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A. F. KROEN

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CLOSURE FOR CONTAINERS

Filed July 8, 1932

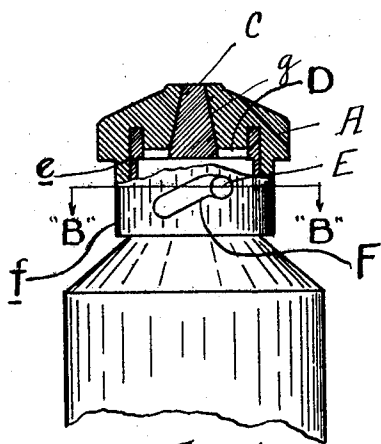


Fig. 1

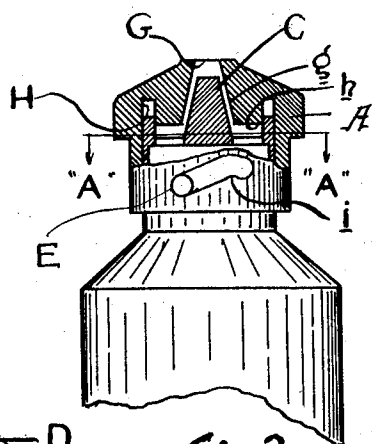


Fig. 2

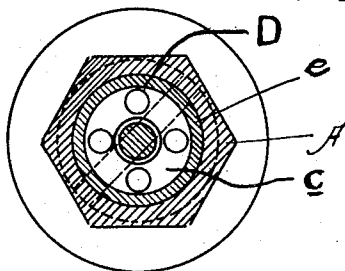


Fig. 4

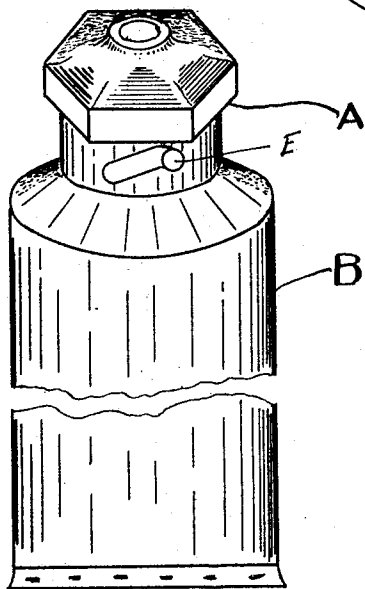


Fig. 3

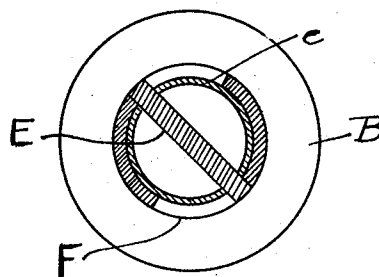


Fig. 5

Inventor
August F. Kroen,
By *Thos. Anderson*
Attorney

UNITED STATES PATENT OFFICE

AUGUST F. KROEN, OF BEAVER FALLS, PENNSYLVANIA

CLOSURE FOR CONTAINERS

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This invention relates to closures for containers of materials which are to be dispensed therefrom and more particularly to closures or caps of containers for medicinal and proprietary preparations such as tooth paste, shaving creams and the like, and it will be understood from the disclosure that the invention is susceptible of a wide range of uses which need not be specified.

It is an object of this invention to provide a closure capable of being attached to the neck of a container such as collapsible tubes in which such commodities are usually distributed and preferably the closure is constructed by using rubber, as rubber having certain characteristics is sufficiently resistant to deterioration and wear as to possess the necessary endurance incident to its use.

It is a further object of this invention to provide closures of the character indicated which can be expeditiously applied to the necks of closures of the character indicated and the said device will be operable to prevent leakage of the contents of the container when it is closed, although parts of the closure may be manipulated to provide for the discharge of the contents of the container and then readjusted to the aforesaid position to prevent such discharge and furthermore the invention has for its object the provision of means whereby material which is in the orifices or discharge channels will be forced back into the container and the exit opening so sealed as to prevent further discharge until the device is again manipulated.

It is furthermore an object of the invention to provide novel means to guard against the escape of the material issuing from the container except through the channels prepared for the dispensing of the contents of the container.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawing forming part of this application where-

in like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a view in elevation of a fragment of a container showing the closure, partly in section, applied thereto;

Figure 2 illustrates a view similar to that of Figure 1 with the parts adjusted to permit the discharge of the contents of the container;

Figure 3 illustrates a perspective view of the container and closure;

Figure 4 illustrates a sectional view on the line A—A of Figure 2; and

Figure 5 illustrates a sectional view on the line B—B of Figure 1.

