

Nov. 23, 1954

W. VOSS

2,695,111

DISPENSING CLOSURE FOR RECEPTACLES

Filed April 24, 1947

2 Sheets-Sheet 1

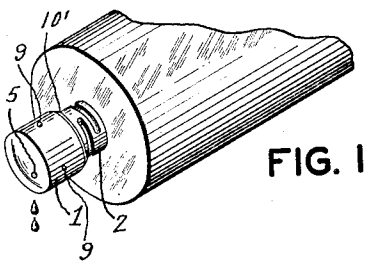


FIG. 1

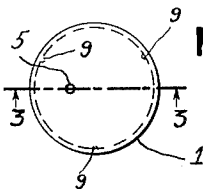


FIG. 2

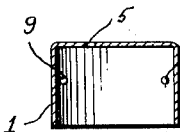


FIG. 3

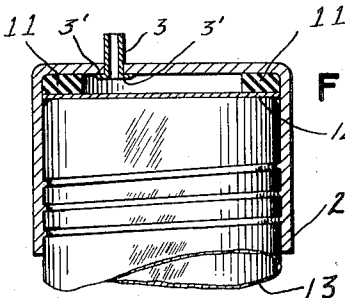


FIG. 7

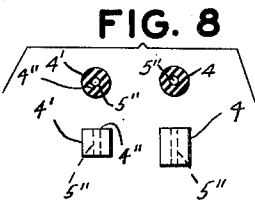


FIG. 8

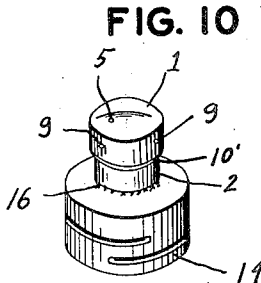


FIG. 10

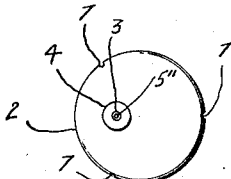


FIG. 4

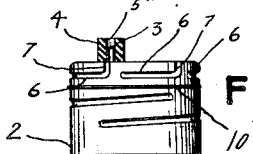


FIG. 5



FIG. 14

FIG. 6

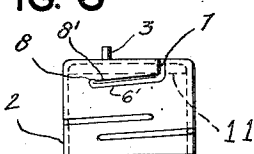


FIG. 12

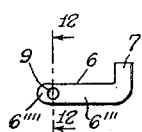


FIG. 13

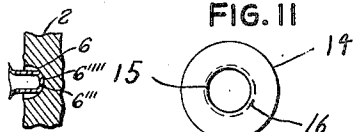


FIG. 11

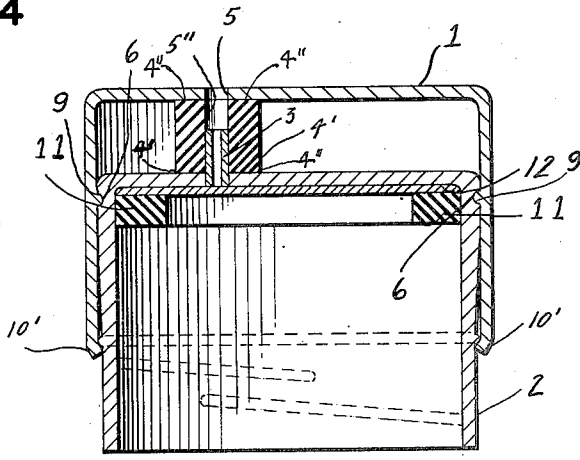


FIG. 9

INVENTOR.
Walter Voss

ATTORNEY

Nov. 23, 1954

W. VOSS

2,695,111

DISPENSING CLOSURE FOR RECEPTACLES

Filed April 24, 1947

2 Sheets-Sheet 2

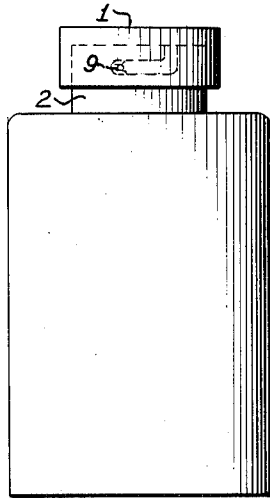


FIG. 15

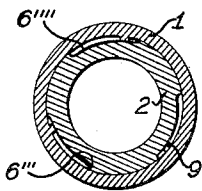


FIG. 16

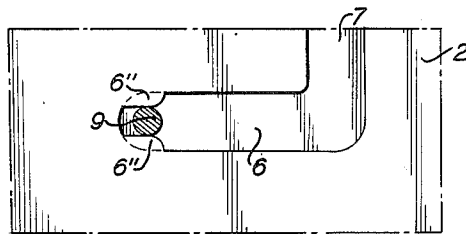


FIG. 17

INVENTOR

Walter Voss

BY

Young, Emery & Thompson
ATTORNEYS

1

2,695,111

DISPENSING CLOSURE FOR RECEPTACLES

Walter Voss, New York, N. Y.

Application April 24, 1947, Serial No. 743,674

1 Claim. (Cl. 215—44)

The present invention relates to closures for various types of bottles and other containers.

More specifically, the invention relates to a closure for various types of dispensers in which one of the objects is to provide means in a cap portion and a cover for the cap portion coacting as relatively moving parts to produce a jamming action to securely hold the cover on the cap portion in closed position.

A further object of the invention resides in a closure in which a groove, a rib or other guiding means is provided in one of the relatively moving parts of the closure to tighten or clamp onto a pin in the other of the relatively moving parts so that either the point of the pin engages the bottom of the groove, or the shank of the pin engages the side or sides of the groove, rib or guide means.

A still further object of the invention resides in a closure for receptacles in which the main part of the closure cap is provided with a reduced portion which latter includes the means to open and close communication to the container on which the closure is mounted. Another object of the invention resides in a closure cap member which is provided with a slot or other means which, for instance, is inclined at an angle relative to the top of the cap to thus tightly wedge the cap in closed position due to the incline of the slot.

A further object of the invention is the provision of a protecting means in such closure with relatively movable parts, to make tampering with the contents of the container noticeable.

