

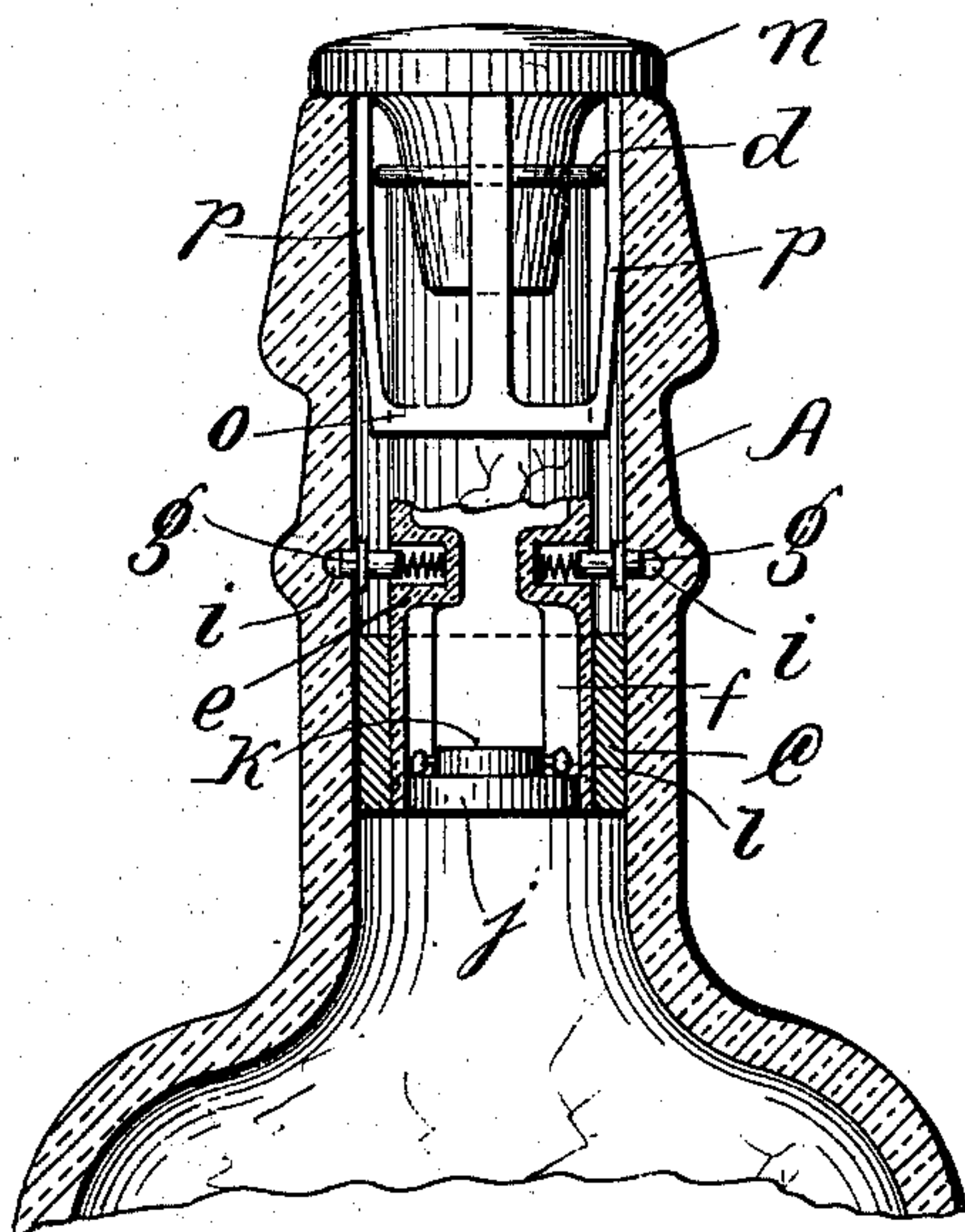
No. 731,854.

PATENTED JUNE 23, 1903.

