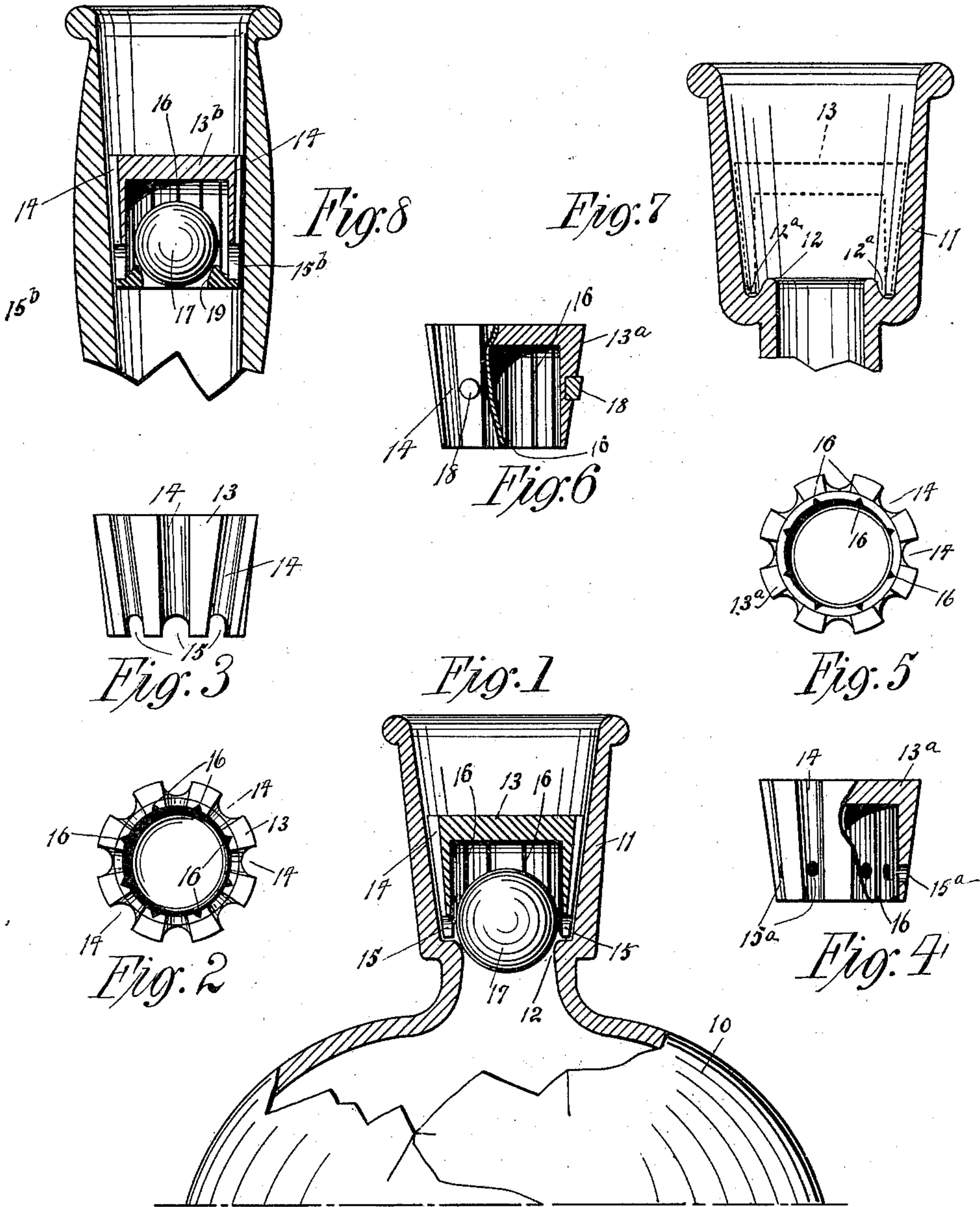


(No Model.)

E. M. ENGELMAN.
BOTTLE.

No. 566,385.

Patented Aug. 25, 1896.



WITNESSES:

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EUGENE M. ENGELMAN, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF
TO LEO L. SCHWAB, OF NEW YORK, N. Y.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 566,385, dated August 25, 1896.

Application filed November 7, 1895. Serial No. 568,230. (No model.)

To all whom it may concern:

Be it known that I, EUGENE M. ENGELMAN, of Detroit, in the county of Wayne and State of Michigan, have invented certain new and
5 useful Improvements in Bottles, of which the following is a full, clear, and exact description.

My invention relates to improvements in bottles, and more especially to the necks and
10 stoppers of bottles. It is a well-known fraudulent practice to use certain brands of liquors or waters from bottles bearing trade-marks and then to refill the bottles with inferior liquor or water and sell it for the goods origi-
15 nally contained in the package.

The object of my invention is to produce a bottle having a neck and stopper constructed in such a way as to prevent refilling, but not
20 to interfere with the pouring out of the liquor in the bottle; also to produce a device of this kind which is very cheap and simple and which will not add materially to the cost of the bottle.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

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

Figure 1 is a broken side elevation, with the neck in longitudinal section, of the bottle, showing my improvements. Fig. 2 is a
35 detail end view of the plug used in the bottle-neck. Fig. 3 is a side elevation of the said plug. Fig. 4 is a side elevation, partly in section, of a modified form of plug. Fig. 5 is an end view of the plug shown in Fig. 4.
40 Fig. 6 is a detail side elevation, partly in section, of the plug having a peculiar means of fastening. Fig. 7 is a detail sectional view showing a preferred form of bottle-neck for use in connection with my improvements, and
45 Fig. 8 is a longitudinal section through the bottle-neck and valve and shows another modification of the device in which the valve-seat and plug are united.

