

No. 685,114.

Patented Oct. 22, 1901.

P. DAVIS & C. D. BROWN.
NON-REFILLABLE BOTTLE.

(Application filed Feb. 21, 1901.)

(No Model.)

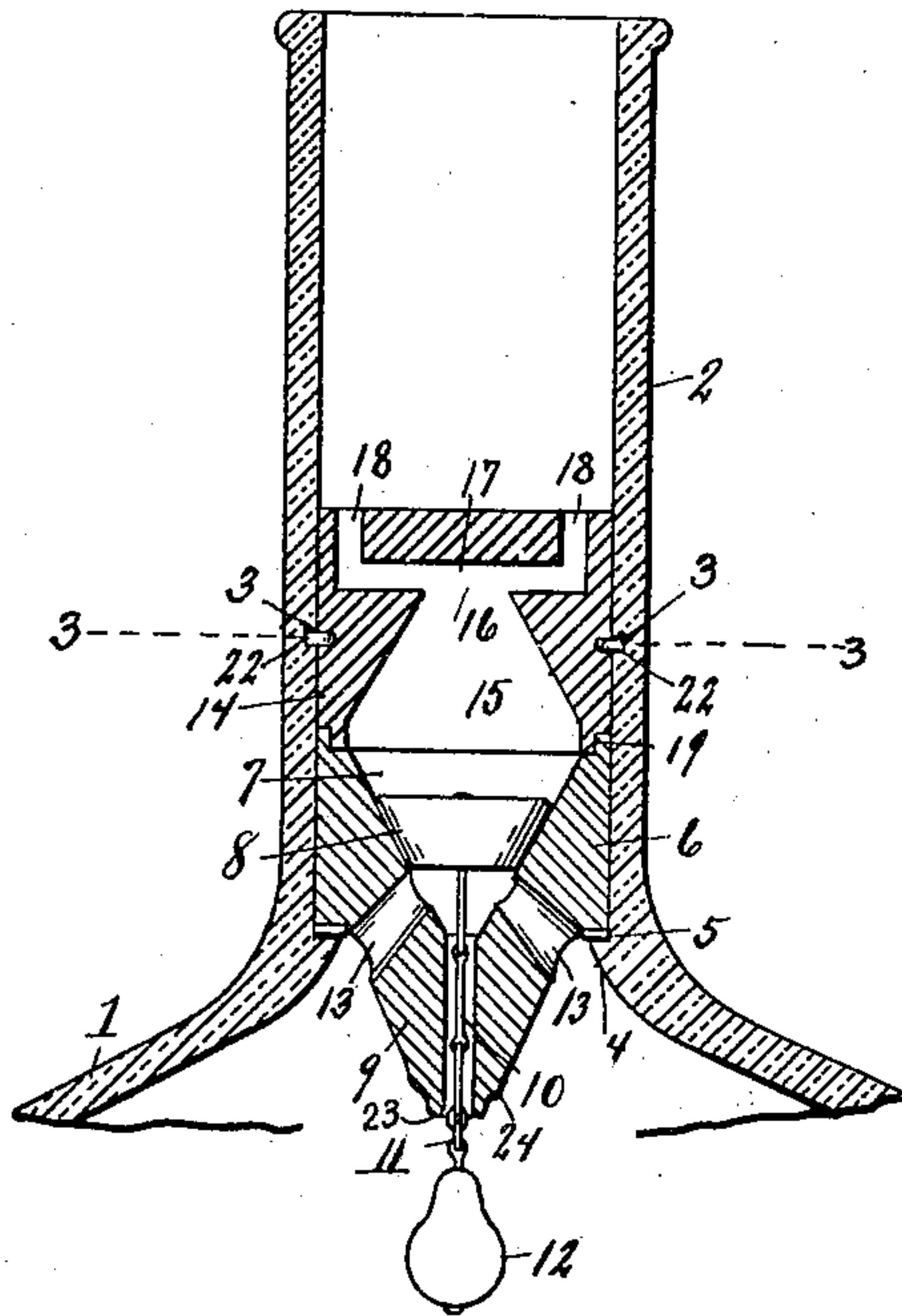


Fig. 1.

