

E. B. PIKE & L. HAYNE.
CLOSURE FOR COLLAPSIBLE TUBES, BOTTLES, &c.
APPLICATION FILED JAN. 27, 1909.

928,692.

Patented July 20, 1909.

Fig. 1.

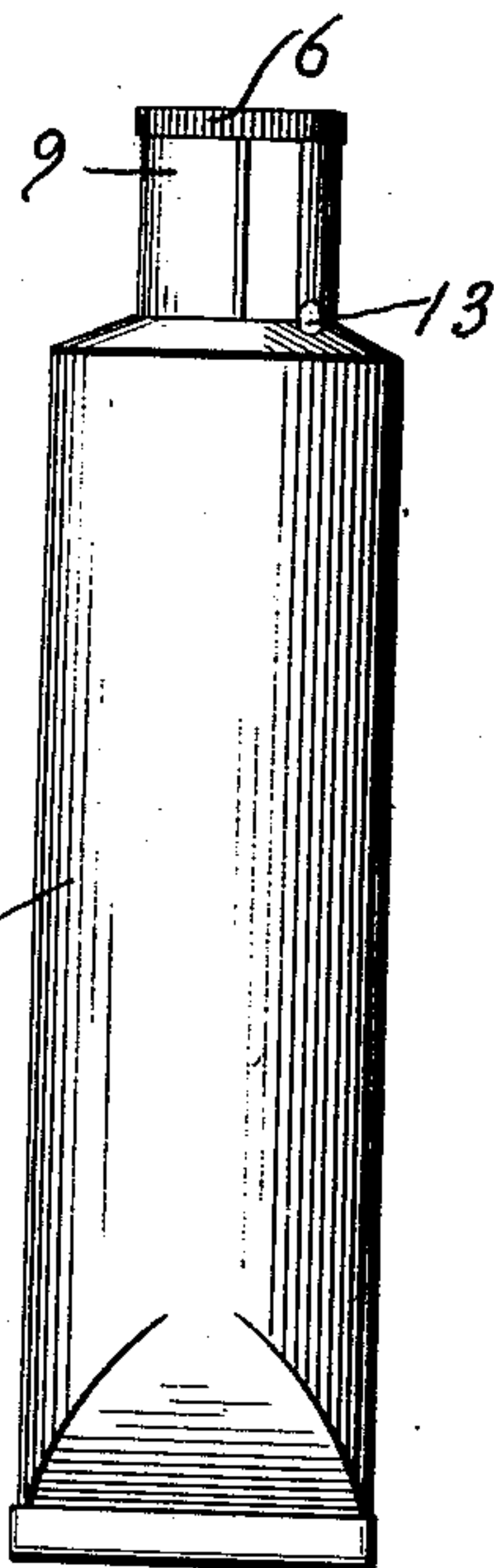


Fig. 5.