The bottle 10 may be of any suitable kind,
50 shape, or material, and it has a neck 11, which is preferably, though not necessarily, provided with a slightly-flaring mouth, and

within the neck is a shoulder or collar 12, against which rests the lower edge of the hollow or cup-shaped plug 13, which fits
55 snugly in the neck and is preferably wedged in, as illustrated, but the plug and neck may be made of uniform size and the plug fastened in any convenient way. The plug is provided with side channels 14, which extend the en-
60 tire length of the plug on its outer side and merge at the lower end in ports 15, which extend through the plug, and the liquor in the bottle passes out through these ports and through the channels 14. Instead, however,
65 of making the ports at the extreme marginal edge of the plug, as shown in Figs. 1 to 3, ports 15^a may be produced in the plug extending through the walls from the channels 14, as shown in Fig. 4.

The plug is provided on its inner side wall with numerous air-passages 16, (any necessary number being made,) which passages extend upward from the lower edge of the plug and serve to admit air to the top of the
75 plug and behind the ball-valve 17, which is held within the plug and fits a seat on the collar or shoulder 12. These passages form an important feature of the invention, as if they are not used a certain amount of liquor
80 is retained in the plug and a partial vacuum formed which has a tendency to hold the ball up in the plug, so that liquor can be forced into the bottle, especially if the latter is laid on its side; but the passages permit a free
85 supply of air to enter behind the ball, and so the latter is very sensitive and seats itself as soon as any attempt is made to force liquor inward through the ports 15^a. This is especially so as the ball is of the same diameter as
90 the internal diameter of the plug, and so fits closely against the plug through its entire length.

As already remarked, the plug can be fastened in the bottle-neck either by wedges or
95 by cement, or in fact in any other manner, but if cement is used small plugs 18 (see Fig. 6) of cork, rubber, or other yielding material may be inserted in the wall of the main plug, and these little plugs get a good grip on the
100 cement and so assist in holding the main plug in place.

Instead of making the shoulder 12 of the bottle-neck square or flat on top, as illustrated

in Fig. 1, it can be made, and preferably is made, with a concavity or groove 12^a in which the lower end of the plug 13 rests, and this concavity serves as a trap to engage the end
5 of a wire in case it is inserted to tamper with the valve and prevents the said wire from coming in contact with the ball or valve 17.

In Fig. 8 I have shown another modification of the device, in which a collar 19 is fastened directly to the plug 13^b, which is like the plug 13^a, with the exception of having the collar 19 at its lower edge. This collar serves as a seat for the valve or ball 17, and it is highest at its inner edge, so as to prevent
15 the introduction of a wire to work the valve. It will of course be understood that any suitable materials may be used in making any parts of the apparatus, although glass is usually and preferably employed.

The plug and ball 17 are fastened in the bottle-neck after the bottle is filled, and an ordinary stopper may be placed in the neck above the plug. When the bottle is to be emptied, the stopper is removed in the usual
25 way, and the liquor can be poured out freely, passing unobstructed through the ports 15, 15^a, or 15^b and the channels 14, the ball 17 meanwhile rolling into the top of the plug. When, however, any attempt is made to re-
30 fill the bottle, the ball 17, being perfectly free to move against the seat 12, seats itself either by force of gravity or by the action of the liquor against it, and so the bottle cannot be refilled.

I am perfectly well aware that it is not new to use ball-valves in the necks of bottles, and do not claim this feature broadly, but only in combination with my improved plug and neck, which combination renders the valve
40 sensitive and efficient.

In the accompanying drawings I have shown the plug provided with side channels 14, which are parallel with each other, but it will of

course be understood that these channels may be made straight, as shown, or sinuous, 45 if preferred. The channels 14 may also be made in the neck of the bottle opposite the ports 15, leaving the outside surface of the plug 13 plain, without affecting the invention, because it will be seen that the effect is the
50 same whether the channels are in the bottle-neck or the plug.

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

1. The combination with the bottle-neck having a seat or shoulder therein, of an open-bottomed plug adapted to fit within the bottle-neck above the seat, said plug being closed at the top and provided with transverse ports, 60 longitudinal channels between itself and the bottle-neck, and internal air-passages leading from its lower edge to a point above the ball, and a ball-valve held within the plug and adapted to fit the seat, the said ball fit-
65 ting snugly in the plug throughout the entire length of the latter substantially as described.

2. The combination with the bottle-neck having a seat or shoulder therein, of a plug closed at the top and open at the bottom, said 70 plug being adapted to fit the neck above the shoulder or seat and having at its lower edge transverse ports and in its exterior surface longitudinal channels registering with the ports and in its inner surface air-passages 75 extending from its lower edge to a point above the ball, and a ball-valve held within the plug and adapted to fit the seat, the said ball fitting snugly in the plug throughout the entire length of the latter substantially as de-
80 scribed.

EUGENE M. ENGELMAN.

Witnesses:

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