April 19, 1932. C. S. JONES 1,854,472

PASTE DISPENSER

Filed Dec. 4, 1930

Fig. 1.

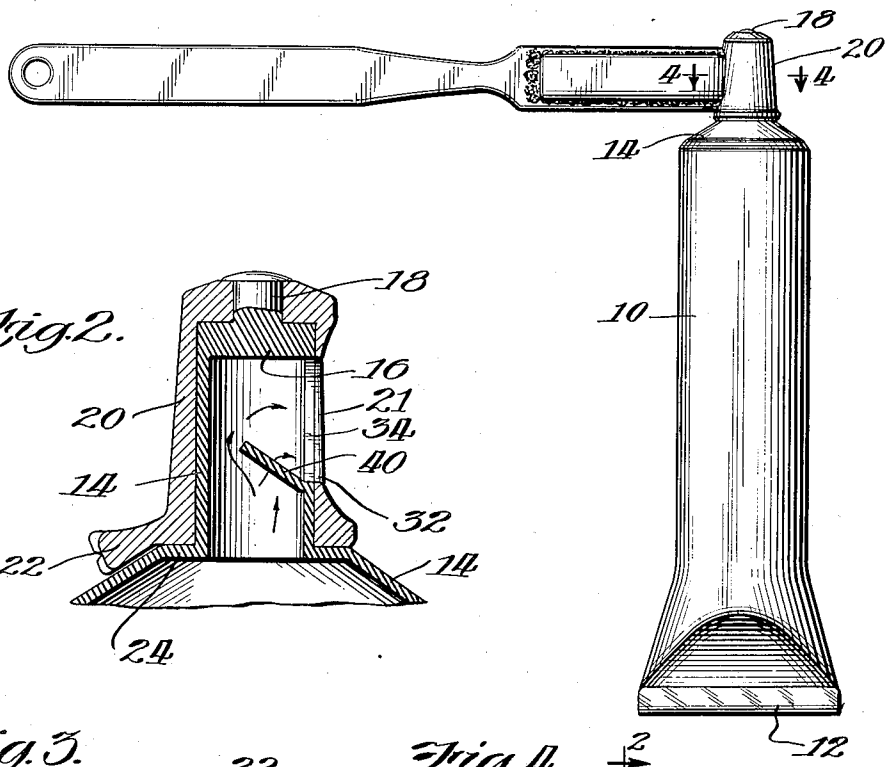


Fig. 2.

Fig. 3.

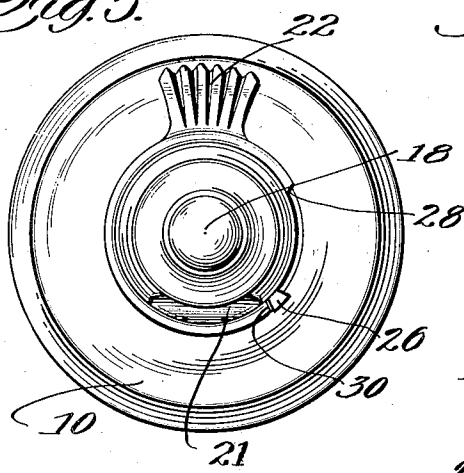
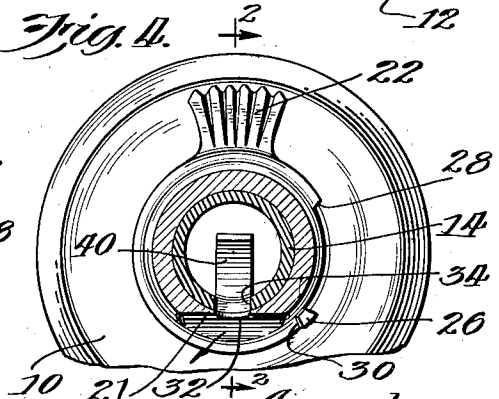


Fig. 4.