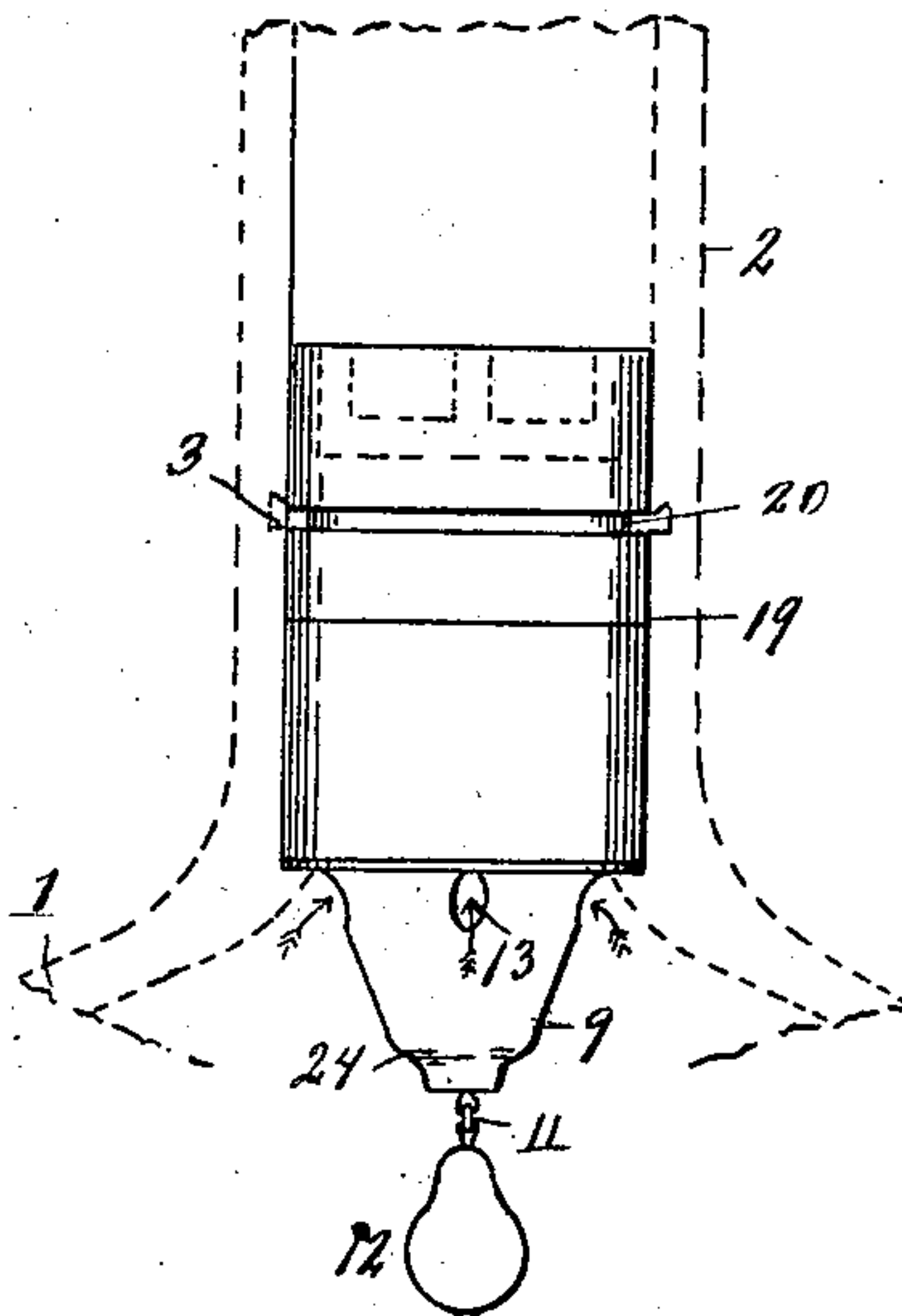


Fig. 2.

