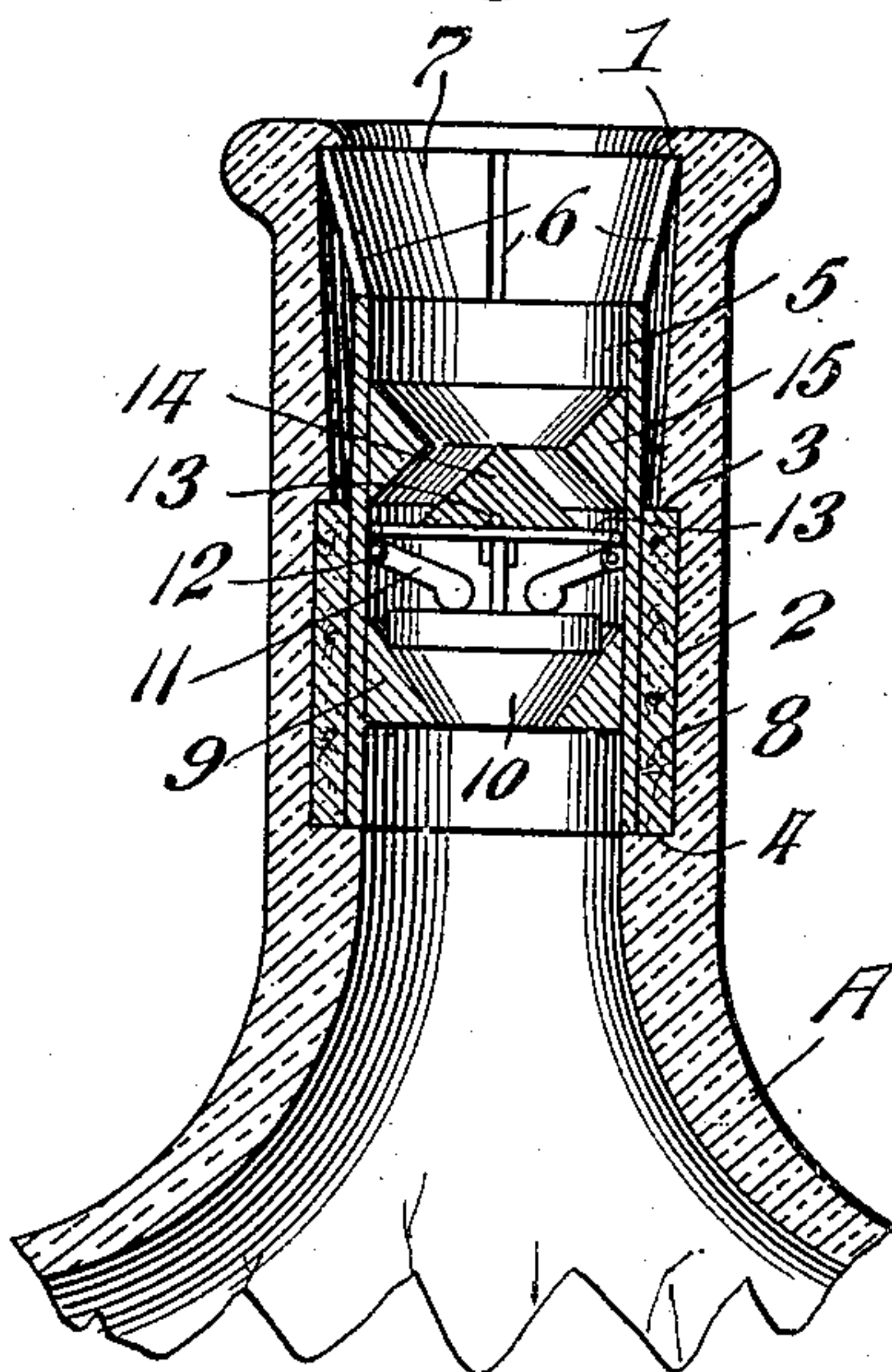


C. V. SHAW.  
NON-REFILLABLE BOTTLE.  
