Nov. 25, 1952 W. RAAB 2,618,800

COMBINED BOTTLE CLOSURE, APPLICATOR, AND LIQUID DISPENSER

Filed March 21, 1949

Fig. 1.

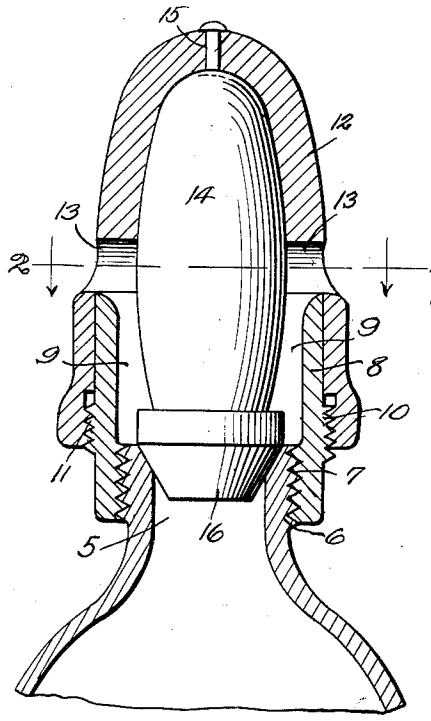


Fig. 3.

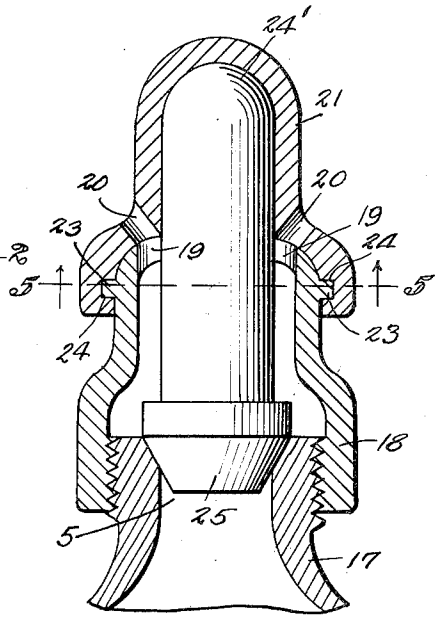
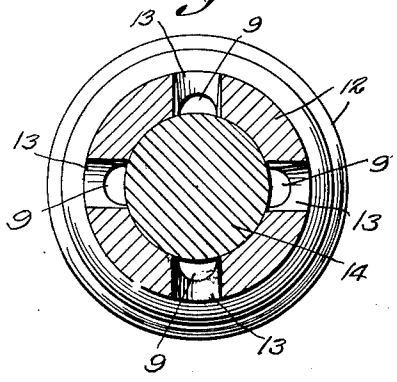


Fig. 2.



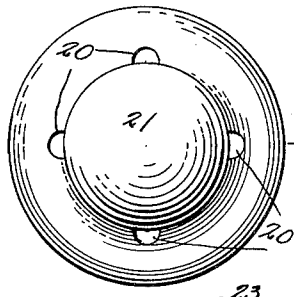


Fig. 4.

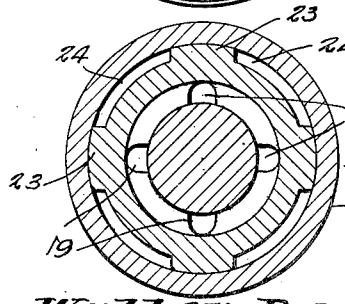


Fig. 5.

Walter Raab INVENTOR

BY C. A. Snow & Co.

ATTORNEYS.

Patented Nov. 25, 1952

2,618,800

UNITED STATES PATENT OFFICE

2,618,800

COMBINED BOTTLE CLOSURE, APPLICATOR, AND LIQUID DISPENSER

Walter Raab, Albany, N. Y.

Application March 21, 1949, Serial No. 82,520

1 Claim. (Cl. 15—138)

1

This invention relates to a stopper or closure designed for use in connection with tubes containing various types of material such as tooth pastes, liquids or the like, the primary object of the invention being to provide a combined stopper and cap for the stopper, whereby the discharge openings of the applicator, may be covered and protected against drying out the material contained within the channels of the applicator, as well as excluding foreign matter which would render the contents of the tube unfit for use.

An important object of the invention is to provide a device of this character which may be readily and easily screwed into position on the threaded end of a container tube, bottle or the like, eliminating the necessity of making changes in the construction of the container tube, to mount the device.

An important object of the invention is to provide a device of this character including a body portion having longitudinal channel-ways with their discharge ends located adjacent to the upper end of the body portion, and a rotatable cap mounted on the body portion with openings that register with the body portion so that material within the body portion or tube may be forced therefrom.