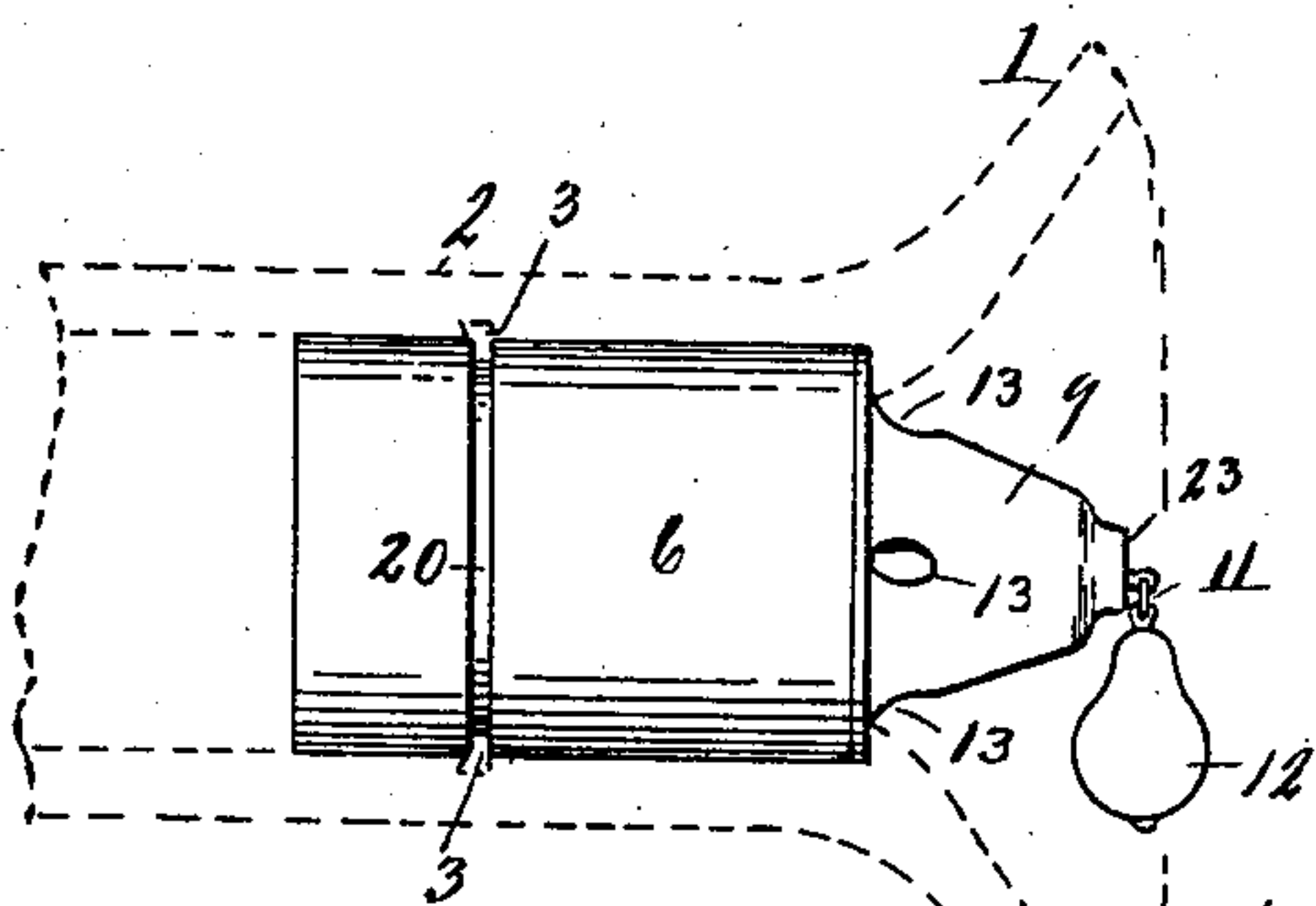


Fig. 4.