APPLICATION FILED AUG. 21, 1908.

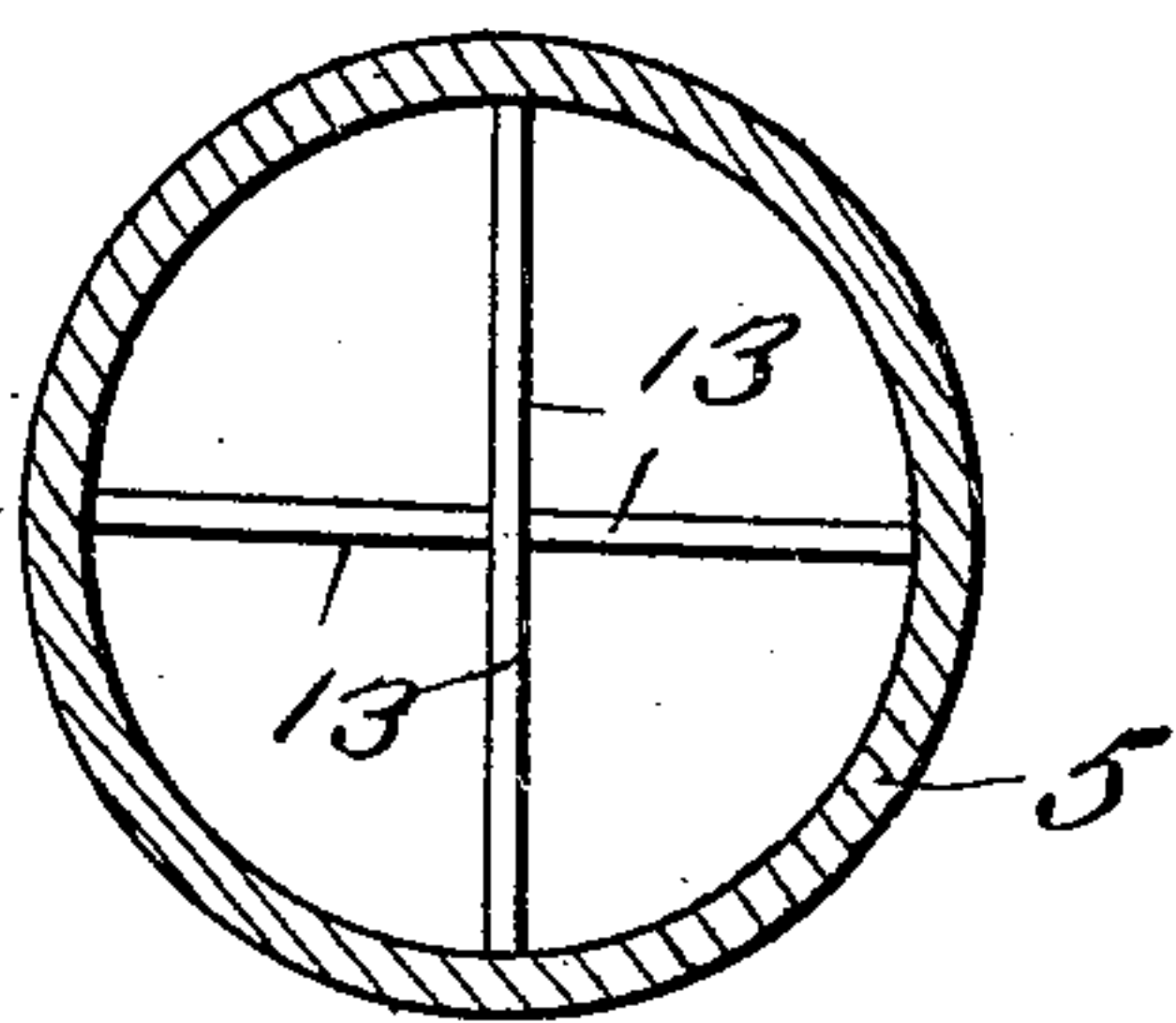
945,620.

Patented Jan. 4, 1910.

