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DISPENSING DEVICE FOR TUBULAR CONTAINERS

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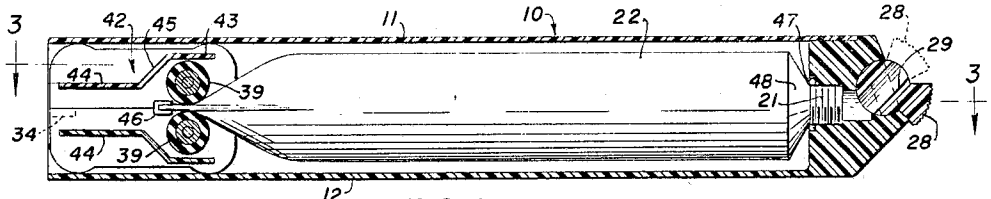


FIG. 1.

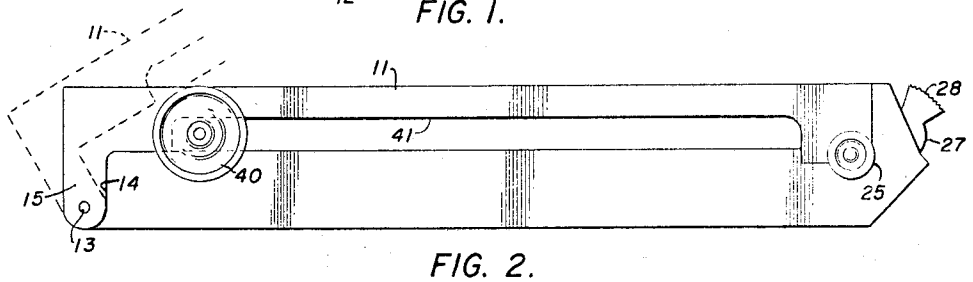


FIG. 2.

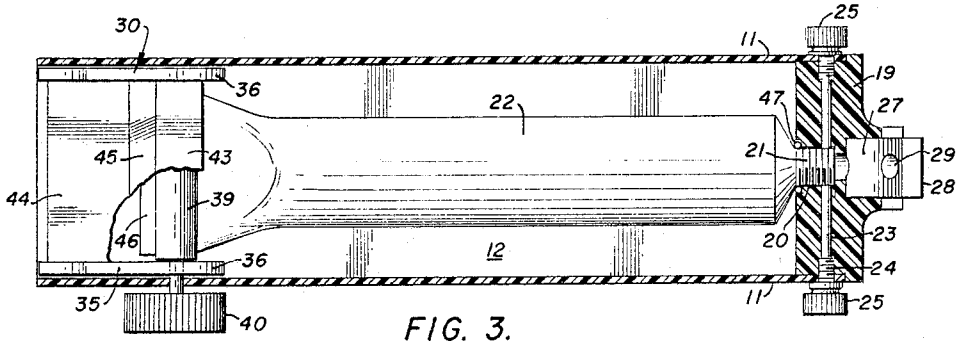


FIG. 3.

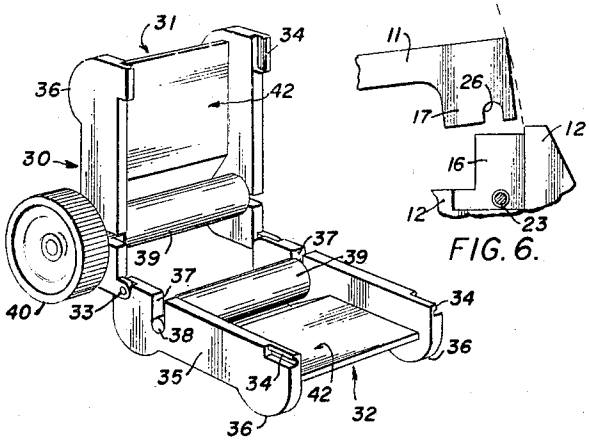


FIG. 5.

FIG. 6.

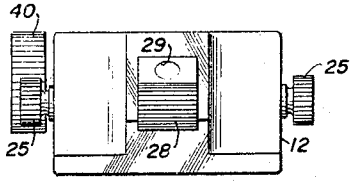


FIG. 4.

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DISPENSING DEVICE FOR TUBULAR CONTAINERS

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2 Claims. (Cl. 222—102)

This invention relates to devices for dispensing the contents of collapsible tubular containers, for example, those containing tooth paste, shaving cream and the like.

An object of the invention is to provide a dispensing device including a case of pleasing design which may be installed at a convenient location, such as on a bathroom wall near a lavatory.

A particular object of the invention is to provide a dispenser construction for a collapsible tube wherein the crimped transverse closure at the end of the container is readily accommodate between squeezing rollers, yet provides a constant distance between the rollers during the squeezing operation.

Another object of the invention is to provide a dispenser which conveniently receives the tube, and wherein the dispensing action of the device maintains the tube in proper alignment throughout its operation.

A further object is to provide a convenient dispensing spout and closure which takes the place of the usual screw cap which comes on the tube.

These and other objects of the invention will become apparent from the following description and the accompanying drawing, wherein:

FIGURE 1 is a longitudinal center sectional view of a dispensing device according to the invention and showing a collapsible tube therein in position to be acted upon.

FIGURE 2 is a side elevational view of the device illustrated in FIGURE 1, but showing the dispensing spout in its closed position.

FIGURE 3 is a broken section and plan view taken approximately along off-set line 3—3 of FIGURE 1.