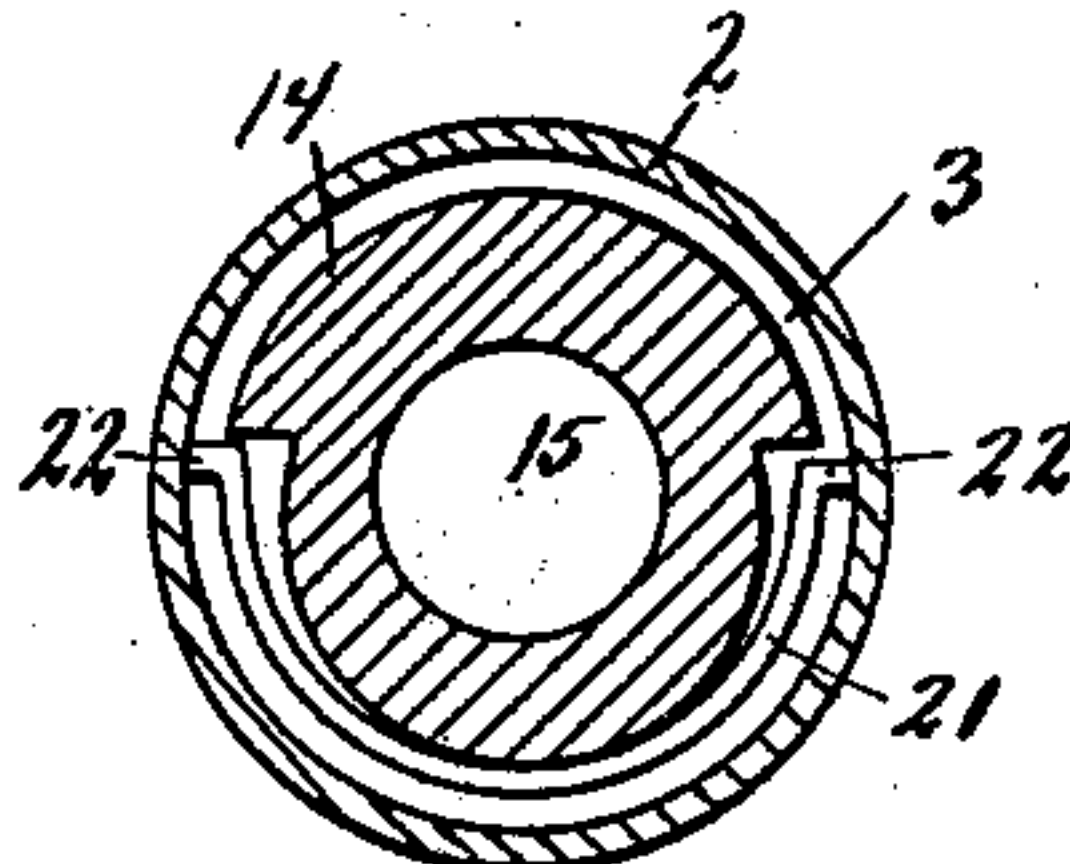


Fig. 3.

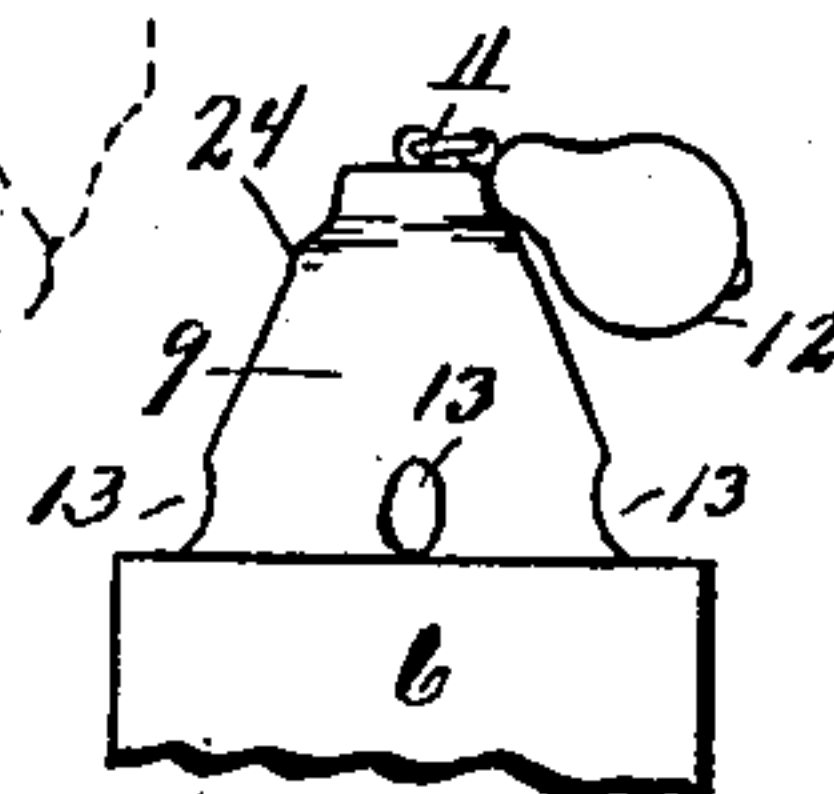


Fig. 5.

WITNESSES.

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UNITED STATES PATENT OFFICE.

PETER DAVIS, OF MELVIN, AND CHARLES D. BROWN, OF VALLEY CENTER,
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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 685,114, dated October 22, 1901.

Application filed February 21, 1901. Serial No. 48,345. (No model.)

To all whom it may concern:

Be it known that we, PETER DAVIS, residing at Melvin, and CHARLES D. BROWN, residing at Valley Center, in the county of Sanilac, State of Michigan, citizens of the United States, have invented certain new and useful Improvements in Non-Refillable Bottles; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to non-refillable bottles; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claim.

The object of the invention is to provide simple and efficient means whereby the contents of a bottle may be readily discharged and in which the arrangement is such that when once emptied the bottle cannot be re-filled.