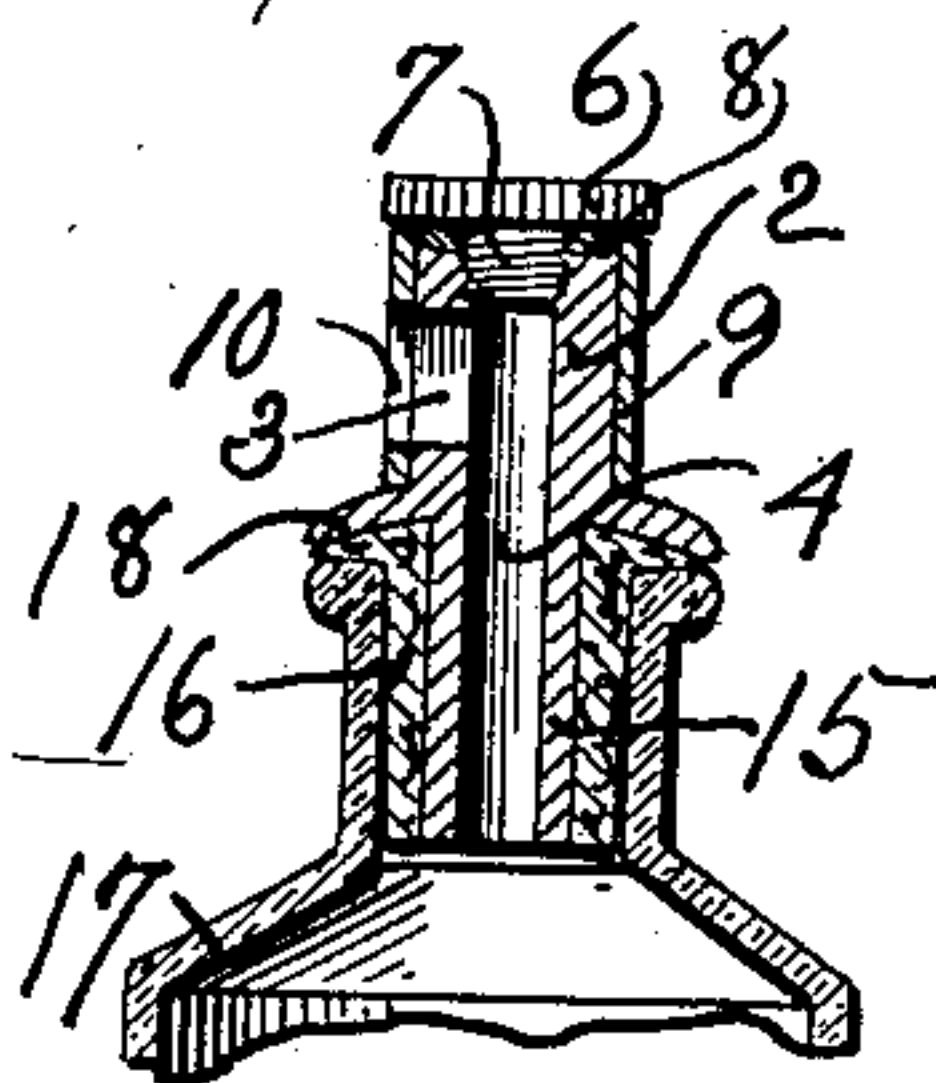


Fig. 6.