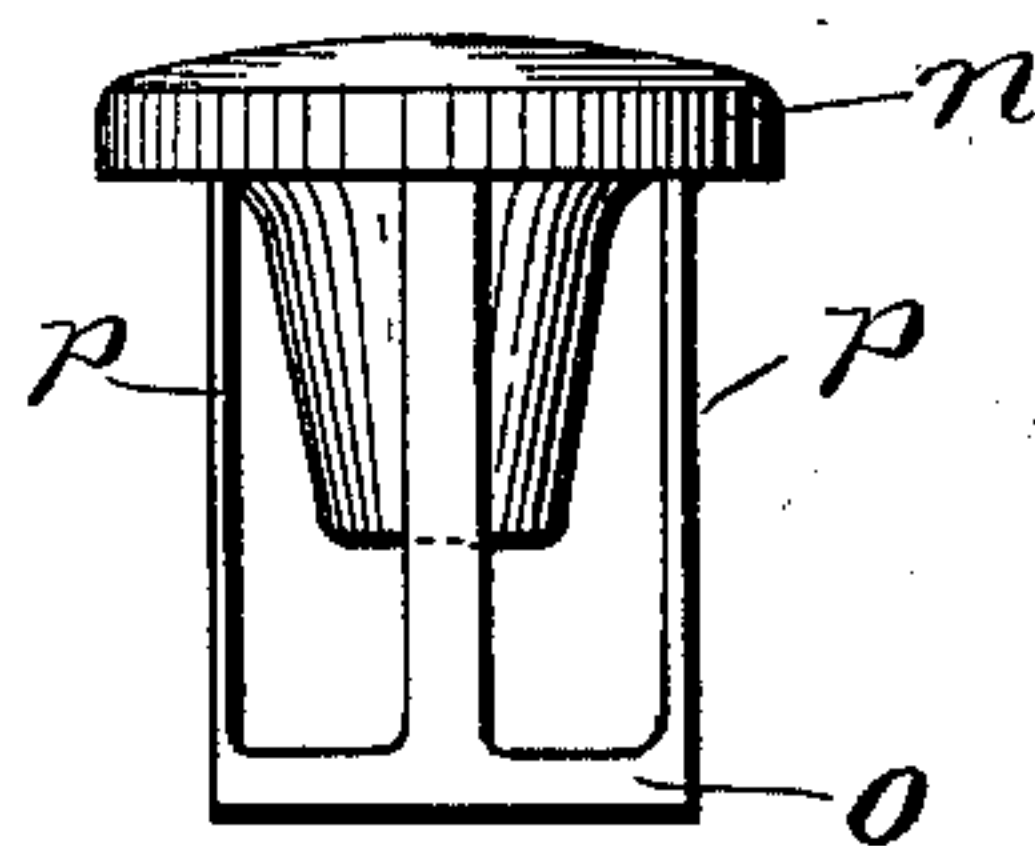
R. BYERS.  
NON-REFILLABLE BOTTLE.  
APPLICATION FILED MAR. 18, 1903.

NO MODEL.