The above object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through the neck of a bottle embodying our invention. Fig. 2 is an elevation of the plug in which is embodied the operative device. Fig. 3 is a horizontal section, as on line 3 3 of Fig. 1. Fig. 4 is an elevation showing the parts in a horizontal position. Fig. 5 is a detail of the lower portion of the plug, showing the position of the parts when the bottle is held in an inverted vertical position.

Referring to the characters of reference, 1 designates a bottle the body of which is broken away and which is provided with a suitable neck 2, having formed in the inner wall thereof a circular channel 3. Formed upon the inner wall of the neck of a bottle, at a point adjacent its union with the body thereof, is an annular laterally-projecting shoulder 4, adapted to support a packing-washer 5. Supported by said shoulder and seated upon the washer thereon is the lower part 6 of a plug which fills the neck of the

bottle. In the upper end of the plug-section 6 is a tapering aperture 7, adapted to form a valve-chamber and whose sides form a seat for the conical valve 8. Depending centrally from the plug-section 6 is a tubular portion 9, through which the jointed valve-stem 10 extends. Attached to the lower end of said valve-stem by means of the flexible links 11 is a weight 12, which normally maintains said valve upon its seat. Passing diagonally through the tubular portion 9 of the lower part of the plug are the apertures 13, through which the contents of the bottle communicate with the chamber 7 below the valve 8. The upper portion of the plug, which fills the neck of the bottle and which is detachable from the lower portion, comprises a section 14, having therein a recess 15, which forms a complementary portion of the valve-chamber and which communicates through a central opening 16 with a chamber 17 in said upper plug-section, into which lead a number of openings 18, formed around the margin of the top of said upper plug-section and through which the contents of the bottle escape after passing the valve 8. The purpose of dividing the plug into an upper and a lower section is to enable the valve-seat of the lower section to be properly ground, so as to allow the valve to make a tight closure. The two sections of the plug are made to fit together, as shown by the joint 19, and when united they are placed in the neck of the bottle and forced down until the bottom of the lower section rests upon the washer 5. To lock the plug in place, the upper section is provided with a semicircular recess 20 in the wall thereof, in which a semicircular spring 21 is adapted to lie, having the outwardly-turned end portions 22. As the plug is forced into place the ends 22 of said spring engage in the annular channel 3 in the wall of the neck of the bottle and securely lock said plug in position, as shown in Figs. 1 and 3.

When the bottle is tipped to pour the contents therefrom, the weight of the liquid against the under face of the valve, together with the weight of the valve itself, is sufficient to overcome the gravity of the weight 12 and allow the contents of the bottle to flow out. As the bottle assumes a horizontal po-

sition, the weight depends from the end of the tubular portion 9, as shown in Fig. 4, the flexible links 11 drawing over the rounded portion 23 of the valve-stem opening, so that
5 the weight at all times exerts its force upon the valve 8 and prevents, when the bottle is empty, any backward flow of fluid into the bottle when held in a horizontal position. As the bottle is tipped still farther, so as to assume a vertical position, as shown in Fig. 5,
10 the rounded upper end of the weight bears upon the annular bead 24 and exerts a leverage force upon the valve-stem to draw the valve onto its seat, preventing the forcing of
15 any fluid into the bottle, no matter in what position the bottle may be held, so that when the contents of the bottle have been exhausted said bottle cannot under any circumstances be refilled, thereby preventing the practice
20 of fraud by the refilling of the bottle with fluid contents inferior to that which it originally contained.

It is designed that the parts of the plug shall be molded in glass and that the valve-stem and weight are to be formed of some
25 suitable non-corrosive material.

Having thus fully set forth our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a device for the purpose set forth, the combination with the neck of a bottle having
30 an annular channel in the wall thereof, a two-part plug adapted to be seated in the neck of a bottle, the lower part of said plug having therein a valve-chamber and a depending
35 tubular portion, a valve in said valve-chamber, the stem of said valve passing through the tubular portion of the lower part of the plug, a weight attached to said stem, said tubular portion of the plug having aper-
40 tures therethrough communicating with the valve-chamber below the valve, the upper part of said plug having a recess which forms a complementary portion of the valve-chamber and discharge-openings out of alignment
45 with the openings leading from said recess, and means operating in connection with the neck of the bottle to lock the upper portion of the plug onto the lower portion and secure
50 both portions of the plug in the neck of the bottle.

In testimony whereof we sign this specification in the presence of two witnesses.

PETER DAVIS.

CHARLES D. BROWN.

Witnesses:

E. S. WHEELER,

C. E. JOSLIN.