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UNITED STATES PATENT OFFICE

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PASTE DISPENSER

Application filed December 4, 1930. Serial No. 499,887.

My invention relates to paste dispensers and more particularly to collapsible containers for materials of a soft, plastic consistency, such as tooth-paste, salves, cold creams, shaving cream and the like.

Commercial products of this type are at present placed on the market in collapsible containers having closure members at their discharge end made in a number of different ways. The most common form of closure utilizes a detachable cap which screw-threadedly engages a threaded neck at the end of the container, the composition being extruded through an opening in the neck.

One of the principal objections to this form of collapsible container lies in the fact that a screw cap is inconvenient to manipulate, usually requiring both hands of the operator, the threads are liable to be stripped from ordinary usage, and the cap is liable to be lost.

Other containers are provided with a non-detachable cap rotatably mounted on the neck. The neck is provided with a lateral opening which is elongated in the longitudinal direction, and the cap is provided with a corresponding opening adapted to be brought into register with the opening in the neck by rotating the cap.

One of the principal objections to the form of container last above mentioned lies in the fact that tooth-paste, for example, when extruded from a container of this type, has a tendency to curl as it is pressed out of the longitudinal slot due to the unequal pressure between the lower end of the slot and the upper end. In other words, when pressure is applied to press the plastic composition out of the slot, the pressure is partly relieved at the inner end of the slot and a lesser pressure is effective at the upper end of the slot. The result is that the composition is extruded in the form of a ribbon which curves away from the body of the container and cannot be conveniently applied to a tooth brush or the like.

The principal object of my invention is the provision of an improved collapsible container having means associated with the opening ensuring the extrusion of a straight ribbon.

A further object is to provide an improved non-detachable cap for a container of this type.

Other objects and advantages of my invention will be more apparent from the following description and the accompanying sheet of drawings, in which:

Fig. 1 is a plan view showing the improved collapsible container in operative position applying a flat strip of tooth paste upon a tooth brush;

Fig. 2 is an enlarged vertical section through the neck portion of a container taken on the line 2—2 of Fig. 4;

Fig. 3 is an enlarged plan view of the container; and

Fig. 4 is a horizontal sectional view taken on the lines 4—4 of Fig. 1.

Referring to the drawings, I have provided a container 10 preferably formed of soft thin metal such as an alloy of tin and lead or the like having its lower end closed by the sealing member 12 and having a stouter rigid shoulder portion 14′ formed from the same metal.

The shoulder portion 14′ carries integrally a neck 14, which may be cylindrical in shape, having its upper end 16 formed of stouter material. An upright pin 18 upon which a cap 20 is rotatably mounted is carried by the end 16.

The cap 20 encloses the neck 14, and rests upon a shoulder 24 formed between the shoulder portion 14′ and the neck 14 of the container. At its lower end the cap 20 is provided with a handle 22 whereby it may be rotated. The lower edge of the cap 20 is cut away to provide abutments 28 and 30 which are adapted to engage a stop 26 carried by the shoulder 24, and arrest the cap in its open and closed position. The abutments 28 and 30 are preferably arranged so that the cap 20 may be rotated through approximately 45°. The cap is provided with a longitudinal opening 32 in the lateral wall thereof which may be brought into register with a similar opening 34 in the neck 14. Thus, by rotating the cap through the movement allowed by stop 26, the opening 34 in the neck may either be exposed or covered. The side of the cap in which the opening 32 is located is cut away as shown

at 21 so that the bristles of a tooth brush or the like may be brought into close proximity to the opening 34. This construction provides a relatively thin cutting edge adjacent the opening to cut off the ribbon with a minimum of waste.