Further objects will be apparent from the following description when considered in connection with the accompanying drawing in which:

Figure 1 is a perspective view of the cap cover mounted on a receptacle,

Fig. 2 is a top plan view of the cover of Fig. 1,

Fig. 3 is a cross-sectional view of the cap taken on line 3—3 of Fig. 2,

Fig. 4 is a top plan view of a neck portion of the closure of Fig. 1,

Fig. 5 is a side elevation, partly in section of a neck portion of the closure of Fig. 1,

Fig. 6 is a side elevation of a modified neck portion of the closure,

Fig. 7 is a cross-sectional view of the neck portion on a bottle neck,

Fig. 8 is a detailed view of an elastic pad for the closure,

Fig. 9 is a cross-sectional view of a modified closure with the cap in the open or dispensing position,

Fig. 10 is a perspective view of a modified closure cap,

Fig. 11 is a top plan view of a part of the cap of Fig. 10,

Fig. 12 is a cross section of a modified detail, taken on line 12—12 of Fig. 13,

Fig. 13 is a diagrammatic view of the modified detail of Fig. 12,

Fig. 14 is a diagrammatic view of a modified extension cap,

Fig. 15 is a side elevation of a container and closure showing the modified construction of Fig. 14,

Fig. 16 is a cross section through the neck and closure of a container showing the modification of Figs. 12 and 13, and

Fig. 17 is a side elevation showing the detail of the groove and pin of Fig. 15.

The cover 1, Figs. 1 to 3, is cup-shaped and is provided

2

with a perforation 5 which is preferably off center as shown. The side wall of the cover is provided with a plurality of spaced inwardly projecting pins 9 of which there are preferably three in number spaced equally 120° apart. Any other number of pins, however, may be employed, but three or more equally spaced are considered as a preferred number.

The rotatable cover 1 cooperates with a neck or cap portion 2, Figs. 1 and 5, which is provided with locking and jamming grooves 6 and 7 equal in number to the number of pins 9 with which they cooperate. The cap portion 2 which forms the other part of the dispensing closure has a short tube 3, Figs. 4 to 7 and 9, secured therein at a point remote from the center and is secured coaxially with a perforation in the neck portion. A pad 4 or 4' having a perforation 5' therein is mounted on the tube 3 and normally projects a short distance above the outlet end of the tube 3. The pad 4 is made of any suitable flexible or elastic material, such as rubber and rubber compositions, leather, and the like, and such pad may be treated with a fat or any other substance to improve the tightness of the closure. As indicated in Fig. 9 the pad rests with its surfaces 4'' against the cover 1 and the cap portion 2.