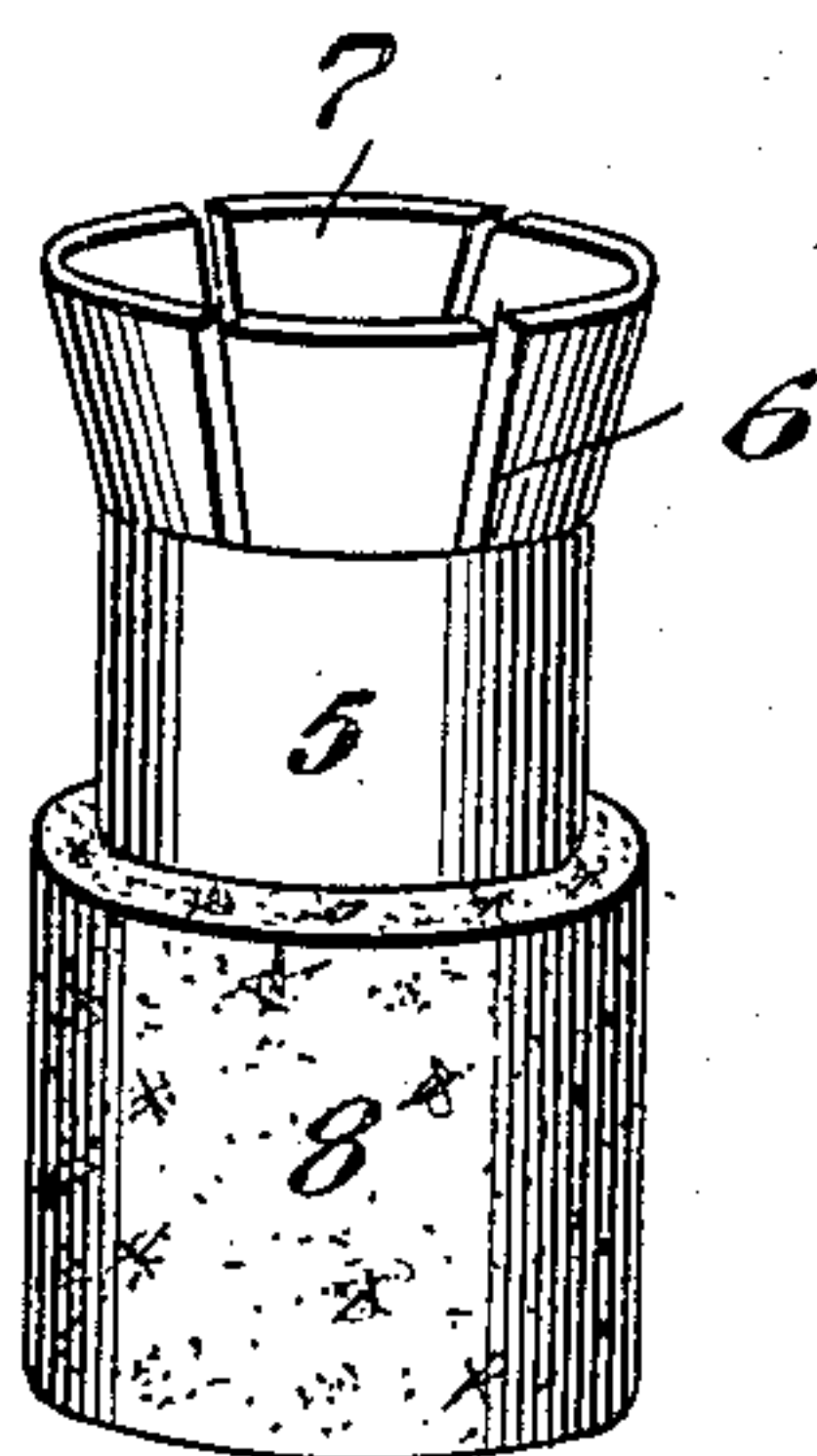
*Fig. 1.*



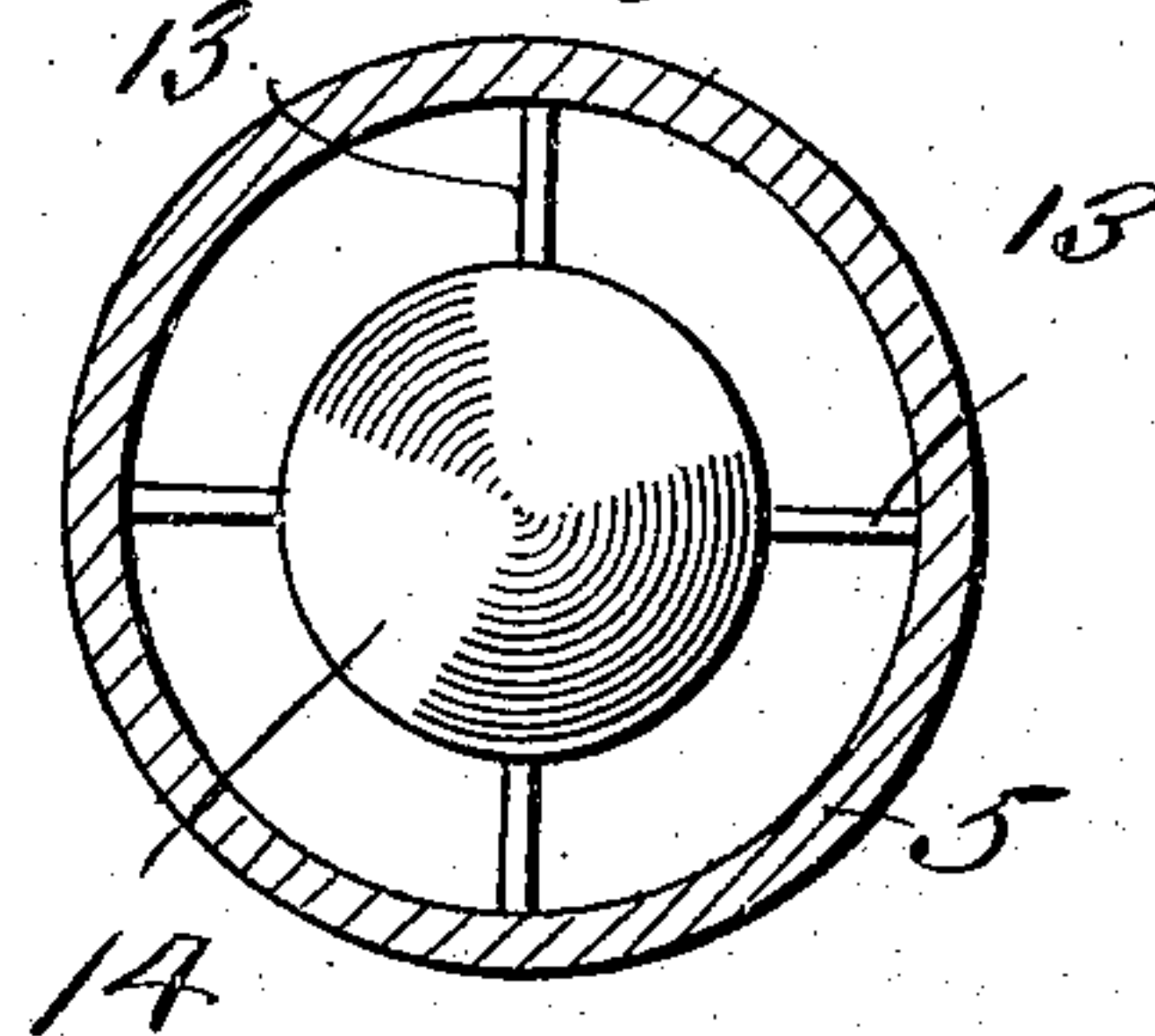
*Fig. 3.*



*Fig. 2.*



*Fig. A.*



Witnesses

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Inventor.

*Cyrus V. Shaw*

By *Victor J. Evans*  
Attorney



# UNITED STATES PATENT OFFICE.

CYRUS V. SHAW, OF WEST BROWNSVILLE, PENNSYLVANIA.

NON-REFILLABLE BOTTLE.

945,620.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed August 21, 1908. Serial No. 449,650.

*To all whom it may concern:*

Be it known that I, CYRUS V. SHAW, a citizen of the United States, residing at West  
Brownsville, in the county of Washington  
and State of Pennsylvania, have invented  
new and useful Improvements in Non-Re-  
fillable Bottles, of which the following is a  
specification.

This invention relates to a non-refillable  
bottle of that type provided with a stopper  
adapted to be inserted in the bottle neck  
after the bottle is filled and which automatic-  
ally anchors itself therein so that the ex-  
traction of the stopper and re-filling of the  
bottle by an unauthorized person are effect-  
ively prevented.

The invention has for one of its objects to  
provide a device of this character which is  
of comparatively simple and inexpensive  
construction, and so designed as to permit  
the contents of the bottle to readily dis-  
charge, but practically precludes re-filling.

Another object of the invention is the pro-  
vision of a sheet metal cylinder self-an-  
chored within the bottle and surrounded by  
a cork or other packing ring that fits in the  
bottle neck and which contains a valve device  
that automatically opens when the bottle is  
inverted, and closes by its own weight and  
that of weighting members bearing on the  
same.

With these objects in view and others, as  
will appear as the description proceeds, the  
invention comprises the various novel fea-  
tures of construction and arrangement of  
parts which will be more fully described  
hereinafter and set forth with particularity  
in the claims appended hereto.