With the construction as I have thus far described it, paste would be extruded through the longitudinal openings 34 and 32 in a flat ribbon-like condition. However, for the reasons previously expressed the ribbon would be curved in form. To overcome this objectionable action, I provide means to impede the flow of paste to the high pressure side of the opening 34, that is the side of this opening nearest the source of supply, which as shown in the drawings, may be a collapsible metal tube. For this purpose I prefer to use a lip 40 which extends obliquely from below the opening 34 into the head and towards the outer end thereof. The shape, position and length of the lip 40 may be modified in various ways to attain the desired result. In practice, I have obtained excellent results with a lip 40 of the same width and about two thirds as long as the opening 34, extending from the inner end of the opening, inwardly and towards the outer end of the head, at an angle of about 45°.

The lip 40 appears to possess two principal functions. It impedes the flow of paste to the lower or inner end of the opening 34 and it diverts paste under high pressure up to the outer end of the slot. Thus the outer portion of the extruded ribbon is accelerated while the inner portion of the ribbon is decelerated. By proper construction or adjustment of the lip 40 the discharge outlet may be caused to extrude a straight ribbon.

It will be understood that while I have illustrated and described my invention in connection with a collapsible tube, I do not intend to be limited thereto, since the invention may be employed in connection with discharge outlets in other devices for dispensing pastes and the like.

Although the invention has been described in connection with the specific details of a preferred embodiment thereof, it must be understood that such details are not to be regarded as limitative of the invention except insofar as set forth in the accompanying claims.

Having thus described the nature of my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. A paste dispenser comprising a tubular portion, means for supplying paste under pressure thereinto, said tubular portion being provided with an opening, and means in the form of an inwardly projecting baffle for impeding the flow of paste to the portion of the opening adjacent the source of supply.

2. A paste dispenser comprising a tubular portion, means for supplying paste under pressure thereinto, said tubular portion being provided with an opening, and a substantially rigid baffle impeding the flow of paste to the end of the opening near the source of supply.

3. A paste dispenser comprising a tubular portion, means for supplying paste under pressure thereinto, said tubular portion being provided with an opening, and a baffle extending from the side of the opening nearer the source of supply obliquely into the tubular portion and in the direction of flow to impede the flow through the portion of the opening adjacent said side and increasing the flow through the other end of the opening whereby the paste is extruded in the form of a straight ribbon.

4. A collapsible container having a neck closed at the top and provided with a discharge opening in the side communicating with the interior, an inwardly projecting lip secured to the neck adjacent the lower end of said opening, and a closure cap comprising a sleeve rotatably secured on said neck and having an opening adapted to register with said discharge opening.

5. A collapsible container having a neck closed at the top and provided with a longitudinal discharge opening in the side thereof communicating with the interior, an inwardly and upwardly disposed lip secured to the neck adjacent the lower end of said opening, and a closure cap rotatable upon said neck and provided with an opening adapted to register with said discharge opening.

6. A collapsible container having a neck closed at the top and provided with a longitudinal discharge opening in the side thereof, a pin projecting from the top of said neck, an inwardly projecting lip secured adjacent the lower end of said discharge opening, a closure cap for said neck rotatably secured upon said pin and enclosing said neck, and a handle for rotating said closure cap.

7. A collapsible container having a neck closed at the top and provided with a longitudinal discharge opening in the side thereof, and an inwardly and upwardly disposed lip secured adjacent the lower end of said opening, said lip being disposed to relieve the pressure on the plastic material extruding through the inner end of the discharge opening and equalizing said pressure with that at the outer end of the opening to allow the material to flow outwardly without curling.

8. A container of the type described having a cylindrical neck having its outer end closed, a sleeve-like cap positioned over said neck and rotatably pivoted on the outer end thereof, said neck and said cap having longitudinal openings in their side walls, and a lip in said neck for reducing the pressure at the inner end of the opening in the neck.

9. A collapsible container having a cylindrical neck closed at its upper end, said neck

communicating with the interior of said container and having a discharge opening in a side wall, a projection extending inwardly from the inner edge of said opening for retarding the flow of plastic material in said container sufficiently to allow said material to flow from the entire length of said opening at an equal speed.

In witness whereof, I hereunto subscribe my name this 1st day of December, 1930.

C. SEYMOUR JONES.