FIGURE 4 is an end view of FIGURE 2 and showing the spout.

FIGURE 5 is a perspective view of the traveling squeezer in its open position, and

FIGURE 6 is a fragmentary elevational view similar to the right hand portion of FIGURE 2, but showing the cover in a partially raised position.

The case **10**, which is rectangular, includes upper and lower portions **11** and **12**, corresponding sides and ends of which are pivotally connected by aligned pins **13**. As best shown in FIGURE 2 the sides of the lower portion **12** are recessed at **14** to accommodate lateral arms **15** integral with the sides of the upper portion **11** for making the pivotal connection. Similarly, there are recesses **16** in the sides of the lower portion **12** near the remaining or forward end of the case **10** to accommodate other lateral arms **17** integral with the top portion **11** as best illustrated in FIGURES 2 and 6. As will become apparent, the last referred to arms **17** have to do with detachably securing the case **10** in its closed position.

The sides of the lower portion **12** are substantially triangular, at **18**, outwardly of the last referred to arms **17** where they receive a conforming solid end member **19**. There is a transverse centrally located opening **20** in the end member **19** for slidably receiving the usual threaded end **21** of a collapsible dispensing tube **22**. Opposite sides of the threaded tube end are engaged by pins **23** having threads **24** near their outer ends and shouldered heads **25** outwardly of the case **10**. As shown in FIGURE 3, the threads **24** engage corresponding threads, not numbered, in the solid end member **19**. The arms **17** are notched at **26** to receive the threads **24** of the pins **23**, and the heads **25** frictionally engage the arms **17** in the recesses **16**.

Within the end member **19** and rotatably mounted therein at the outer end of the opening **20** there is a cylindrical closure **27** having a projection **28** for thumb operation. The axis of the closure **27** is transverse to and above the axial center of the opening **20**; thus, an opening **29** through the closure **27** may be rotated to register with the first opening **20** for dispensing the contents of the tube **22**.

A traveling squeezer **30** is designed for operation within the case **10** and includes substantially identical first and second halves **31** and **32** which are hinged at one end by pins **33**. Latches comprised of interfitting ribs **34** are provided in the ends of the squeezer sides **35** of the squeezer **30** opposite the hinge pins **33** and are disengaged by pressure on the sides of one of the halves **32**. All of the sides **35** have arcuate projections **36** on their outer edges near their ends, which projections serve as guides for the squeezer **30** in the case **10**. Opposite sides **35** of both halves **31**, **32** have notches **37** in their inner edges to receive the projecting ends of shafts **38** on which are mounted resilient rollers **39**. Within the spirit of the invention the rollers **39** may be knurled hard material, but resilient material is preferred. One end of one of the shafts **38** projects beyond the case **10** where it is provided with a turning knob **40**. The extending portion of the shaft **38** moves, as will become apparent, in a slot **41** along an inner edge of one of the sides of the first case portion **11**. Corresponding parallel sides **35** of the respective squeezer halves **31**, **32** are secured by spacers **42** therebetween. As best shown in FIGURE 1, the forward portions **43** of the spacers **42** are parallel with each other when the squeezer **30** is closed and which portions are located outwardly of the rollers **39**. There are trailing portions **44** which are also parallel with each other, but are spaced to receive the flattened portion of the collapsible tube **22** as the rollers **39** move therealong. Thus, the trailing portions **44** prevent the tube **22** from curling in the case **10**. The forward portions **43** and the trailing portions **44** are, respectively, connected by angular portions **45**.

Any suitable material may be used for making the described construction, but synthetic resin is preferred for all parts except the shafts **38** and rollers **39**, which are preferably of metal and rubber, respectively.

In operation the case is opened by loosening the pin heads **25**. The traveling squeezer **30** is then opened and the crimped closure **46** is inserted between and through the pair of rollers **39**. Threaded end **21** of the collapsible tube **22** is then inserted in the opening **20** in the end member **19** of the case **10**. A washer **47** in a groove, not numbered, around the inner end of the opening **20** bears against the adjacent tapered portion **47** of the tube **22**. The traveling squeezer is then closed, and so is the hinged case **10**, after which the pins **23** are lightened, causing the same to engage the threaded end **21** of the tube **22** and to cause the heads **25** to engage the sides of the hinged case member **11**. The closure **27** is rotated to a position to cause the opening **29** thereof to register with the opening **20** in the end member **19**. At will, the knob **40** is rotated in a direction to move the rollers **39** along the tube **22** to dispense its contents. When the device is not in use, the closure **27** is partially rotated to block the opening **20** in the case end member **19**. After the contents of the tube **22** have been dispensed, the knob **40** is rotated in the opposite direction to move the squeezer **30** to its starting position, after which the case **10** and squeezer are opened and the spent tube **22** is removed.

The invention is not limited to the exemplary construction herein shown and described, but may be made in various ways within the scope of the appended claims.

What is claimed is:

1. A dispensing device for a collapsible tube having a threaded dispensing end and a crimped closure on the other end, said device comprising: an elongate case of a size to receive said tube, an end member in said case having an opening therein of a size and location to slidably receive the threaded end of said tube, and a traveling squeezer within said case, said squeezer being comprised of parallel sides and spacers therebetween, parallel shafts journaled in said sides, rollers on said shafts between said sides, a knob outwardly of said case and mounted on a projecting end of one of said shafts and wherein said traveling squeezer is comprised of two portions hingedly

connected at one end and each supporting one of said rollers.

2. The construction defined in claim 1, and wherein said elongate case is separable along the length thereof.

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