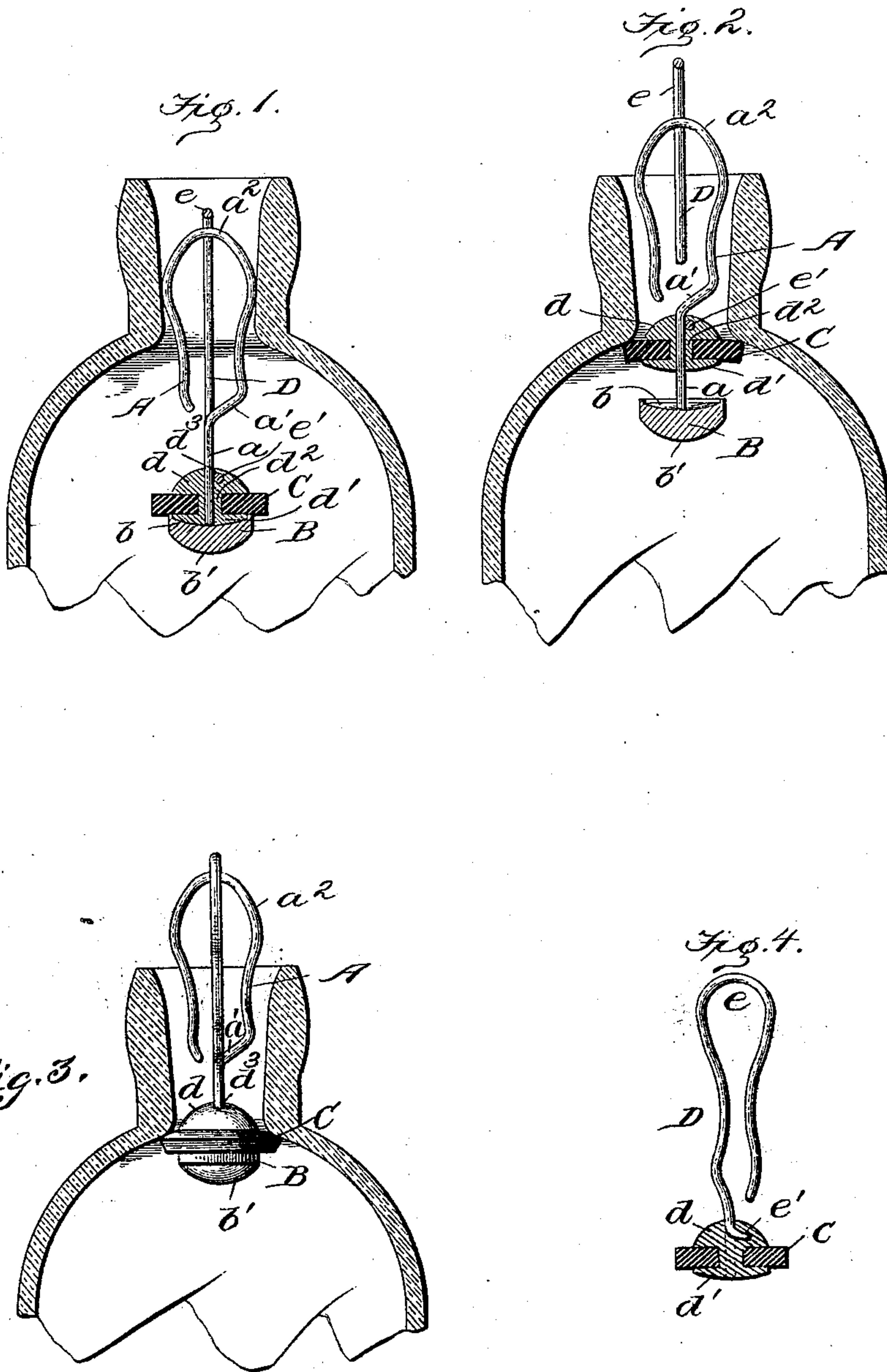


(No Model.)

G. L. MATHEWS.  
BOTTLE STOPPER.

No. 521,473.

Patented June 19, 1894.



Witnesses

Edwin L. Bradford

Alfred J. O'Farrell

Inventor  
Gilbert L. Mathews  
by Patrick O'Farrell  
Attorney



# UNITED STATES PATENT OFFICE.

GILBERT L. MATHEWS, OF NEWTON, NEW JERSEY.

## BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 521,473, dated June 19, 1894.

Application filed October 25, 1893. Serial No. 489,114. (No model.)

