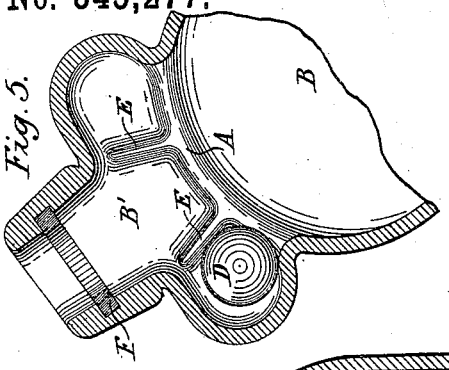
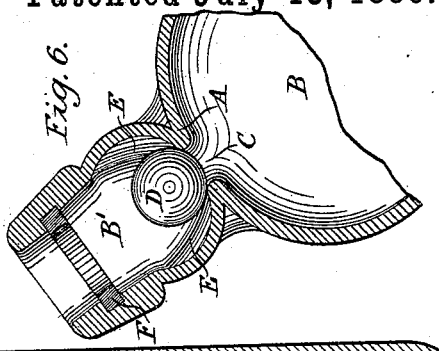
(No Model.)

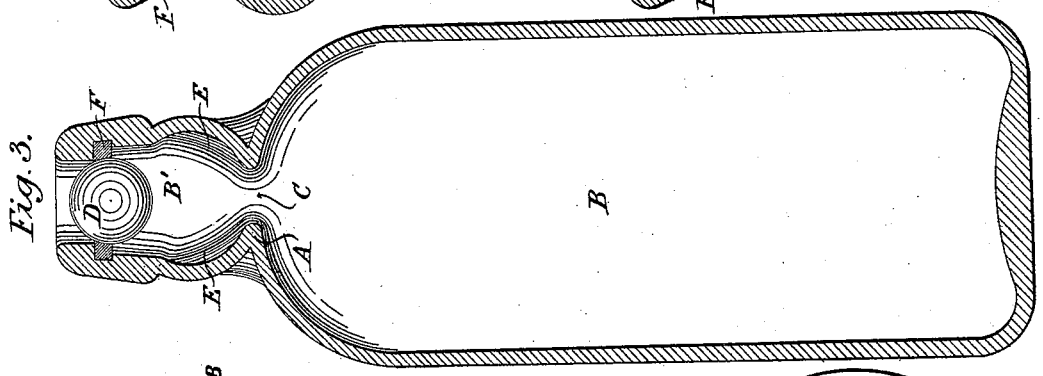
H. CODD.

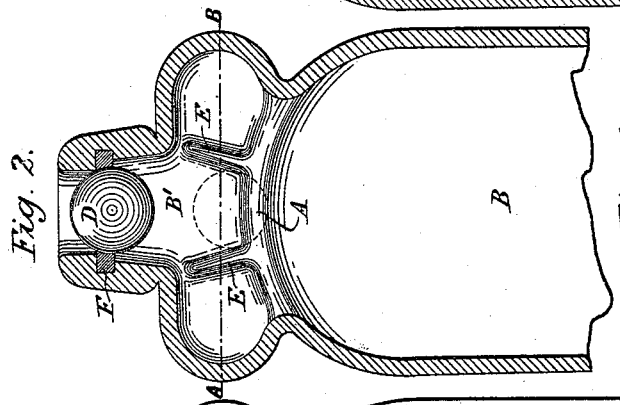
BOTTLE.

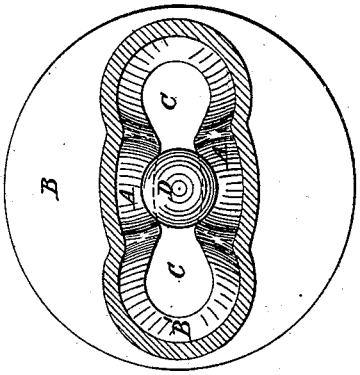
No. 345,277. Patented July 13, 1886.

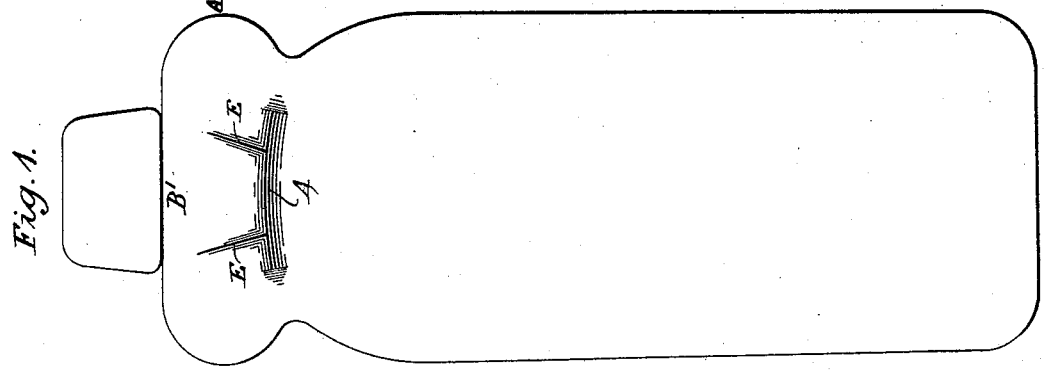












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UNITED STATES PATENT OFFICE.

HIRAM CODD, OF LONDON, ENGLAND.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 345,277, dated July 13, 1886.

