

Dec. 11, 1951

J. W. GUNNARSON
DISPENSING CASING FOR COLLAPSIBLE TUBE, WITH
ROLLER-TYPE SQUEEZER FOR SAID TUBE

2,578,472

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2 SHEETS—SHEET 1

Fig. 1.

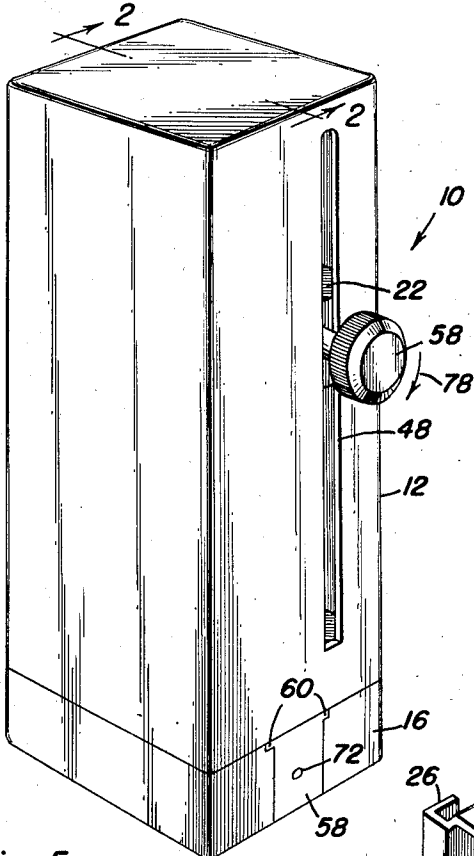


Fig. 4.

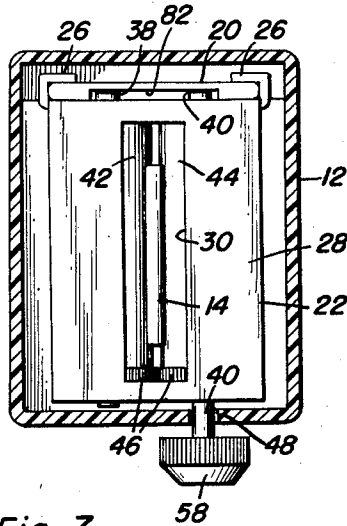


Fig. 7.

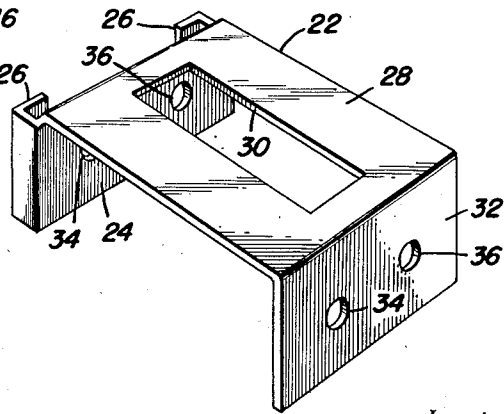
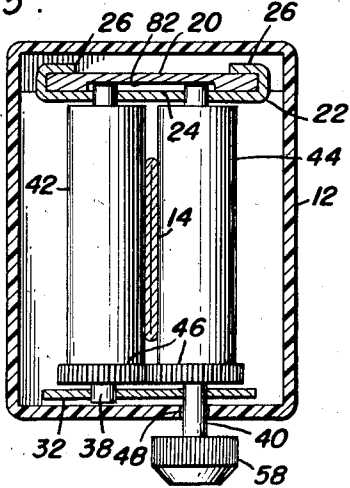


Fig. 5.