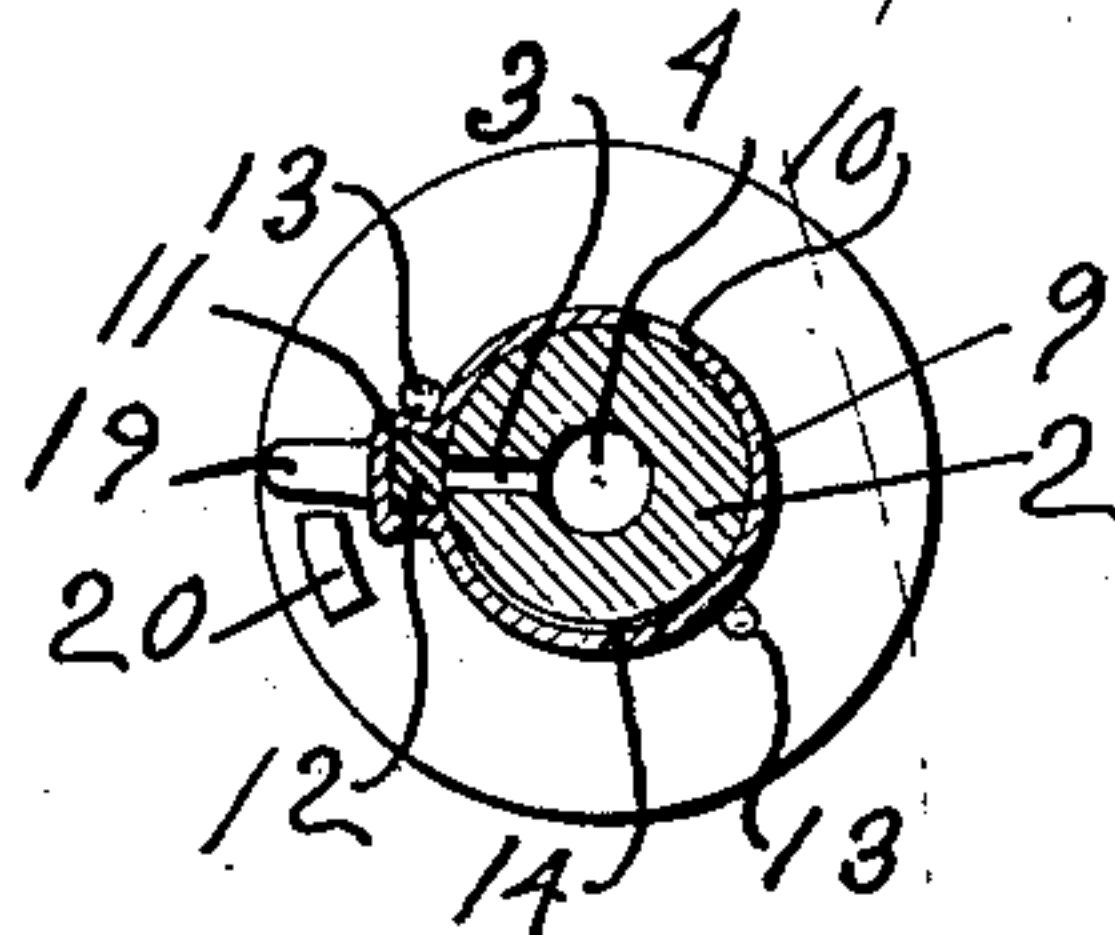


Fig. 2.

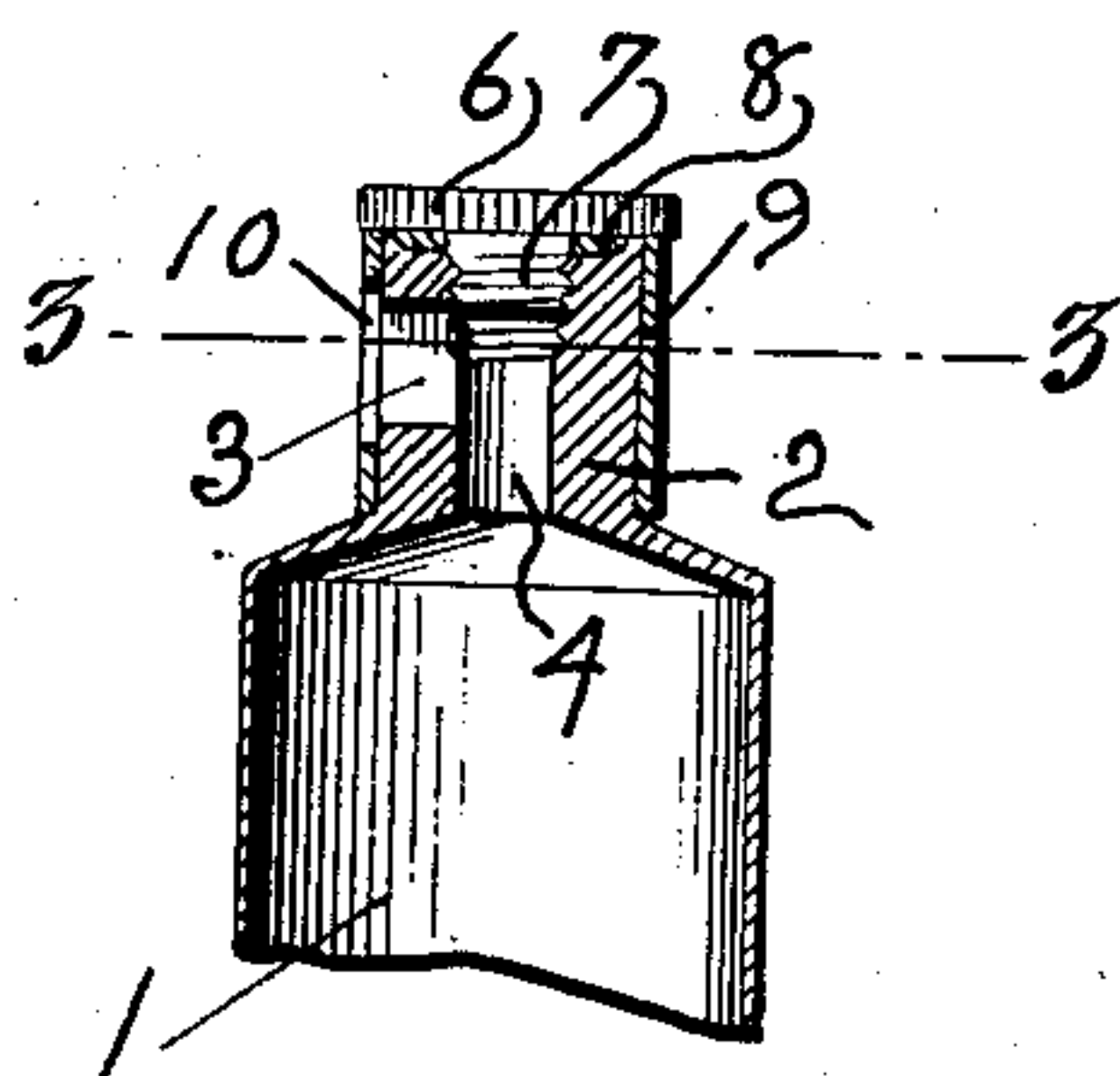


Fig. 3.

