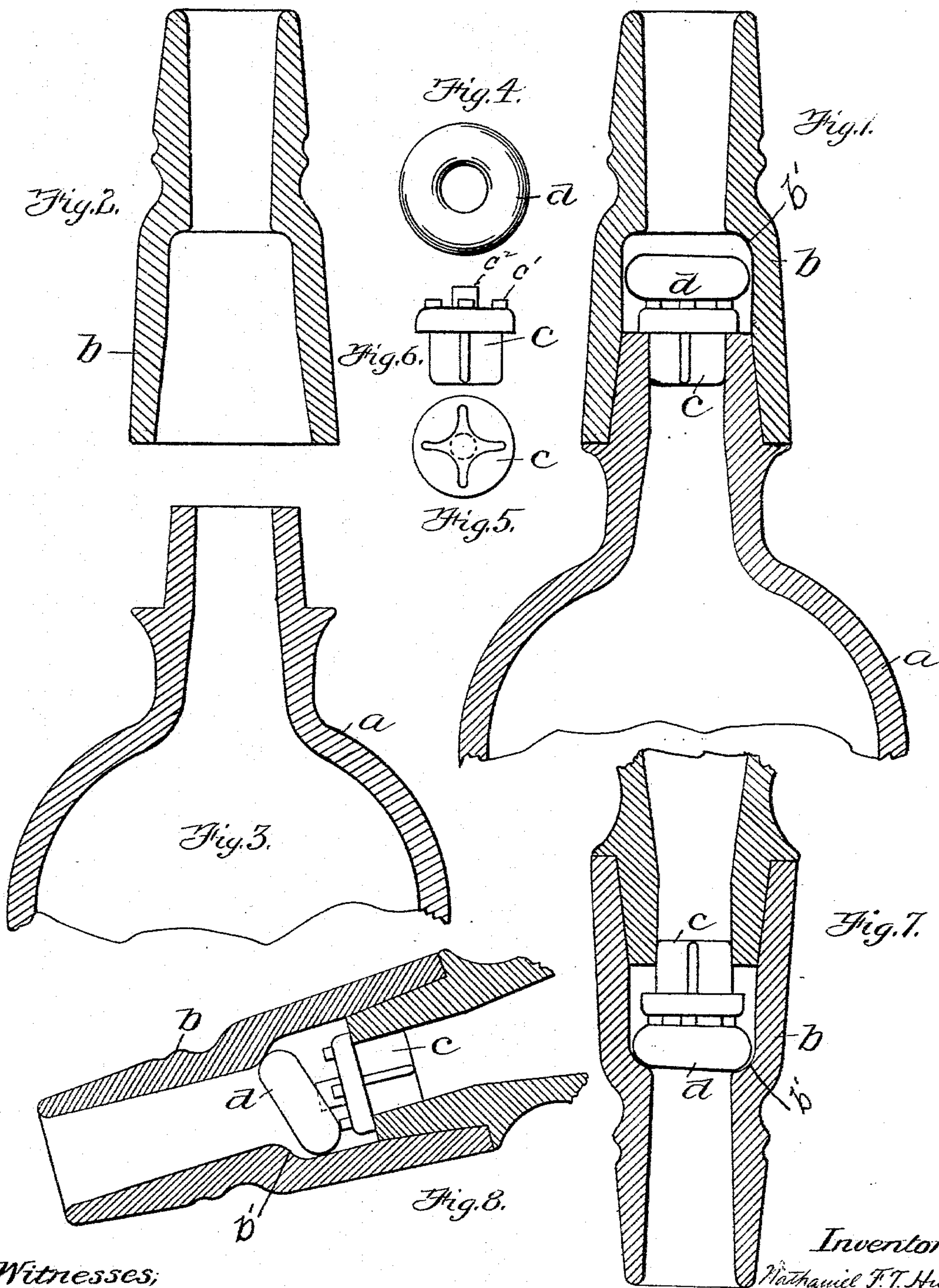


(No Model.)

N. F. T. HUNT.  
VALVE STOPPER FOR BOTTLES.

No. 515,879.

Patented Mar. 6, 1894.



Witnesses;  
Master City,  
John R. Snow.

Inventor,  
Nathaniel F. T. Hunt.  
By  
J. E. Maynard  
his Attorney.



# UNITED STATES PATENT OFFICE.

NATHANIEL F. T. HUNT, OF BRAINTREE, MASSACHUSETTS.

## VALVE-STOPPER FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 515,879, dated March 6, 1894.

Application filed September 25, 1893. Serial No. 486,409. (No model.)

*To all whom it may concern:*

Be it known that I, NATHANIEL F. T. HUNT, of Braintree, in the county of Norfolk and State of Massachusetts, have invented an Improved Valve-Stopper for Bottles and the Like, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a bottle embodying my invention. Figs. 2 and 3 show the two parts which form the neck of the bottle and the chamber for the valve and tumbler. Fig. 4 is a plan of the tumbler detached; Figs. 5 and 6 a plan and elevation of the preferred form of valve; Fig. 7 a sectional elevation of the bottle inverted; and Fig. 8 of the bottle inclined, the latter figure illustrating the action of the tumbler.