In the accompanying drawing, which illus-  
trates one embodiment of the invention, Fig-  
ure 1 is a central vertical section of a bottle  
neck provided with the improved stopper.  
Fig. 2 is a perspective view of the stopper  
removed. Fig. 3 is a horizontal section of  
the cylinder immediately above the cross  
wires, the remaining parts being removed  
therefrom. Fig. 4 is a view similar to Fig.  
3 showing the conical shield in position.

Similar reference characters are employed  
to designate corresponding parts throughout  
the views.

Referring to the drawing, A designates  
the neck of a bottle or other container which  
is molded or otherwise formed with an in-  
ternal flange 1 at its upper edge and with  
an annular groove 2 at about the middle of

the neck that provides opposed shoulders 3  
and 4. The stopper device comprises a hol-  
low metal cylinder or tubular piece 5 that  
has its upper end expanded and provided  
with longitudinal slits 6 for forming spring  
members 7 which will yield inwardly when  
the tubular piece is inserted and will spring  
outwardly under the flange or shoulder 1 for  
anchoring the said piece in position. Ex-  
tending around and rigidly secured to the  
inner end of the tubular piece is a cork or  
other packing ring 8 which enters the groove  
2 and engages the shoulders 3 and 4 to assist  
in holding the cylinder 5 in place, and also  
prevents liquid from passing out around the  
outside of the cylinder. Within the cylin-  
der and adjacent the inner end thereof is a  
conical valve seat 9 with which engages a  
valve 10. Disposed over the valve are  
weighting elements 11 that are pivoted at  
12 to the cylinder 5 and bear on the top of  
the valve 10 to assist in holding the latter  
seated. Arranged over these elements are  
crossed wires 13 that support a guard or  
conical shield 14, and coöperating with this  
guard is a ring 15 fixed in the cylinder 5 for  
preventing the introduction of an instru-  
ment to force the valve open in an attempt  
to re-fill the bottle.

In practice, the bottle is filled before the  
introduction of the stopper and when it is  
desired to insert the stopper, the end having  
the ring 8 is inserted first and a pressure  
is applied to the upper end of the cylinder  
of the stopper to force the latter inwardly  
until the ring 8 enters the groove 2 and the  
members 7 spring under the flange 1. After  
the stopper is thus inserted, an ordinary  
cork stopper is placed in the upper expand-  
ed end of the cylinder 5 and pressed in-  
wardly until the cork stopper seats against  
the ring 15 so as to prevent leakage of the  
contents in case the bottle is inverted. In  
emptying the bottle, the latter is inverted to  
cause the weighting members 11 to swing  
downwardly and permit the valve 10 to open  
by its own weight and the pressure of the  
liquid in the bottle. The liquid then runs  
out between the valve and the seat 9, past  
the weighting members, and between the  
cone 14 and ring 15, and thence out of the  
mouth of the bottle.

From the foregoing description, taken in  
connection with the accompanying draw-  
ing, the advantages of the construction and  
of the method of operation will be readily



apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I  
5 now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired, as are within the scope of the claims  
10 appended hereto.

Having thus described the invention, what I claim is:—

1. A bottle closure and protector comprising a hollow metal cylinder provided at one  
15 end with a series of outwardly flared spring members, a valve seat located within the opposite end portion of the cylinder, a valve adapted to close downward upon the said seat, a series of weighting members grouped  
20 about a central point and pivoted to the inner wall of the cylinder and exerting a pressure upon the valve to hold the same seated, crossed wires located above the weighting members and secured to the metal cylinder,  
25 and a guard comprising complementary members, one mounted upon the crossed wires and centrally disposed within the cylinder, and the other secured within the cylinder.

2. In combination, a bottle or like recep-

tacle provided with a neck having an inner  
30 flange 1, and spaced shoulders 3 and 4, the latter extending into the opening of the neck a greater distance than the shoulder 3, a metal cylinder supported within the neck  
35 upon the shoulder 4 and having flared spring members at its upper end to engage under the flange 1, a packing ring surrounding the lower end of the cylinder and supported upon the shoulder 4 and confined be-  
40 tween said shoulder and the shoulder 3, a valve seat arranged within the lower portion of the metal cylinder, a valve adapted to close downward upon said seat, a series of weighting members grouped about a central  
45 point and pivoted to the inner wall of the cylinder and exerting a pressure upon the valve to hold the same seated, and a guard comprising complementary members, one mounted upon the crossed wires and centrally disposed within the cylinder, and the  
50 other secured within the cylinder.

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

CYRUS V. SHAW.

Witnesses:

JOHN L. OLMSTEAD,  
GEORGE HUGHES.