Still another object of the invention is to provide a stopper which is movable with the closure to the end that when the closure is moved to bring the openings thereof out of alignment with the passageways formed in the body portion, the stopper will be moved to close the discharge end of the tube or container with which the device is used, and when the cover is rotated to cause the openings thereof to register with the passageways, the stopper will be moved to open the mouth of the tube or bottle.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing

Figure 1 is a longitudinal sectional view through a combined bottle cap and applicator, showing the stopper carried by the cap as seated in the mouth of the bottle closing the same.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a longitudinal sectional view through

2

a modified form of the combined bottle cap, stopper and applicator.

Fig. 4 is a plan view thereof.

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 3.

Referring to the drawing in detail, the reference character 5 indicates the mouth of a bottle, tube or other container which is formed with external threads 6 which threads cooperate with the internal threads 7 formed on the lower section 8 or body portion of the cap.

This lower section 8 is formed with longitudinally disposed grooves 9 formed in the inner surface thereof, the grooves being spaced equidistantly apart.

This lower section is also formed with external threads 10 that cooperate with the internal threads 11 formed at the lower end of the vertically movable cap 12 whereby the cap may be moved vertically, by rotating the cap 12 on the lower section 8.

As shown, the cap 12 is formed with openings 13 which are also disposed equidistantly apart and so arranged that when the cap 12 is rotated, the openings 13 may be moved into and out of registry with the upper or discharge ends of the grooves 9 to permit the material within the tube or container with which the cap is used, to pass therefrom.

Secured within the cap 12 is the plug 14 which closely fits within the cap 12 and is secured in position by means of the rivet 15 that is shown as extending through the cap 12 and embedded in the upper end of the plug 14.

At the lower end of the plug is the valve member 16 which is adapted to seat in the mouth of the tube or container with which the device is used, cutting off the passage of material from the bottle or tube with which the device is used.

In the form of the invention as shown by Fig. 3 of the drawing, the mouth of the container, which may be either a tube, bottle or jar, is indicated by the reference character 17, which is formed with external threads to cooperate with the internal threads of the lower section 18 of the cap.

This section 18 is formed with discharge openings 19 that are designed to register with discharge openings 20 formed in the inner end of the cap 21, the discharge openings 20 moving into register with the openings 19, so that material may pass therefrom.

Ribs 23 extend laterally from the upper end of the lower section of the cap and move in grooves 24 formed within the lower end of the

cap 21, thereby affording means whereby the cap 20 may be readily rotated with respect to the lower section 18 of the cap for permitting material to pass therefrom.

Secured within the cap 21, is the plug 24' which is provided with a stopper 25 at its lower end, beveled to fit within the open end of the container 17, closing the container preventing the contents thereof from passing from the container.

When it is desired to discharge a quantity of the material held within the container 17, the cover 21 is rotated bringing the discharge openings 20 of the cap 21 into registry with the discharge openings 19. With this movement of the cap, the lower section 18 of the cap must be slightly rotated to cause the stopper 25 to be unseated to permit the material to flow therefrom.

As clearly shown by the drawing, the outer ends of the caps 12 and 21 are curved, to the end that the outer ends of the caps may be effectively employed as applicators in applying the material contained within the tube or bottle with which the device is used.

When the caps have been properly returned to their closing positions, the stoppers will move to close the mouths of the containers, completely sealing the contents of the containers.

Having thus described the invention, what is claimed is:

A stopper of the class described, comprising a lower section having internal threads adapted to be fitted over the threads of a bottle mouth, said lower section having longitudinally disposed grooves formed in the inner surface thereof providing discharge grooves, a cap fitted over the lower section, said cap having discharge openings extending laterally therethrough adapted to register with the longitudinally disposed grooves of the lower section providing discharge openings for material passing through said grooves, an elongated plug fitted within the cap, a valve member formed on one end of the plug adapted to fit within the mouth of the bottle on which the cap is positioned, closing said bottle, means for securing the plug to the cap effecting movement of the plug as the cap is rotated, opening and closing said valve, and said cap presenting a curved applicator surface.

WALTER RAAB.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
673,918	Murray	May 14, 1901
737,471	Platner	Aug. 25, 1903
1,090,091	Alexander et al.	Mar. 10, 1914
1,132,175	Filczer	Mar. 16, 1915
1,418,814	Lutz et al.	June 6, 1922
1,601,818	Fusay	Oct. 5, 1926
1,869,808	Hancock	Aug. 2, 1932
2,039,037	Simpson	Apr. 28, 1936
2,040,091	Koller	May 12, 1936
2,051,513	Bingham	Aug. 18, 1936
2,167,476	Diefenbach	July 25, 1939
2,364,126	Cantor et al.	Dec. 5, 1944