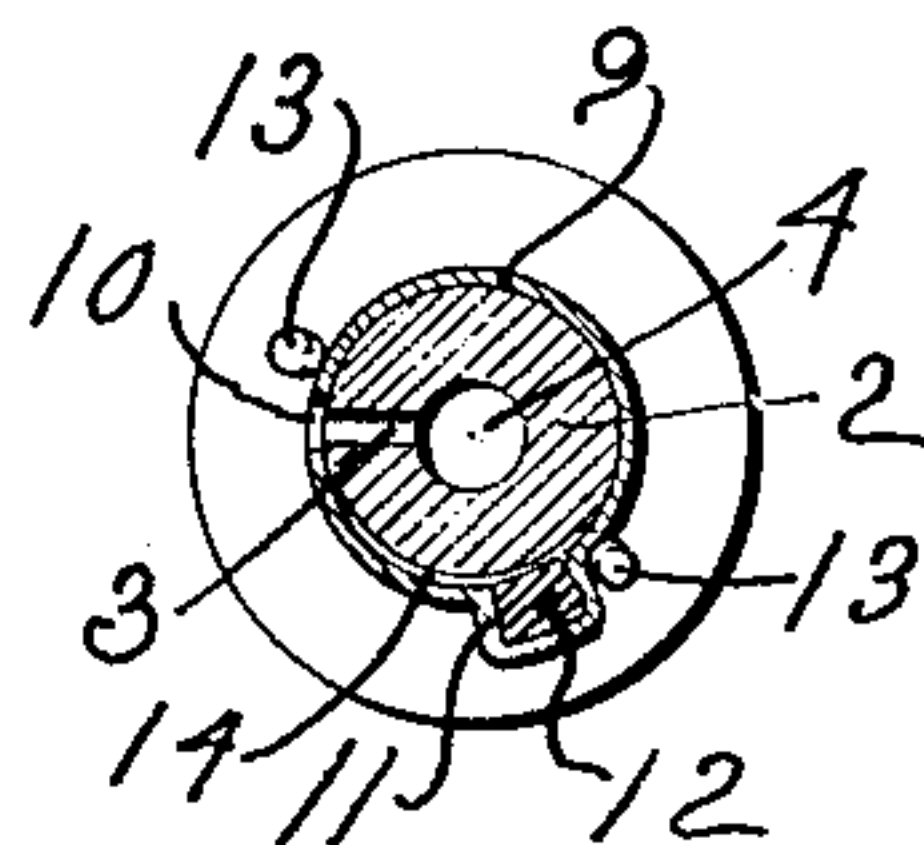
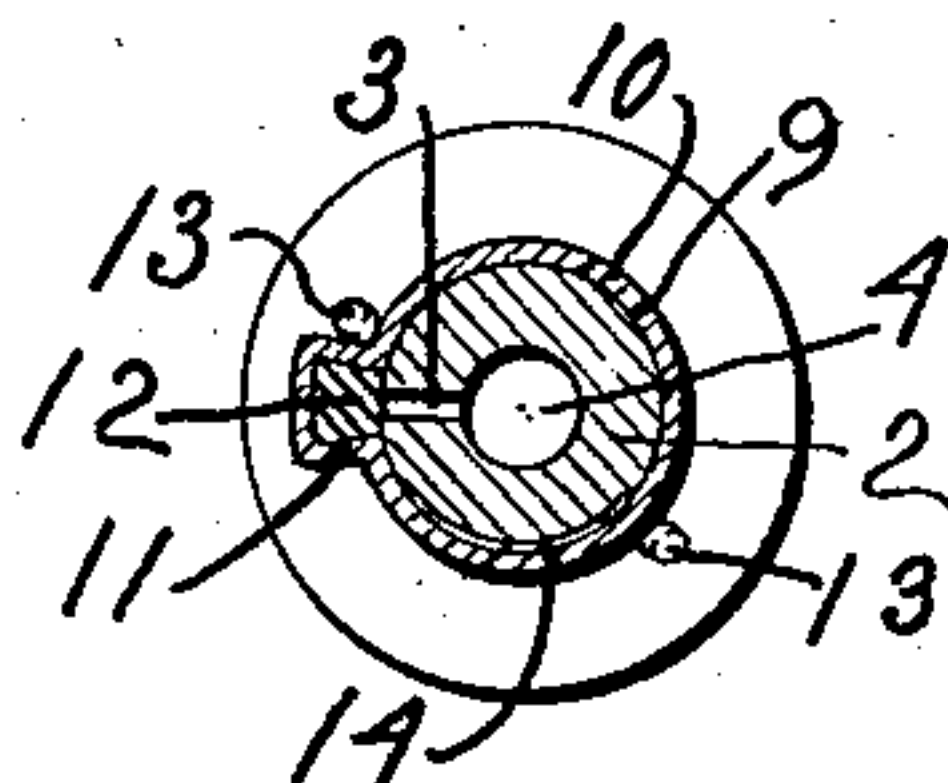


