

No. 871,702.

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H. C. JOHNSON & O. STEIDEL.

NON-REFILLABLE BOTTLE.

APPLICATION FILED MAY 10, 1907.

Fig. 1.

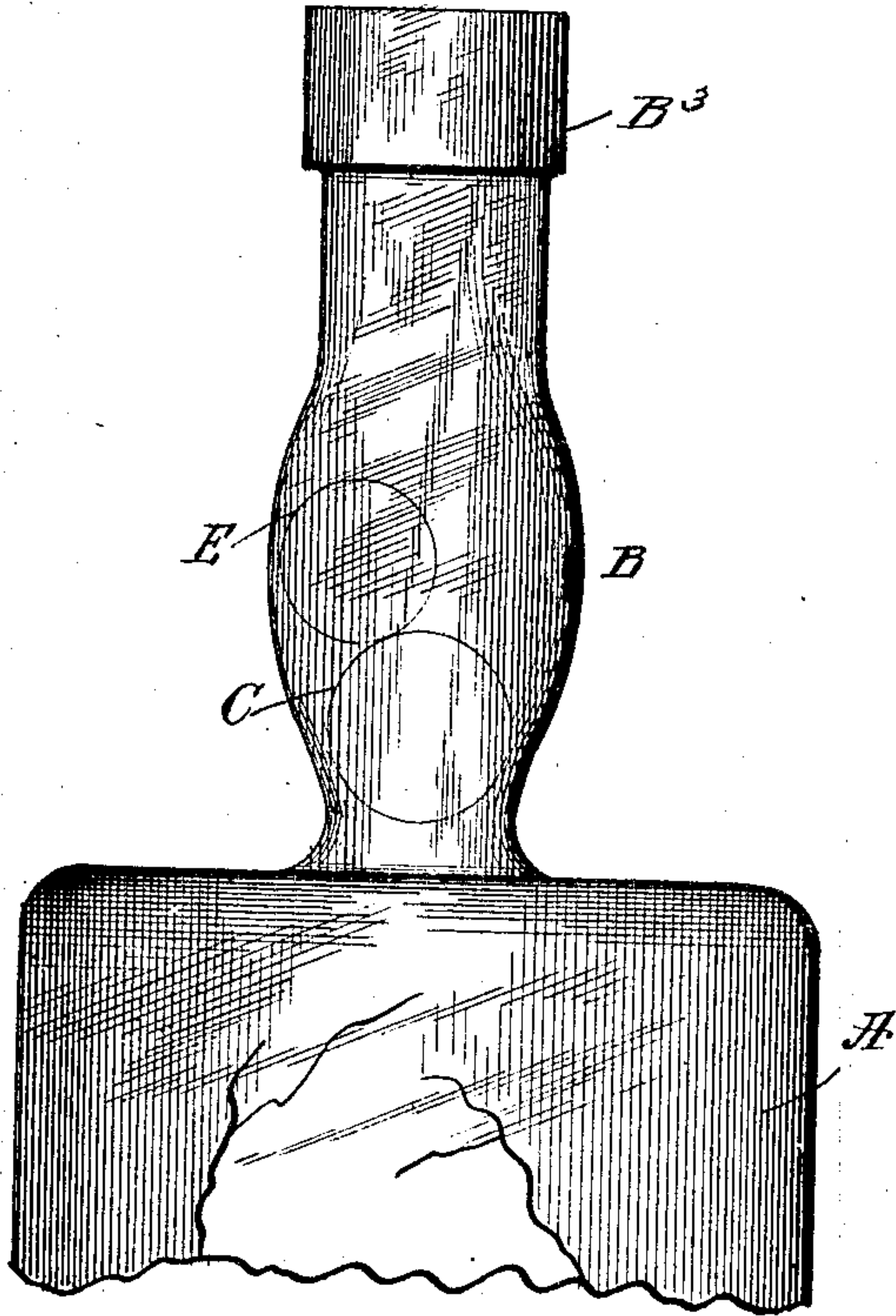


Fig. 2.

