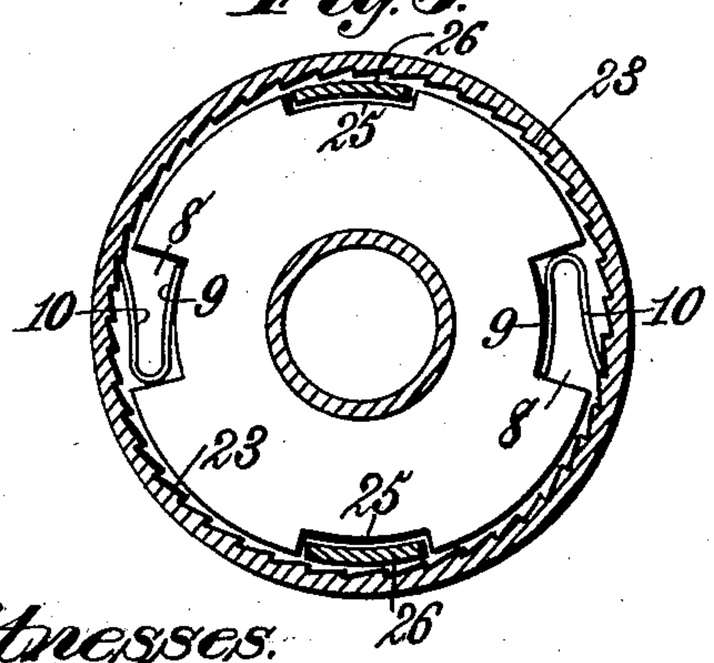


Fig. 5.



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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 592,157, dated October 19, 1897.

Application filed February 27, 1897. Serial No. 625,397. (No model.)

To all whom it may concern:

Be it known that I, ALFRED H. MEECH, a citizen of the United States, residing at Chatham, in the county of Columbia and State of New York, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to that class or type of non-refillable bottles wherein a separate bottle-neck is connected with the bottle-body and a ball-valve is employed which permits the contents of the bottle to be discharged, but prevents the introduction of a liquid or substance into the bottle-body, so that it is impracticable to introduce an inferior liquid or substance into the bottle after the original contents has been discharged.

The chief objects of my present invention are to improve the prior construction of bottles of the character referred to; to provide a new and improved non-refillable bottle, and to provide novel, simple, efficient, and economical means for connecting a separate bottle-neck with a bottle-body in such manner that the bottle can be readily filled while the neck is detached therefrom and the neck when applied cannot possibly be detached without such breakage of parts as would indicate or show that the package had been tampered with. These objects are accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a non-refillable bottle constructed in accordance with my invention. Fig. 2 is a side elevation of the separate bottle-neck. Fig. 3 is a side elevation of the screw collar or ring for rigidly connecting the bottle-neck to the bottle-body. Fig. 4 is a broken side elevation of the bottle-body; and Fig. 5 is a sectional view taken on the line 5 5, Fig. 1.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 6 indicates a bottle-body which may be of any desired form or shape. This bottle-body is formed with an external screw-thread 7 and directly above the same it is constructed with two opposite chambers or recesses 8, designed to contain spring-pawls, each of which is composed of an approximately U-shaped piece of elastic metal having two arms or members 9 and 10, one of which lies in one of the chambers or recesses and abuts an end portion thereof, as best seen in Fig. 5, while the other is adapted to spring into engagement with ratchet-teeth formed on the interior of a collar or ring, as will more fully hereinafter appear.

The top portion of the bottle-body is contracted and extended into a vertical cylindrical cage 12, having an orifice 13 in its upper end and lateral orifices 14 in its sides. The lower portion of the cage 12 is made concave, as at 15, to constitute a valve-seat for a ball-valve 16, which is adapted to be inserted into the cage through either one of the lateral orifices 14. The ball-valve is prevented from passing out of the cage through either of the lateral orifices 14 through the medium of a packing-ring 17, which is fitted to the upper end of the bottle-body around the cage and is of such height that it projects above the lower edges of the openings 14, thus offering obstructions to the exit of the ball-valve from the cage, as the diameter of the ball renders it impossible for it to pass through either orifice 14 after the packing-ring 17 has been fitted into position, as clearly shown in Fig. 1. The packing-ring 17 is preferably composed of a disk-shaped piece of cork with a central orifice, but it may be of any material suitable for the purpose, and it is adapted to tightly fit into the lower end of a separate bottle-neck 18, designed to receive an ordinary cork 19 in its upper end. The cork or other packing-disk 17 makes an air-tight connection between the bottle-neck and the bottle-body when these parts are connected together. The lower end of the bottle-neck is provided with an external screw-thread 20, and it is rigidly connected with the bottle-body through the medium of a collar or ring 21, having right and left hand screw-threads 22, designed to engage, respectively, the screw-threads 20 of the bottle-neck and the screw-threads 7 of the bottle-body. The circular portion of the ring or collar lying between the screw-threads 22 is formed inter-

nally with an annular row of ratchet-teeth 23, the construction being such that when the collar or ring is screwed into position it draws the bottle-neck and the bottle-body tightly together and the elastic arms 10 of the spring-pawls spring into engagement with the ratchet-teeth 23, thereby effectually preventing the collar or ring from being unscrewed when it has been screwed into position to rigidly connect the bottle-neck with the bottle-body.