*To all whom it may concern:*

Be it known that I, GILBERT L. MATHEWS, a citizen of the United States of America, residing at Newton, in the county of Sussex and State of New Jersey, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention contemplates certain new and useful improvements in bottle-stoppers and it has for its object the production of a simple and highly efficient stopper for bottles containing carbonated beverages which will  
15 permit of the ready use and easy cleansing of both the bottle and the stopper, which latter is securely held in the neck of the bottle but may be readily unseated or removed therefrom when desired.

20 The invention consists of a bottle-stopper having a flexible valve and a second concaved valve designed to be seated against said flexible valve when the bottle is filled and means for unseating both of said valves.

25 The invention also comprises the details of construction, combination and arrangement of parts, substantially as hereinafter fully set forth and particularly pointed out in the claims.

30 In the accompanying drawings, Figure 1, is a vertical sectional view showing my improved stopper with both valves unseated. Fig. 2, is a similar view with the flexible valve seated. Fig. 3, is likewise a vertical sectional  
35 view both valves being seated. Fig. 4, is a view of one of the rods.

Referring to the drawings, A designates a wire-rod having a lower perpendicular portion  $a$ , and inclined or angular portion  $a'$  and  
40 an upper loop  $a^2$ . To the lower end of this rod is secured, or it may be formed integral therewith, a disk B having an upper concaved face  $b$  and a lower curved or convexed surface  $b'$ .

45 C is the flexible valve, which is preferably made of rubber, although leather or any composition material may be employed if desired. This valve C is held between upper and lower washers  $d, d'$ , connected together  
50 by a shank  $d^2$  movable on the perpendicular portion  $a$  and which is passed through a central opening in valve C. The upper washer

$d$  is convex on its outer surface and provided with an inclined or angular hole or recess  $d^3$ . The upper edge of the concaved disk B is designed to overlap and inclose the edge of the lower washer  $d'$ , thus making a tight joint in order to prevent any escape or leakage of gas or air in the bottle at these points.

D is a rod or hook having a loop  $e$  designed to accommodate the loop  $a^2$  of rod A and occupy a position transverse thereto, the upper end of said loop  $e$  being above the loop  $a^2$ . The lower end of this rod is rigidly secured to or formed integral with the upper washer  
65 of valve C.

When the stopper is placed in a bottle the valves are forced down through the neck opening by the operator striking or pressing on rod D. The stopper is prevented from falling into the bottle by the loops  $a^2$  and  $e$  which cannot pass through the neck opening. After the bottle has been filled with the carbonated or other beverages the operator by pulling on rod A, (by the hook of a bottling  
75 machine not shown) will draw both of the valves to their seats, and the concaved portion of the disk B fitting snugly against the flexible valve C will prevent any escape through the central opening of said valve. When it is desired to open the bottle to remove the contents thereof, the valves are unseated by a blow upon the looped end of rod D. To entirely remove the stopper from the neck of the bottle the operator pulls upward  
85 on rod D.

The advantages of my invention are apparent. In the first place the cleansing of the bottle and stopper can be readily and easily accomplished. The stopper constantly remains affixed to the bottle save when the latter is to be cleansed, when the stopper can be entirely removed. By employing the flexible valve I not only seal the neck of the bottle but I permit of the insertion and withdrawal of the stopper and by means of the independently movable disk B any leakage through the flexible valve is prevented.

A bottle-stopper constructed as herein described is extremely simple and inexpensive and not liable to readily get out of order.

I claim as my invention—

1. A bottle stopper, comprising a rod having an upper widened or loop portion, a flexi-

ble valve, upper and lower washers between which said valve is secured, a central shank connecting said washers and movable on said rod, and a disk secured fast to the lower end  
5 of said rod and having an upper concave face, the edges of said disk overlapping and inclosing the edges of said lower washer and bearing against said flexible valve, substantially as set forth.

- 10 2. A bottle stopper, comprising a rod having a lower perpendicular portion and an upper looped end, a flexible valve having a central opening, the upper and lower washers having a connecting shank fitted on the per-

pendicular portion of said rod and passed 15 through said central opening of said flexible valve, the disk connected to the lower end of said rod and having an upper concave face and its edges overlapping and inclosing the edges of said lower washer, and the rod hav- 20 ing a loop and secured at its lower end to said upper washer, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GILBERT L. MATHEWS.

Witnesses:

CYRUS K. FOSTER,  
SCOTT MARTIN.