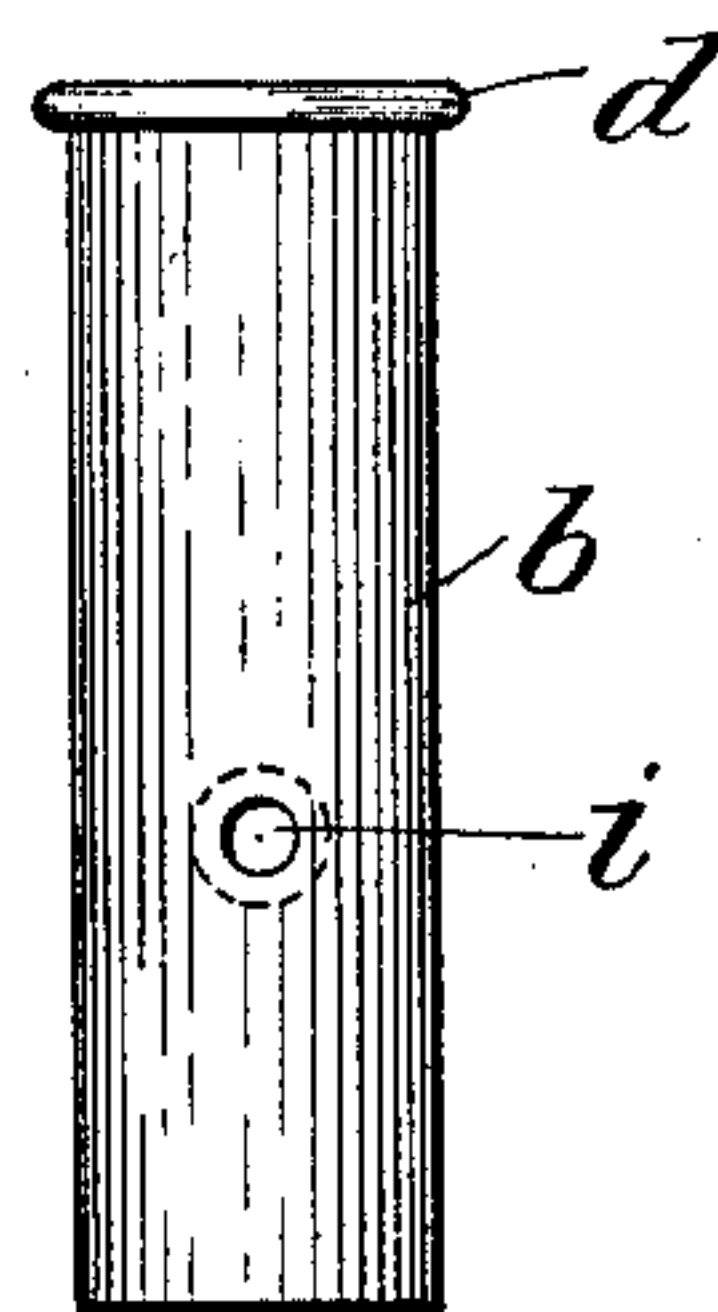
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 8.*



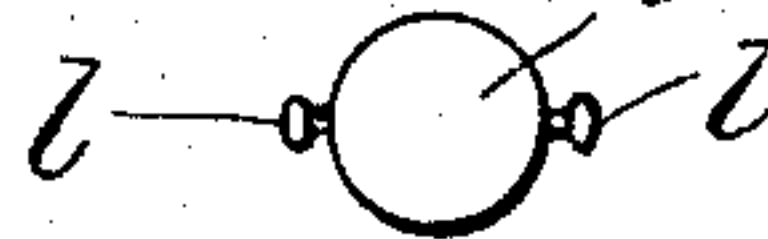
Fig. 9.