In the present embodiment of the invention, a closure A is applied to a container B which is illustrated as of the collapsible tube type. A cone-like plug C is preferably formed integral with a horizontal partition or wall *c* having discharge apertures D.

A pin E extends through the annular neck *e* of the container and it projects beyond the outer surface of the neck and enters a slot F formed in the skirt or tubular portion *f* of the closure A, it being shown that the closure A has an aperture G into which the cone-like plug projects.

The closure has an annular channel H into which the upper end of the neck projects, it being shown that the said upper end of the neck fits snugly in the annular channel and the relation of parts is such that material issuing from the container can not pass between the wall of the annular channel and the sides of the upper end of the neck which project into the said channel. It is also shown that the discharge opening G in the closure has walls *g* which diverge toward the bottom so that the discharge opening is larger at the lower end than it is at the upper end. It is also shown that the cone-like plug C is tapered and it is the purpose of the inventor that the contacting surfaces of the closure and plug shall be such that it will result in a tight joint between them when the cap is closed so as to prevent discharge of the contents of the container. Furthermore, the cap has an annular shoulder *h* and the relation of parts is preferably such that when the

cap is closed in the manner just stated, the shoulder *h* will contact the partition *c* and this will act as a further safeguard against the escape of the contents of the receptacle or container, and, furthermore, as the cap is moved to effect the seating action to which reference has been made, any material that has passed through the apertures *D* and remains below the shoulder *h* will be forced back into the container as the cap is seated.

The slot *F* is shown as having camming edges which engage the pin *E* so that as the cap is turned in alternate directions, the said cap will be moved longitudinally of the neck to effect the opening and closing of the discharge openings as heretofore described. The slot terminates in the portion which extends approximately horizontally although there is sufficient divergence from the horizontal at the location identified by the reference character *i* to cause the pin to be seated in a manner which will prevent accidental dislodgment of the pin from that portion of the slot, and therefore the cap will not accidentally open under ordinary conditions.

I claim:

1. In a closure for containers, a container having an annular neck, a closure having a tubular portion fitting on the neck, the said closure having an annular channel into which the upper end of the neck projects, a horizontally disposed partition having apertures below the upper end of the neck, the said closure having an opening for the escape of the contents of the container, a cone-like plug on the partition extending into the aperture of the closure, the diameter of the plug being greater than the diameter of the opening whereby when the closure is moved downwardly the wall of the opening engages the plug for closing the opening, a shoulder on the plug embraced by the annular channel adapted to engage the partition and close the openings therethrough, and means for communicating reciprocatory motion to the closure during its rotation.

2. In a closure for containers, a container having an annular neck, a closure having a tubular portion fitting on the neck, the said closure having an annular channel into which the upper end of the neck projects, a horizontally disposed partition having apertures below the upper end of the neck, the said closure having an opening for the escape of the contents of the container, a cone-like plug on the partition extending into the aperture of the closure, the diameter of the plug being greater than the diameter of the opening whereby when the closure is moved downwardly the wall of the opening engages the plug for closing the opening, a shoulder on the plug embraced by the annular channel adapted to engage the partition and close the openings therethrough, a pin extending through the neck and projecting externally

thereof, the tubular portion of the closure having a camming slot to receive the pin, said camming slot having an approximately horizontal portion on which the pin is seated for holding the parts in adjusted position.

3. In a closure for containers, a container having an annular neck, a horizontally disposed partition having apertures in the neck, a cone-like plug extending upwardly from the partition between the apertures, a closure having an aperture to receive the plug, the relation of parts being such that the plug closes the lower part of the aperture when the cap is closed, the said closure having an annular channel in spaced relation to the aperture into which the upper end of the neck is fitted, a shoulder formed on the closure between the annular channel and the aperture and operative to force material through the apertures of the partition as it moves inwardly and to seat on the said partition to close the said openings, and means for causing movement of the closure axially of the neck during its rotation.

4. In a closure for containers, a container having a neck, a pin extending through the neck and projecting externally thereof, a closure having a tubular portion embracing the neck and having camming slots into which the end of the pin projects, said closure having an annular channel to receive the upper end of the neck, said closure having an aperture for the escape of material, and a plug in the said neck projecting into the aperture and operative to close the aperture when the parts are in a predetermined position of adjustment.

AUGUST F. KROEN.