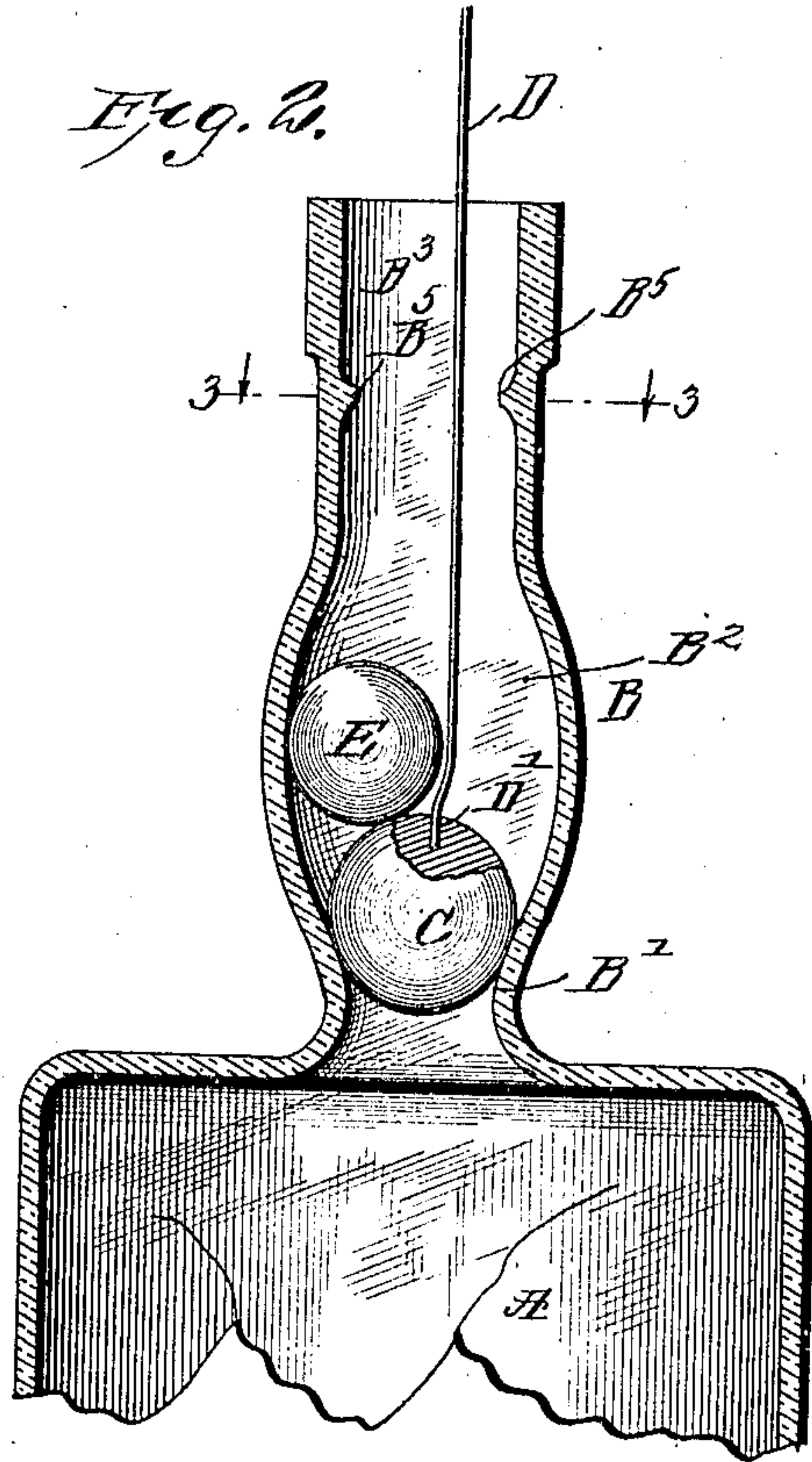


Fig. 3.