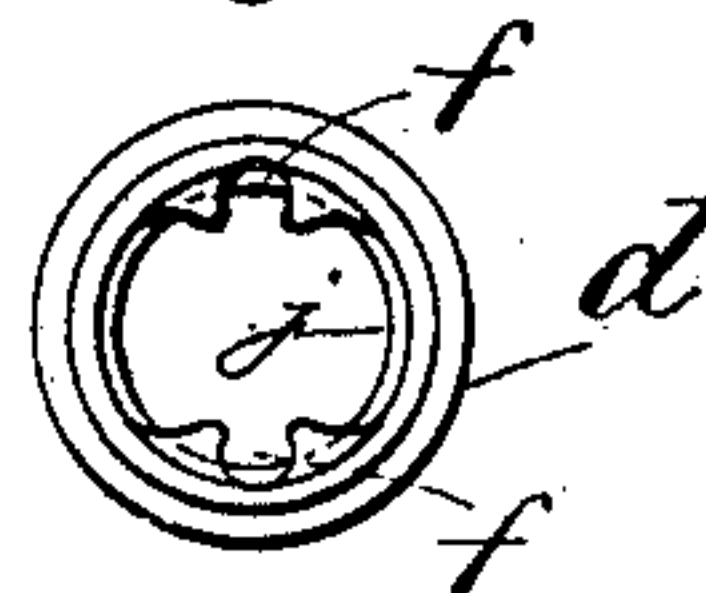
*Fig. 6.*



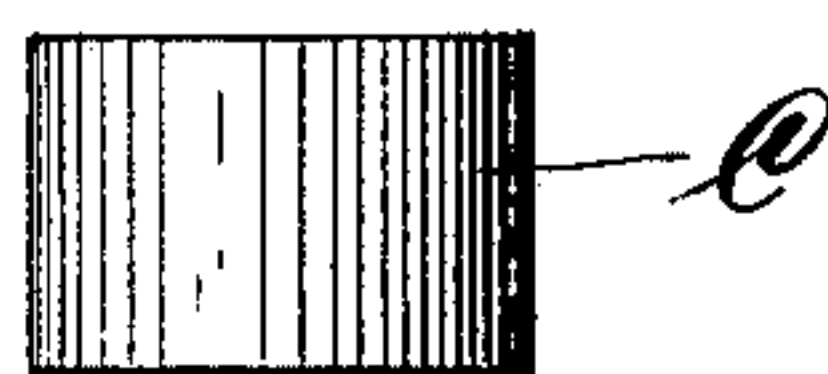
Fig. 7. K



*Fig. 4.*



*Fig. 5.*



Witnesses  
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By his Robt Byers Inventor  
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# UNITED STATES PATENT OFFICE.

ROBERT BYERS, OF NEW YORK, N. Y.

## NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 731,854, dated June 23, 1903.

Application filed March 18, 1903. Serial No. 148,351. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT BYERS, a citizen of the United States of America, and a resident of the borough of Manhattan, New York city, and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention consists of a tube of not quite the length of the neck of the bottle, having a self-closing valve at the lower end and a stopper for the upper end, which tube after being provided with these devices is non-removably fitted in the neck, said stopper being so connected that after such insertion of the tube it can only be opened sufficiently for the escape of the contents, but not so as to admit a funnel for refilling, and also to prevent insertion of instruments for opening the valve, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical section of the neck of a bottle fitted with my improved protecting apparatus, part of which is represented in vertical section. Fig. 2 is an elevation of the device for retaining the stopper. Fig. 3 is an elevation of the valve and stopper carrying tube to be inserted in the neck of the bottle. Fig. 4 is a lower end view of said valve and stopper carrying tube with an attachment of elastic packing to prevent leak between the exterior of said tube and the neck of the bottle. Fig. 5 is an elevation of the said elastic packing. Figs. 6 and 7 are edge and plan views, respectively, of the self-closing valve. Figs. 8 and 9 are plan and edge views, respectively, of the valve-seat.

A represents the neck of a bottle.

b is a short tube, preferably of glass, adapted to be fitted tightly in the neck of the bottle with an elastic packing-ring c, said tube having an exterior rib or flange d at the upper end, one or more radial stud-carrying sockets e, and a couple of oppositely-placed vertical interior grooves f, extending from the radial sockets e to its lower end. The sockets each carry an outwardly-projecting stud g, with a spring h behind it to thrust the studs into locking-sockets i in the interior of the neck of the bottle to secure tube b against removal.

A disk valve k is provided to close against

refilling, said valve having oppositely-placed pivot-studs l to engage the grooves f, and a cork or other elastic seat-ring j is provided for the valve to pack the lower end of the tube b against admission of liquor from above into the bottle.

To the upper end of tube b, which terminates a little below the top of the neck of the bottle, a stopper n is provided with a guard-ring o, pendent from it by thin tin or other sheet-metal strips p, adapted to extend down between rib d and the neck of the bottle, so as to work up and down freely to a limited extent, said ring o being fitted so close to the exterior of tube b that it cannot escape over rib d, thus allowing the stopper to be opened sufficiently for pouring out the contents of the bottle, but not so that liquor can be poured in nor so that the valve may be opened by the use of instruments.

The ring o will be applied to tube b under rib d while parted and sufficiently opened to pass over said rib and will then be drawn close and soldered or otherwise secured, so that escape over said rib thereafter will be prevented.

I do not mean to limit myself to the radial locking-studs, sockets, and springs for securing the tube b in the neck of the bottle, for it is obvious that my invention may be carried out with any equivalent or suitable means of securing the said tube.

What I claim as my invention is—

In non-refillable-bottle apparatus, the combination with the neck of the bottle, of a tube non-removably fitted in said neck and having a self-closing valve at the lower end, and an exterior rib at the upper end, and a stopper for the upper end of said tube having a pendent ring exterior to the tube, and capable of shifting up and down thereon but incapable of escaping therefrom over the said rib, said rib being located below the top of the neck of the bottle.

Signed at New York this 5th day of March, 1903.

ROBERT BYERS.

Witnesses:

C. SEDGWICK,  
A. P. THAYER.