Fig. 4.



WITNESSES:

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CLOSURE FOR COLLAPSIBLE TUBES, BOTTLES, &c.

No. 928,692.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, EDWIN BERTRAM PIKE and LEVI HAYNE, citizens of the United States, residing, respectively, at Pike, in the county of Grafton, State of New Hampshire, and Newark, in the county of Essex, State of New Jersey, have invented certain new and useful Improvements in Closures for Collapsible Tubes, Bottles, &c., of which the following is a description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to a new and improved closure for use with receptacles such as collapsible tubes, bottles, cans, etc., and, while designed with especial reference to use with receptacles containing liquid, semi-liquid or plastic substances such as toilet preparations, tooth paste, etc., it is also applicable to receptacles containing dry or powdered substances.

The objects of our invention are to provide a closure for the purposes above enumerated which will be tight when closed but which at the same time may be readily and easily opened, which may be readily and cheaply manufactured, which will be compact, and effective for the purposes stated.

With the above mentioned objects in view, our invention consists in the improved closure illustrated in the accompanying drawing, described in the following specification, and particularly claimed in the clauses of the concluding claim.

In the drawing: Figure 1 is a view showing our device in elevation as applied to a collapsible tube; Fig. 2 is a view showing a section taken upon a vertical plane passing through the discharge orifice of the receptacle; Fig. 3 is a view showing a section upon a plane indicated by the line 3-3, Fig. 2, the discharge orifice being open; Fig. 4 is a similar view showing the position assumed by the parts when the discharge orifice is closed; Fig. 5 is a view similar to Fig. 2 but showing our device as applied to a stopper for a bottle; and Fig. 6 is a view show-

ing a slightly modified form of certain features of our device.

Referring to the drawing, 1 is the body portion of a collapsible metallic tube designed to contain a semi-liquid or plastic substance, and 2 is a neck at the upper end thereof and preferably formed continuously with the body portion 1. The neck 2 is provided with a discharge orifice 3 in the side wall thereof, and with a passage 4 leading from the orifice 3 to the interior of the tube, the outer end of which passage is prolonged and extends through the end wall of the neck 2 and is threaded at its outer end to receive the threaded projection 7 of a cap 6, and 8 is a packing interposed between the cap 6 and the outer end of the neck 2 in order to insure a tight joint between the parts.

9 is a rotary closing member shown as in the form of a metallic band surrounding the neck 2 and provided with an opening 10 adapted to register with the discharge orifice 3 of the neck 2, and rotatable upon the neck 2 to bring the orifice 10 into and out of alinement with the orifice 3. This closure is provided with a recess at 11 extending throughout its length and adapted to receive a packing member 12 of rubber, cork, or analogous material, which packing member may be brought into a position over the discharge orifice 3 by rotating the closing member 9 to thereby close said passage. The walls of the recess 11 form a convenient projection to keep the fingers from slipping in rotating the closing member 9, and 13 are two stops for limiting the extent of rotary movement of the closing member 9 as will be understood. The periphery of the side wall of the neck 2 is recessed or cut away throughout its length from a point adjacent the discharge orifice 3 to a point beyond the position occupied by the packing member 12 when the discharge orifice 3 is open, as shown at 14 in Figs. 3 and 4, from which it will be seen that in rotating the closing member 9 from the position shown in Fig. 4 to open the discharge orifice the packing member 12,

as soon as it is moved from over the orifice 3, will pass over the recessed portion 14 of the neck and, as it therefore does not engage and move in contact with the neck during the rest of its opening movement, friction between the parts is thus avoided. The closing member 9 therefore moves more easily in opening and closing than is the case in similar devices not provided with a recess, and in which the packing engages the surface of the neck throughout the whole of its opening and closing movements.