As shown in Fig. 7, the tube 3 may be secured at 3' to the underside of the cap portion 2 and a ring 11 may be utilized as a washer provided on a sealing disc 12 which latter may be punctured upon first use of the contents of the container 13.

As shown in Figs. 5 and 14, the grooves in the cap portion 2 have a vertical groove portion 7 and a horizontal groove portion 6 at right angles to the portion 7 so that the pins 9 of the cover portion 1 may first move down the portion 7 and then become locked and jammed in the groove 6. The groove may have a slight downward slope as shown in Fig. 6 by the part 6' which terminates from the sloping or jamming contacting surface 8' into the end part 8. In another form of the invention the sides of the groove 6'', Figs. 14 and 17, may converge inwardly on each side of the groove to thus jam the pin 9 in its locked position on opposite sides of the pin. While the foregoing is taking place, the pad 4 is being compressed tightly between the cover 1 and cap 2 around the tube 3, thus providing a perfectly tight closure with the hole 5 in the cover out of registry with the tube 3.

It is also possible, as shown in Fig. 16 to provide a wedging or jamming action by gradually diminishing the depth of the groove as a jamming contacting surface, Figs. 12 and 13, in which the depth of the groove 6''' gradually becomes more shallow toward the end 6''' to tightly hold the cover on the cap.

Fig. 8 shows the pad 4 and 4' which may be of different lengths depending upon the material and the amount of closure force required or desired between the cover and the cap. The pad may be of a different shape with the hole 4'' or 5'' in the center or off center.

Fig. 10 shows a cap 14 provided with a reduced portion 2 which may be suitably combined as, for instance, welded, soldered, wedged, glued or screwed together at 16 and on which the cover 1 is mounted in the manner similar to the modification described.

The operation of the dispensing closure is believed closure is believed to be obvious from the foregoing description of the various parts of the complete structure. As shown in Fig. 9 the cover and cap are in an aligned position for dispensing after the disc 12 has been pierced and it will be seen that both the hole 5 and tube 3 are offset from the center. Upon rotation of the cover 1 the pins 9 follow the grooves 6 and by the jamming action as shown in Figs. 6, 12 and 14, the cover 1 is locked on the cap 2 with the hole 5 and tube 3 out of alignment and the pad 4 compressed between the cap and cover. Thus, no leakage can take place. Motion of the cover in one direction closes the dispenser and in the other direction opens the dispenser.

It is, of course, obvious that the pins and grooves may be reversed from that shown, that is, the grooves may be provided in the cover 1, and the pins in the cap 2, as the operation and effects would be the same.

A neck or glass neck of a container itself can, as an

3

example, also have the cap or its equivalent the same as the cap 2 and in such case the container neck would take the place of and eliminate the entire and separate cap 2 so that the cover 1 would in such case act direct on such container neck.

The accompanying drawings will not limit my invention in any way or manner. It is expressly emphasized that the scope of this invention is not to be construed as limited by the drawings or by the description as many other modifications can be made without departing from the spirit of my invention.

I claim as my invention:

A closure for receptacles comprising a closure cap portion for a neck portion of the receptacles, one of said portions having a plurality of bayonet-shaped slots and the other portion having a plurality of projecting pins one for each slot, each slot having an open end and a closed end with a straight part intermediate and connected to the two ends to form a groove, and said groove having a pair of projections one on each side and at the closed end thereof to grip, jam and lock the pin in the closed position of the closure cap on the

4

receptacle by direct contact of the projections on a portion of the pin.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
603,108	Lindemeyr	Apr. 26, 1898
826,796	McManus	July 24, 1906
968,947	Hughes et al.	Aug. 30, 1910
1,473,540	Bernardo	Nov. 6, 1923
1,538,848	Dunnock	May 19, 1925
1,586,781	Case	June 1, 1926
1,646,324	Stewart	Oct. 18, 1927
1,685,147	Case	Sept. 25, 1928
1,685,727	Stewart	Sept. 25, 1928
1,863,796	Jackson	June 21, 1932
1,890,347	Voss	Dec. 6, 1932
1,954,541	Satz	Apr. 10, 1934
2,265,015	Watson	Dec. 2, 1941
2,319,252	Monnet	May 18, 1943
2,364,126	Cantor	Dec. 5, 1944