The bottle *a*, has a tube *b* secured upon its mouth, as in my application now pending, Serial No. 482,796, filed August 10, 1893, the purpose of this construction being to form a chamber for the valve *c* and tumbler *d*, which constitute the main feature of my present invention. After the bottle *a* has been filled the valve *c* and tumbler *d* are applied and the tube *b* then secured in place, and the cork inserted in the mouth of tube *b*. Valve *c* is kept in line with the neck of the bottle by wings, and acts to prevent the refilling of the bottle, but allows the contents of the bottle to be poured out when the bottle is uncorked.

The tumbler *d* moves readily in the chamber for the valve and tumbler, (formed by the tube *b* with its shoulder *b'* when in place on bottle *a*) when the bottle is inclined sufficiently to pour out the liquid in it; and will tip by its weight as indicated in Fig. 8 and tend to close valve *c*, in case an attempt be made to refill the bottle, by inclining it and partly immersing it in the liquid; thereby practically preventing refilling of the bottle. The shoulder *b'* causes the tumbler to act as a prop when one edge is against the shoulder and the other against the valve, (see Fig. 8.)

The tumbler *d* and valve *c* are best made of glass.

It will be obvious that my invention is generally applicable; but for the best results the full combination of bottle *a*, tube *b*, valve *c*

and tumbler *d* should be used, as the bottle *a* and tube *b* together constitute a complete bottle, and the tumbler *d* and valve *c* prevent its being fraudulently refilled; while the tube *b* when in place on bottle *a* forms a chamber for tumbler *d* and valve *c*, in which these parts are so confined that they operate to the best advantage.

I have shown the tumbler with a single central hole through it and a much flattened sphere in form, but as the hole is to allow of a ready escape of liquid past the tumbler it will be obvious that it is not material that but one passage for the liquid be provided or that it should be in the middle. The escape of the liquid when the passage through the tumbler is a central hole is provided for by the projections *c'*. The central projection *c'* entering the hole through the tumbler, serves as a guide when the bottle is in the position, shown in Fig. 8; but this central projection is unimportant.

The form of the tumbler may be varied somewhat, but it must always be a flattened sphere, in essence; that is its outline must be circular, and its edges rounding, so that it cannot stand on edge but must always tumble when any attempt is made to hold the bottle so that a line passing through its axis is horizontal or approaching the horizontal.

After the cork has been removed from tube *b*, the contents of the bottle can be poured out by tipping the bottle sufficiently, or nearly bottom side up, as in Fig. 7; but the flow will be stopped by tipping the bottle so that the axis of the tumbler is nearly horizontal, because the tumbler will fall sideways, forcing the valve to its seat, the head of liquid in the bottle acting to resist the seating of the valve being trifling, for it cannot be greater than one-half the diameter of the bottle, when the bottle is full and is less when the bottle is partly filled. All this will be clear if one of my bottles filled with liquid be supposed to be uncorked and laid flat on a table; in that case as the tumbler cannot stand on edge it tips as indicated in Fig. 8, and if the valve be ground to fit its seat there will be little or no leaking of the liquid from the bottle, even when the bottle is full. This



will be clear if the uncorked but filled bottle be supposed to stand upright on the table, and then to be gradually tipped till it is brought on its side, resting on the table; for  
5 as soon as the axis of the bottle varies slightly from the vertical the tumbler will tumble so that one edge of it will rest against the valve; and there will be no force but a slight head of liquid to move the valve, for the valve cannot be moved without moving the tumbler  
10 also. Moreover any slight leak under the conditions supposed, will cause the air pressure to force the valve close to its seat, the tumbler following it up, and holding it to its  
15 seat.

If the attempt be made to refill the bottle, the tumbler will act as above fully explained, except that there will be no head of liquid to resist its constant effort to keep the valve  
20 closed.

I am aware of the patent to Jules E. Clerc, No. 487,385, dated December 6, 1892, and disclaim all that is shown in it; for in that patent a rolling ball, and inclined planes for the

ball to roll on are essential; while I use a  
25 tumbler which simply falls over and tumbles against the valve when any attempt is made to cause the tumbler to stand edgewise in its chamber.

What I claim as my invention is—

1. In combination a vessel; a tube having  
30 an interior shoulder; a valve; and a flattened sphere forming a tumbler; the valve and the tumbler being confined in a chamber formed by securing the tube upon the vessel, substantially as shown and described.

2. In combination a valve with wing guides and a flattened sphere forming a tumbler, both in a chamber at the mouth of a vessel; an interior shoulder in the chamber placed  
40 opposite to the mouth of the vessel to act as a stop for one edge of the tumbler, and the wings of the valve in the mouth of the vessel; all substantially as set forth.

N. F. T. HUNT.

Witnesses:

J. E. MAYNADIER,  
O. R. MITCHELL.