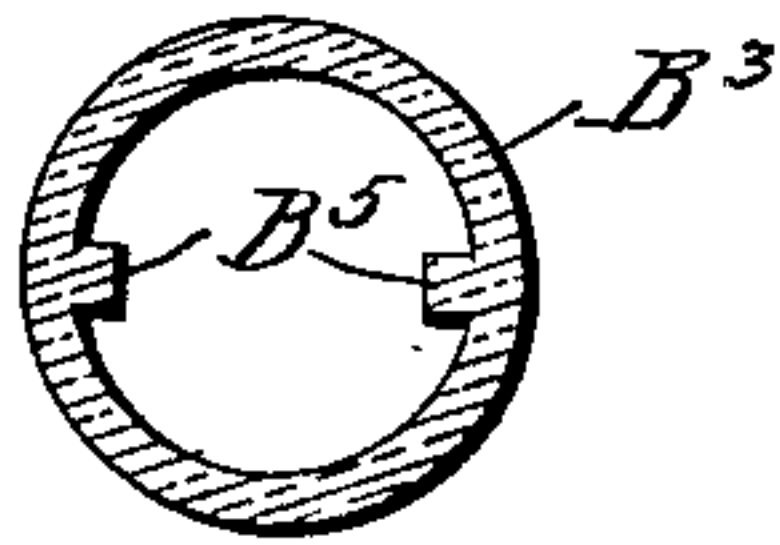
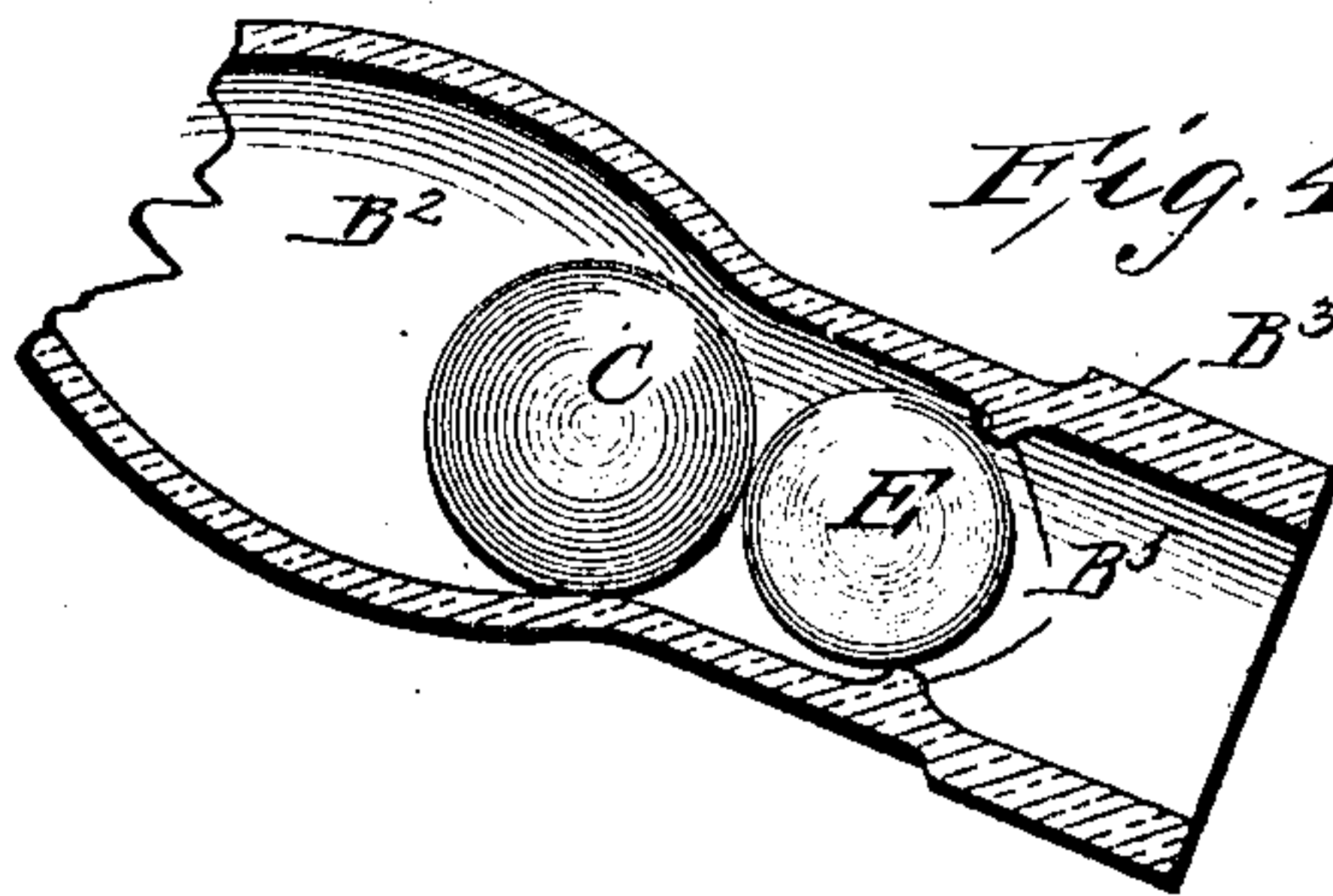


Fig. 4.



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NON-REFILLABLE BOTTLE.

