Nov. 13, 1934. T. N. COFFELDER 1,980,473

DISPENSING DEVICE FOR PASTE OR THE LIKE

Filed Aug. 8, 1931

Fig. 1.

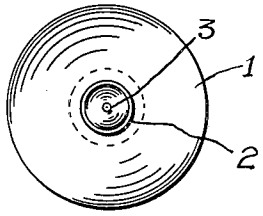


Fig. 2.

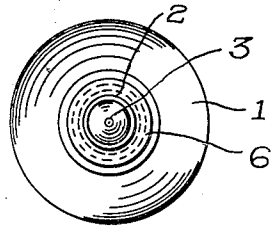


Fig. 3.

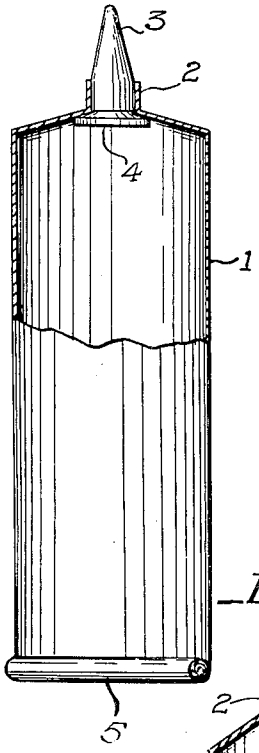


Fig. 4.

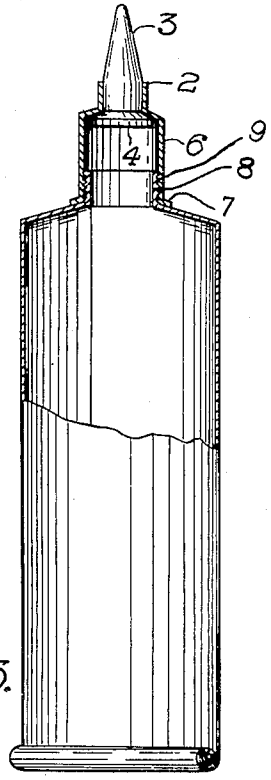
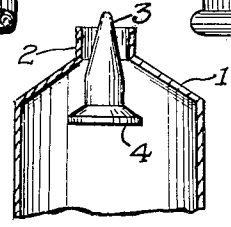


Fig. 5.



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DISPENSING DEVICE FOR PASTE OR THE LIKE

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Application August 8, 1931, Serial No. 555,875

1 Claim. (Cl. 221—60)

This invention relates to improvements in dispensing nozzles for tooth-paste or the like contained in soft pliable tubing and it is among the objects thereof to provide a nozzle valve element which shall automatically seal the contents of the tube in response to the internal pressure of the tube; and which shall be readily displaceable for the purpose of dispensing the contents of the tube.

The invention is particularly applicable for use in sealing the nozzle of tubes containing toothpaste or the like although it is of course applicable to a great many uses where a viscous substance such as grease, medicated salve, and the like is dispensed.

The invention will become more apparent from a consideration of the accompanying drawing constituting a part hereof in which like reference characters designate like parts and in which:

Figure 1 is an end elevational view of a paste dispensing tube embodying the principles of this invention;

Figure 2 is a similar view of a modified form thereof;

Figure 3 a sectional elevational view of the structure shown in Figure 1;

Figure 4 a sectional elevation illustrating the employment of the improved sealing and dispensing means on tubes of standard construction by means of an adaptor; and,

Figure 5 a detail view showing the sealing valve in its open position.

With reference to Figures 1 and 3 of the drawing the structure therein illustrated comprises a hollow tube 1 manufactured of pliable metal such as heavy tin or aluminum foil or a lead body as the case may be, constituting a container for toothpaste or the like which is adapted to be dispensed at the nozzle end 2.

The nozzle is in the form of a projection having a cylindrical opening communicating with the interior of the container 1 and in which is disposed a sealing valve 3.

The valve is of substantially the same dimension as the opening of the projection 2 for a portion of its length and is provided with a peripheral flange 4 at the bottom which is preferably complementary in shape with the end wall of the container. The straight portion and flange effectively seal the contents of the tube from the atmosphere. If for any reason the flange 4 did not seat, the cylindrical portion alone would seal as it intimately engages the inner wall of the nozzle opening. The end portion of the valve is of conical form but may be of any shape so long as the end portion of the valve is constricted, that is to say, of lesser diameter than the straight portion disposed in the nozzle member.

Containers of the type to which this invention is particularly applicable are usually filled from the bottom end 5 and the end is fastened or sealed. By disposing the valve member 3 in the nozzle before the container is filled it will normally seat against the end wall of the tube in the manner shown in Figure 3 of the drawing and the contents of the container 1 will hold it in this position. Since the pressure of the contents tends to force the valve 3 against its seat, it is apparent that no internal pressure would act to cause any leakage of the contents to the nozzle.

When it is desired to dispense the paste from the container, the valve 3 is depressed until the constricted portion is below the neck of the end wall in the manner shown in Figure 5 of the drawing, thus permitting the escape of the paste through the nozzle for use.

When the end pressure on the valve 3 is released it will of itself rise against its seat 2 in response to the pressure of the paste acting against the large surface area of the flange element 4 thus again sealing the contents from the atmosphere. The volume of paste being dispensed is regulated by the area of opening created by the tapered portion 3 of the valve and the further the valve is pushed into the tube the greater will be the volume of paste passing from the nozzle.

In the modification shown in Figure 4 of the drawing, the invention is applied to a standard form of tube by means of an adaptor 6 which is a sleeve having a nozzle 2 at one end and a seating flange 7 at the bottom. The adapter is applied to the screw thread 8 of a standard tube by its interior threaded portion 9 which interacts with the thread 8 of the tube to firmly secure the adaptor to the end thereof. The plug valve 3 is of the same construction as the valve employed in the structure of Figure 3 and functions in precisely the same manner as hereinbefore specified.

Although the valve element has been illustrated of a particular shape and size it will be obvious that various modifications are possible within the scope of the invention so long as it acts in response to the internal pressure of the container to effect the seal at the nozzle end.

I claim:

In a container for dispensing paste or the like a combined dispensing and sealing means comprising an adaptor having a screw thread for

engagement with the threaded portion of the nozzle end, and having a cylindrical nozzle at one end and a valve disposed in said nozzle, said valve having a cylindrical body portion intimately engaging the inner wall of the nozzle and having a flange contiguous with said cylindrical body portion which, together with the cylindrical portion, constitutes the seal for protecting the contents of the tube against the atmosphere, and said valve being further provided with a tapered portion of substantial length which is adapted to project outwardly of the dispensing nozzle and which, when depressed, provides a dispensing opening of regulable area.

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