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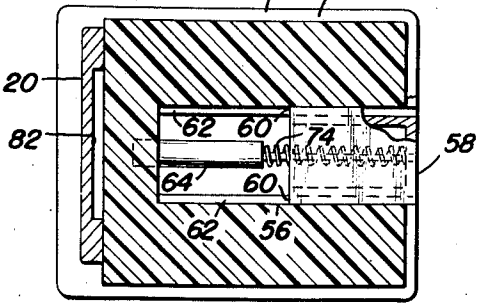
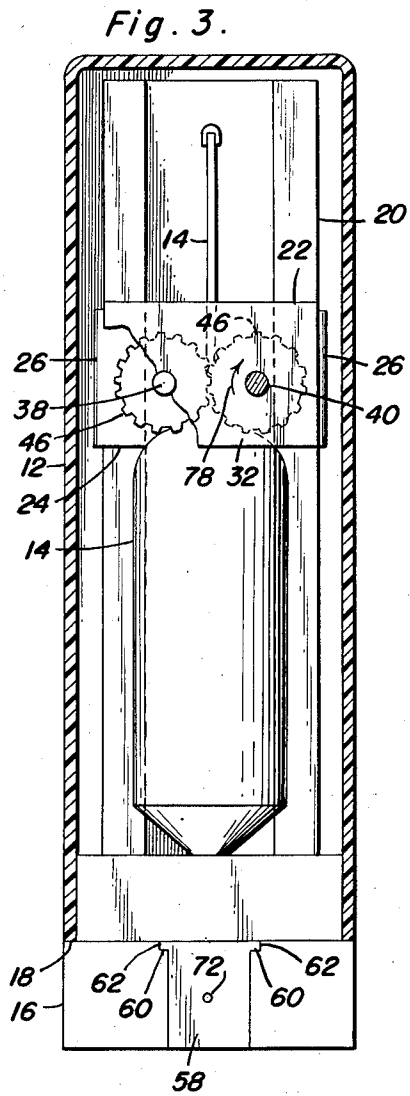
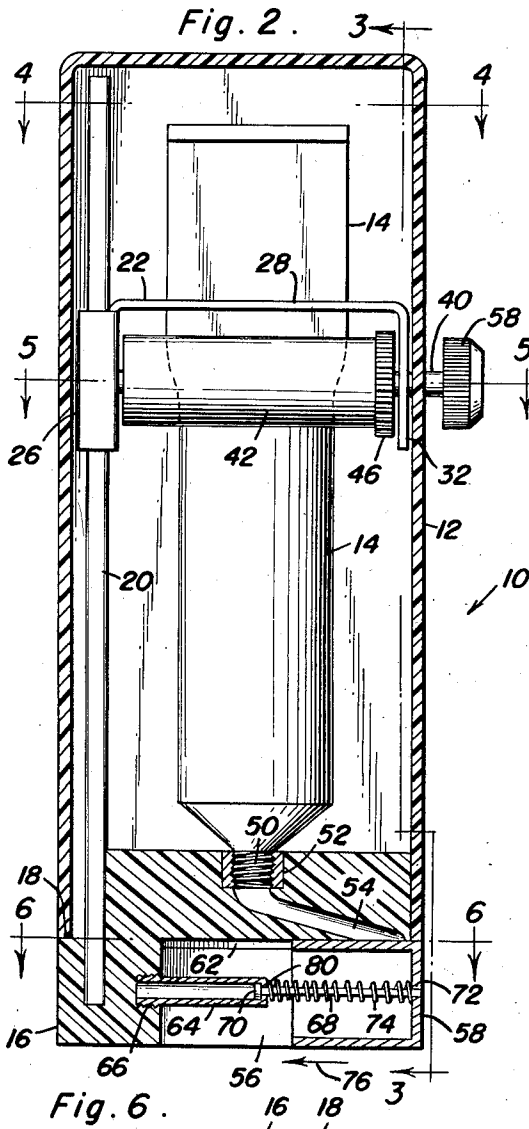
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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE

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DISPENSING CASING FOR COLLAPSIBLE TUBE, WITH ROLLER-TYPE SQUEEZER FOR SAID TUBE

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1 Claim. (Cl. 222-102)

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This invention relates to new and useful improvements and structural refinements in dispensers for collapsible tubes, the invention particularly concerning itself with the dispensing of tooth paste, and the principal object of the invention is to facilitate convenient and expeditious dispensing of tooth paste directly on a tooth brush.

This object is achieved by the provision of a dispenser including a housing adapted to receive therein a collapsible tube of tooth paste, together with means provided in the housing for collapsing the tube for the purpose of ejecting the contents thereof.

An important feature of the invention resides in the provision of means in the dispenser for receiving a tooth brush so that the tooth paste may be deposited directly thereon, and another feature involves the provision of a closure for the outlet or discharge passage of the dispenser, which closure is automatically opened and closed by the respective insertion and removal of the tooth brush in and from the dispenser.

Some of the advantages of the invention reside in its simplicity of construction, in its convenient adaptability to replacement of the collapsible tube when the contents thereof are exhausted, in its pleasing appearance, and in its adaptability to economical manufacture.

With the above more important objects and features in view and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of the invention;

Figure 2 is a vertical cross sectional view thereof, this being taken substantially in the plane of the line 2-2 in Figure 1;

Figure 3 is a cross sectional view, taken substantially in the plane of the line 3-3 in Figure 2;

Figure 4 is a cross sectional view, taken substantially in the plane of the line 4-4 in Figure 2;

Figure 5 is a cross sectional view, taken substantially in the plane of the line 5-5 in Figure 2;

Figure 6 is a cross sectional view, taken substantially in the plane of the line 6-6 in Figure 2; and

Figure 7 is a perspective view of the traveler used in the invention.

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Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of a dispenser for collapsible tubes, the same being designated generally by the reference character 10 and embodying in its construction a vertically elongated housing 12 which has an open bottom and is adapted to receive therein a collapsible tube 14 in an inverted position, as illustrated in Figures 2 and 3.

A block-shaped bottom member 16 is provided intermediate the height thereof with a perimetric step 18 so that it may be removably inserted in the open bottom of the housing 12, and any suitable conventional means may be employed for retaining the bottom member 16 in position.

A vertical guide 20 has the lower end portion thereof suitably secured in the bottom member 16 and extends upwardly into the housing 12, and what may be referred to as a traveler 22 is slidable vertically on the guide 20, as will be presently described.