Application filed January 12, 1886. Serial No. 188,346. (No model.)

To all whom it may concern:

Be it known that I, HIRAM CODD, a subject of the Queen of Great Britain, residing at 41 Gracechurch Street, in the city of London, England, bottle-manufacturer, have invented certain new and useful Improvements in Bottles and Jars, of which the following is a specification.

My invention relates to an improvement in bottles of the class which are practically without necks and have their heads close down to the tops of their bodies, air-spaces being left at the tops when the bottles are filled, and the bottles being formed with horizontal contractions all around their tops, forming, as it were, lines or divisions to mark the points up to which the bottles should be filled. If the bottle is circular, it is flattened inward on two opposite sides at the top, so that the portion of the bottle above the contraction may be of an oblong form.

The bottles are closed with internal stoppers, preferably glass balls, which fit up against elastic rings held in grooves formed around the interiors of the bottle-heads, and the two opposite sides of the upper part of a bottle so constructed are closed inward toward one another to such an extent that they come close enough together to prevent the stopper from dropping into the lower part of the bottle.

In accordance with my invention, on each of the two opposite sides of the upper part of a bottle of this class I make a pair of indentations to form internal projections passing downward from two sides of the head toward the horizontal contraction. The space left between the lower ends of these projections on one side of the bottle and the lower ends of the projections of the opposite side of the bottle is made less than the diameter of the stopper, so that it cannot pass between them. The two projections on each side of the bottle are made to converge as they approach the horizontal contraction. In this way, when the bottle is standing upright and the ball is over the center of the horizontal contraction, it must remain in that position, and cannot roll toward either end of the contracted upper part of the bottle. When in this position it is vertically below the mouth of the bottle and in such close proximity to the elastic ring that when the bottle has been filled with aerated liquid and the mouth of the bottle is suddenly relieved from pressure the gas rushing upward from the liquid in the bottle will lift the ball and carry it up to its seat, and so at once close the bottle.

When it is desired to open the bottle, the bottle should be held slightly inclined, with one end of its upper contracted portion somewhat lower than the other end, and the ball should then be pressed inward. The ball will then drop to the lower end of the contracted portion, and will remain there until the bottle is inverted, or nearly so. The contents of the bottle can therefore readily be poured out. To again get the ball over the center of the horizontal contraction, so that the bottle may be again filled, it is only necessary to invert the bottle to make the ball drop to the mouth, and then to turn the bottle in a plane at right angles to the direction in which its upper portion is contracted. When the bottle has been turned beyond a horizontal position, the ball will roll between the projections in the lower side of the bottle toward the center of the horizontal contraction, and when arrived there will be held over the center of the contraction, as above explained.

One advantage derived from forming the bottle in the above way is that it can be filled with aerated liquid when held in an upright position and be closed without inverting it in the machine, which is of importance, because in all machines in which the bottle in order to close it has had to be inverted the parts of the machine have required to be lubricated with oil, and it is difficult to keep the oil entirely away from or to prevent it coming in contact with the various beverages in the bottles.

Figure 1 of the drawings hereunto annexed shows a side elevation; Fig. 2, a vertical section taken lengthwise through the longer length of the contracted upper portion of the bottle. Fig. 3 is a vertical section taken crosswise of this contraction; and Fig. 4 is a horizontal section through the line A B, Fig. 2, of a bottle closed with an internal ball-stopper and formed in the manner above described. Fig. 5 is a longitudinal section of the bottle in the position in which it is held when being opened. Fig. 6 is a longitudinal section of

the bottle in the position in which it is held to cause the ball-stopper to roll to the center of the horizontal contraction.

A is the contraction formed across the upper part of the body of the bottle, forming a division-line between the upper part, B′, and the lower part, B, of the body of the bottle. It will be seen that the upper part, B′, is flattened in on two opposite sides, making it of an oblong form, thereby also making the opening C between the upper and lower parts, B′ B, of an oblong form and of a width somewhat less than the diameter of the ball-stopper D.

E E are converging inward projections formed by external indentations in each side of the upper part of the body of the bottle.

F is the elastic ring contained within a groove formed around the interior of the head of the bottle.

In Figs. 2 and 3 the ball-stopper is shown to be resting against the elastic ring F and closing the mouth of the bottle When the bottle is held in a slightly-inclined position, as shown at Fig. 5, and the ball is pressed inward, the ball will drop to the lower end of the contracted upper part of the bottle, as shown, and the contents of the bottle can be poured out readily. When the contents of the bottle have been poured out, and the bottle, after being inverted, is turned into the position shown at Fig. 6, the ball will roll between the projections E E on the under side of the bottle, and will be brought to the center of the opening C, as shown by dotted lines in Fig. 2. When the bottle has been filled with liquid up to the level of the contraction A, and the bottle is drawn away from the nozzle through which it has been filled, the sudden rush of gas toward the mouth of the bottle lifts the ball and carries it up to the ring F, so at once closing the bottle. The contraction A may be made in a straight line instead of being inclined or curved, as shown.

I claim as my invention—

The bottle to be closed with an internal stopper formed with a head close down to the body, with the upper part of the body partly divided off from the lower part by a contraction, leaving an oblong passage or opening between said parts of a width less than the diameter of the stopper, and with the inward projections in the opposite sides of the upper part, substantially as and for the purpose set forth.

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