In the form of our device shown in Fig. 5 adapted for use with glass bottles, the neck 2 is formed with a depending portion 15 about which a cork or other yieldable packing 16 is placed and which depending portion and packing are adapted to enter the neck of a bottle 17 as shown. 18 is a collar against which the upper end of the packing 16 rests, and which serves as a support for the stops 13 and as an abutment for the lower end of the rotary closing member 9.

In Fig. 6 a slightly modified form of our device is shown wherein locking means are provided for securing the rotary closing member in its closed position. This is accomplished by providing an arm 19, which may be conveniently formed integrally with the walls of the recess 11, and a lug or projection 20 secured to the top of the receptacle with which the closure is used. The lower face of the arm 19 is in a plane such that it rides tightly over the lug 20 and then relieves slightly as the closing member 9 moves into position to close the orifice 3, which lug prevents the return of the arm until sufficient force is applied to it, as when the orifice 3 is to be opened, to force the arm back and cause it to rise slightly and pass over the lug 20.

Having thus described our invention and explained the operation thereof, we claim and desire to secure by Letters Patent:

1. In a closure for receptacles, a neck provided with a discharge orifice and with a passage leading from said orifice to the interior of the receptacle; a rotatable closing member supported by said neck and provided with an opening adapted to register with said discharge orifice; and a packing member carried by said closing member and adapted to move into a position to close said discharge orifice, said neck being provided with a recess terminating adjacent said discharge orifice and over which said packing member moves as said closing member is rotated.

2. In a closure for receptacles, a neck provided with a discharge orifice in its side wall and with a passage leading from said orifice to the interior of the receptacle; a rotatable closing member surrounding said neck and provided with an opening adapted to regis-

ter with said discharge orifice; and a packing member carried by said closing member and adapted to move into a position to close said discharge orifice, the side wall of said neck being provided with a recess terminating adjacent said discharge orifice and over which said packing member moves as said closing member is rotated.

3. In a closure for receptacles, a neck provided with a discharge orifice in its side wall and with a passage leading from said orifice to the interior of the receptacle; a rotatable closing member surrounding said neck and provided with an opening adapted to register with said discharge orifice, and provided also with a recess; and a packing member located within said recess and adapted to move into a position to close said discharge orifice, the side wall of said neck being provided with a recess terminating adjacent said discharge orifice and over which said packing member moves as said closing member is rotated.

4. In a closure for receptacles, a neck provided with a discharge orifice in its side wall and with a passage leading from said orifice to the interior of the receptacle; a rotatable closing member surrounding said neck and provided with an opening adapted to register with said discharge orifice, and provided also with a recess; and a packing member located within said recess and adapted to move into a position to close said discharge orifice, the side wall of said neck being provided with a recess terminating adjacent said discharge orifice and over which said packing member moves as said closing member is rotated, said neck being prolonged whereby the closure may be inserted in the neck of the bottle.

5. In a closure for receptacles, a neck provided with a discharge orifice in its side wall and with a longitudinally extending passage leading from the interior of the receptacle and threaded at its outer end and with which passage said discharge orifice communicates; a cap at the extremity of said neck and provided with a threaded projection in engagement with the threaded outer end of said passage; a rotatable closing member surrounding said neck and retained thereupon by said cap, and provided with an opening adapted to register with said discharge orifice; and a packing member carried by said closing member and adapted to move into a position to close said discharge orifice, the side wall of said neck being provided with a recess terminating adjacent said discharge orifice and over which said packing member moves as said closing member is rotated.

6. In a closure for receptacles, a neck provided with a discharge orifice and with a

passage leading from said orifice to the interior of the receptacle; a rotatable closing member supported by said neck and provided with an opening adapted to register
5 with said discharge orifice; a packing member carried by said closing member and adapted to move into a position to close said discharge orifice; an arm carried by said closing member; and a lug over which said
10 arm rides as said closing member moves into a position to close the discharge orifice, said

neck being provided with a recess terminating adjacent said discharge orifice and over which said packing member moves as said closing member is rotated. 15

This specification signed and witnessed this 26th day of January A. D. 1909.

EDWIN BERTRAM PIKE.

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Witnesses:

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HENRY M. POWELL.