The traveler 22 is substantially U-shaped, as is best shown in Figure 7, and one side portion 24 thereof is provided with a pair of intumed ears 26 which slidably engage longitudinal side edge portions of the guide 20, as indicated in Figures 4 and 5. The intermediate portion 28 of the traveler 22 is formed with an elongated slot or opening at 30 through which the tube 14 may freely project, and it is to be noted that the remaining side portion 32 as well as the side portion 24 of the traveler 22 are provided with a set of axially aligned apertures 34, 36 to rotatably receive a pair of shafts 38, 40 respectively. These shafts are disposed in spaced parallel relation and are provided with the respective rollers 42, 44 which, in turn, are adapted to engage the relatively opposite sides of the tube 14 for the purpose of squeezing or collapsing the tube, as will be clearly apparent. The shafts 38, 40 together with the rollers 42, 44 are simultaneously rotatable, this being effected by providing the shafts with a pair of meshing gears 46, as shown.

The entire traveler 22, together with the shafts 38, 40 and rollers 42, 44 is disposed in the housing 12, with exception of the shaft 40, one end portion of which projects outwardly from the housing through a vertical slot 48 with which the housing is provided, as is best shown in Figure 1.

The customary screw threaded outlet neck 50 with which the collapsible tube 14 is usually equipped is threaded into a bushing 52 provided

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in the aforementioned bottom member 16 of the housing 12 (see Figure 2) and it is to be also noted that the bottom member 16 is formed with a discharge passage 54 which communicates with the front portion of a substantially horizontal channel 56 provided in the member 16, as indicated in Figures 2 and 6. It will be apparent from the foregoing that when the shaft 40 is rotated by means of an actuating knob 58, affixed to the outwardly projecting portion of the shaft 40, the rotating rollers 42, 44 will collapse the tube 14 and will travel downwardly thereon, thus ejecting the contents of the tube through the passage 54 into the channel 56.

However, means are provided for closing the outlet of the passage 54 when the contents of the tube 14 are not being dispensed, these means consisting of a closure member 58 which is slidable in the channel 56, being provided at the upper longitudinal edges thereof with laterally projecting guides 60 which are slidable in longitudinal grooves 62 formed in the upper portion of the channel 56, as is best illustrated in Figures 3 and 6.

The closure member 58 is slidable forwardly and rearwardly in the channel 56, and when it is in its forwardly slid position, it covers the outlet of the discharge passage 54, as shown in Figure 2. Resilient means are provided for urging the closure member 58 to this forwardly slid position, these means consisting of a tubular guide 64 which is screw-threaded as at 66 into the bottom member 16 and extends into the channel 56, while a rod 68, equipped with a plunger 70, is slidable in the guide 64 and is secured to the closure member 58, as at 72.

A compression spring 74 is positioned on the rod 68 between the guide 64 and the closure member 58, whereby the latter is urged to its forwardly slid position, as will be clearly understood.

However, when the invention is placed in use, a tooth brush may be pressed against the closure member 58, to slide the latter rearwardly in the direction of the arrow at 76 (see Figure 2), thus uncovering the outlet of the discharge passage 54. Thereupon, while the brush is held in position in the channel 56, the knob 58 may be rotated as at 78, so that a portion of the contents of the tube 14 is ejected or discharged on the brush. After the brush is withdrawn from the channel 56, the spring 74 will automatically return the closure member 58 to its closed position, thus protecting the contents of the tube 14 from harmful effect of the atmosphere.

It is to be noted that an end portion of the tubular guide 64 is provided with an intumed flange 80 which is engageable by the plunger 70 and thereby functions as a stop for preventing the closure member 58 from traveling too far in the outward direction. Moreover, it is to be noted that the front surface of the afore-

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mentioned guide 20 may be provided with a vertical channel or groove 82 to provide sufficient clearance for end portions of the aforementioned shaft 32, 40 as indicated in Figures 4 and 5.

It is believed that the advantages and use of the invention will be clearly apparent from the foregoing disclosure and accordingly, further description thereof at this point is deemed unnecessary.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

Having described the invention, what is claimed as new is:

In a dispenser for collapsible tubes, the combination of a vertically elongated housing adapted to receive an inverted collapsible tube therein and including a back wall and a front wall provided with a vertical slot, a vertical guide strap positioned in said housing and spaced forwardly from said back wall, an inverted U-shaped flat plate carrier movable upwardly and downwardly in said housing and consisting of a flat horizontal bight portion and front and rear flanges depending therefrom, said bight portion being provided with an opening whereby to pass downwardly over a collapsed tube, a pair of rearwardly and inwardly extending ears provided at the opposite side edges of the rear flange forming inwardly facing channels and slidable on respective opposite side edges of said guide strap, a pair of spaced parallel shafts rotatably journaled in said front and rear flanges, a pair of tube engaging rollers provided on the respective shafts between said flanges, a pair of meshing gears secured to the respective shafts at one end of said rollers whereby rotation of one is transmitted to the other, one of said shafts projecting forwardly and outwardly from said front wall through said slot, and an actuating knob secured to the projecting shaft portion.

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