The exterior of the collar or ring is preferably constructed with recesses, as at 24, for the application of a suitable instrument by which to screw the collar or ring into position.

In order to prevent the bottle-neck from being unscrewed from the collar or ring after the parts have been properly connected, I construct the top portion of the bottle-body with opposite sockets 25, adapted to receive pendent lugs or projections 26 on the lower end of the bottle-neck. As the collar or ring is screwed into position the bottle-neck and the bottle-body will be drawn together and the lugs or projections 26 will enter the sockets 25, thereby preventing any rotary motion of the bottle-neck independent of the bottle-body. It will be obvious, therefore, that the bottle-neck is permanently and rigidly connected with the bottle-body, and since the ball-valve permits outflow of liquid or substance from the bottle-body, but prevents inflow of liquid or substance thereinto, it is impracticable to refill the bottle after the original contents has been discharged.

This bottle is particularly designed for containing catsup, which is a comparatively thick-bodied substance which will not readily flow through very contracted passages. For this reason I construct the cage in the manner described and shown, so that if the bottle be tilted or turned upside down the catsup will readily flow out through the lateral orifices 14 into a comparatively large space surrounding the cage.

Although I have described and shown the screw-threads on the bottle-neck and bottle-body and in the ring or collar as right and left screw-threads, I do not wish to be understood as restricting myself to right and left hand screw-threads.

My invention provides a novel, simple, efficient, and economical bottle which will permit the contents to be readily discharged whenever desired, but renders it impracticable to refill the bottle with an inferior substance and represent it as the original package. If an attempt is made to fill the bottle while it stands upright, the ball-valve will tightly seat upon the valve-seat 15 and thus prevent the entrance of a liquid or substance into the bottle-body. If the bottle is turned approximately horizontal and an attempt is made to force a liquid or substance into the bottle-body, the liquid or substance will enter the orifice 13 and float or force the ball-valve 16 to its seat.

Having thus described my invention, what I claim is—

1. The combination with a bottle-body, and a separate bottle-neck, each having a screw-threaded portion, of an external screw-threaded collar connecting the bottle-neck with the bottle-body, a spring-pawl and ratchet engaging said neck and body and preventing the collar from being turned backward to unscrew the parts, and a ball-valve arranged in the bottle-body to permit discharge of the contents from, but prevent the introduction of a liquid or substance into the bottle-body, substantially as described.

2. The combination with a bottle-body, and a separate bottle-neck, provided, respectively, with right and left hand external screw-threads, of an external right and left hand screw-threaded collar engaging the right and left hand screw-threads of the bottle-neck and bottle-body, a spring-pawl and ratchet engaging said neck and body and preventing the collar from being unscrewed, a cage extending from the bottle-body into the bottle-neck and constructed with lateral and end orifices, and a ball-valve arranged in said cage, substantially as described.

3. The combination with a bottle-body having at its top portion chambers or recesses and a cage provided with lateral orifices, spring-pawls arranged in said chambers or recesses, a separate bottle-neck, a ball-valve in the cage, means for retaining the ball-valve therein, a screw-threaded collar engaging the bottle-neck and bottle-body and provided with an internal ratchet with which the spring-pawls engage, and means for preventing the bottle-neck from being turned independent of the bottle-body, substantially as described.

4. The combination with an externally-screw-threaded bottle-body and an externally-screw-threaded bottle-neck, of spring-pawls seated on the bottle-body, and a screw-threaded collar engaging the screw-threads of the bottle-neck and bottle-body and provided with an internal annular row of ratchet-teeth with which the spring-pawls engage, substantially as described.

5. The combination with a bottle-body having at its top portion a cage provided with lateral orifices, a packing-ring surrounding the cage, a ball-valve insertible through one of said orifices and retained in the cage by said packing-ring, a bottle-neck closed at its lower end by said packing-ring, and means for connecting the bottle-neck with the bottle-body, substantially as described.

6. The combination with a bottle-body having at its top portion chambers or recesses and a cage provided with lateral orifices, a ball-valve arranged in the cage, a packing-ring surrounding the cage, a bottle-neck closed at its lower end by said packing-ring, spring-pawls arranged in said chambers or recesses, and a screw-threaded collar connecting the bottle-neck with the bottle-body and provided with an internal ratchet with which

the spring-pawls engage, substantially as described.

7. The combination with a bottle-body having at its top portion sockets, and a cage provided with lateral orifices, spring-pawls seated in the bottle-body, a separate bottle-neck having lugs or projections to enter said sockets, and a screw-threaded collar connecting the bottle-neck and bottle-body, and having an internal ratchet with which the spring-pawls engage, substantially as described.

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

A. H. MEECH.

Witnesses:
ALBERT H. NORRIS,
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