No. 871,702.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, HARRY C. JOHNSON and OSCAR STEIDEL, citizens of the United States, and residents of Washington, in the District of Columbia, have invented an Improvement in Non-Refillable Bottles, of which the following is a specification.

This invention is an improvement in non-refillable bottles having for an object to provide a novel construction whereby two balls within the neck of the bottle may operate one as a sealing ball and the other as a stop ball in connection with a novel construction of bottle neck for permitting the contents of the bottle to be poured or dispensed and for preventing the refilling of the bottle; and the invention consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawing, Figure 1 is a side view partly broken away, and Fig. 2 is a vertical longitudinal section partly broken away of a bottle embodying our invention. Fig. 3 is a cross section on about line 3—3 of Fig. 2; and Fig. 4 is a sectional view showing the bottle tilted and with the balls in position to permit the contents of the bottle to be poured off.

In carrying out the invention, the body A of the bottle may be of any suitable form, and the neck B is contracted toward its lower end forming at B' a seat for the valve C, which latter is in the form of a ball, is preferably made of glass, and has a wire D united with it by a breakable connection at D', preferably by embedding the wire for a short distance within the ball C, so the wire may be operated to lift the ball when it is desired to fill the bottle, and then after the bottle has been filled, be pulled forcibly to detach it at D' from the ball C, leaving the latter free to close by gravity on its seat B' when the bottle is in the position shown in Figs. 1 and 2. Above the seat B' the neck B is spread or enlarged, forming a chamber B² in which the ball valve C is held when the bottle is tilted to the position shown in Fig. 4 by the stop ball E, which also operates within the chamber B², is preferably made of less diameter than the ball C, and like the said ball C preferably of glass, and the diameter of the valve ball C plus that of the stop ball E, is less than the greatest interior diameter of the bottle neck, so the ball valve C cannot pass the ball E when the bottle is tilted to the position shown in Fig. 4. At

its outer end the bottle neck B has a cylindrical bore at B³, and this bore B³ is preferably of slightly greater diameter than the ball E, so the latter may roll down within the bore B³ when the bottle is tilted as shown in Fig. 4, and stop projections B⁵ are arranged in the bore B³ to limit the outward movement of the ball E and stop the parts C and E in the position shown in Fig. 4 when the bottle is tilted.

In operation, when the parts are in the position shown in Figs. 1 and 2, it will be noticed the ball C seals the passage to the body A of the bottle, and thus prevents the pouring of liquid into the said body, except when the wire D is utilized to lift the ball C at the initial filling of the bottle as before described. After the bottle has been filled and the wire D removed, the bottle cannot be refilled when in the position shown in Fig. 2, because of the sealing action of the ball C as before described. However, the bottle may be tilted to the position shown in Fig. 4, in which it will permit the contents of the bottle to be dispensed, the ball C unseating by gravity as will be understood from the said Fig. 4.

In operation, the balls C and E are usually incased within the bottle neck in the operation of forming the latter, as will be understood by those skilled in the art of glass blowing and bottle making.

We claim

1. The improvement in non-refillable bottles herein described, comprising the bottle having its neck contracted toward its lower end forming a seat for a sealing valve and spread above said seat for the play of the sealing valve and its coöperating ball, a sealing valve in the form of a ball and operating in the neck of the bottle and toward and from the seat at the lower end of said neck, a stop ball in the bottle neck and above the ball valve and made of a diameter less than the bore of the upper portion of the neck of the bottle, whereby it may roll therein when the bottle is tilted, and stop projections in the bottle neck above the stop ball and adapted to prevent the seating of the latter, the diameter of the ball valve plus that of the stop ball being greater than the greatest interior diameter of the neck of the bottle, substantially as set forth.

2. A bottle having its neck provided with a chambered portion curving on gradual lines from end to end and terminating at its

lower end in a valve seat and communicating
at its upper end with the upper portion of
the bottle neck and having in the latter at a
considerable distance from the enlarged or
5 chambered portion inwardly projecting stop
projections, a ball valve operating in the
chambered portion of the neck and movable
to and from the seat at the lower end of said
chambered portion, and a stop ball above
10 the ball valve and resting thereon when the
bottle is in upright position and adapted to
roll when the bottle is inverted into the re-

duced portion of the bottle neck and abut
the stop projection therein, the said stop
ball being of less diameter than such portion 15
of the neck whereby it may operate therein
when the bottle is tilted to dispense its con-
tents.

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