United States Patent [19]

White

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[54] **COLLAPSIBLE TUBE DISPENSER**

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[52] **U.S. Cl.** **222/103**
[51] **Int. Cl.²** **B65D 35/28**
[58] **Field of Search** 222/103, 105

[56] **References Cited**

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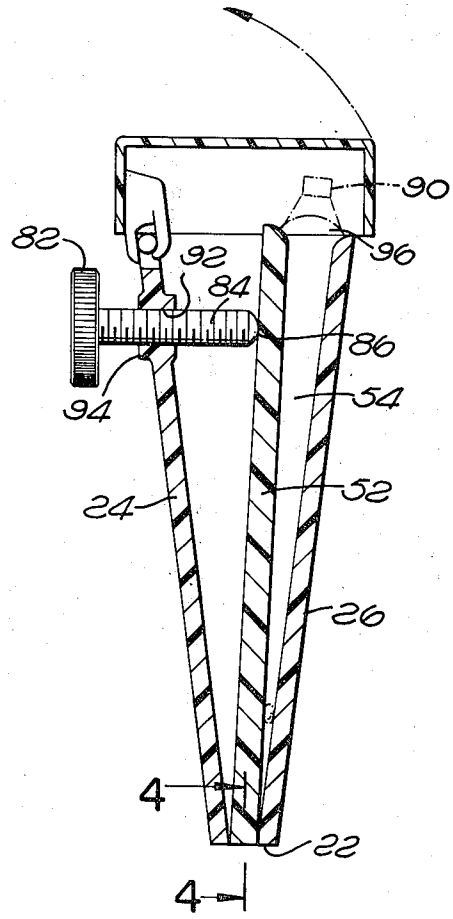
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Attorney, Agent, or Firm—Nilsson, Robbins, Bissell, Dalgarn & Berliner

[57] **ABSTRACT**

A dispenser for toothpaste and like material packaged in a collapsible tube. The dispenser is formed of a generally rigid wedge-shaped housing defined by a pair of side walls which flare apart from a bottom end to a top end. A pressure plate is mounted in the housing, intermediate the side walls with one end of the plate pivotably mounted to the housing adjacent the bottom end, and the other end of the plate being freely positionable at the top of the housing. A threaded member is axially movable in an opening in one of the side walls. Rotation of the threaded member causes the pressure plate to abut the collapsible tube and the material in the tube is dispensed through a top opening in the housing. A hinged cover encloses the top opening in the housing when the dispenser is not in use. A toothpaste holder can be secured to one of the housing walls. The housing can be mounted on a wall or the like by means of a bracket attached to the housing.

1 Claim, 4 Drawing Figures



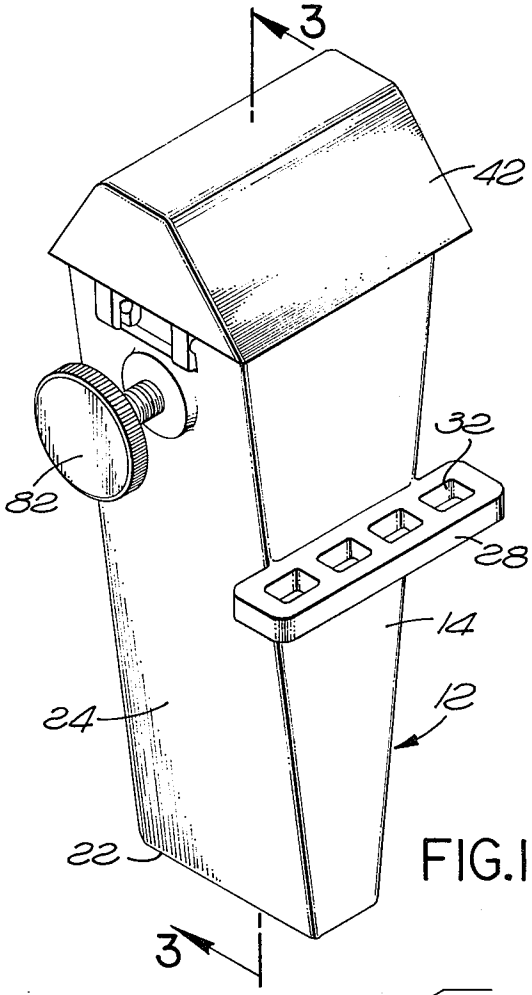


FIG.1.

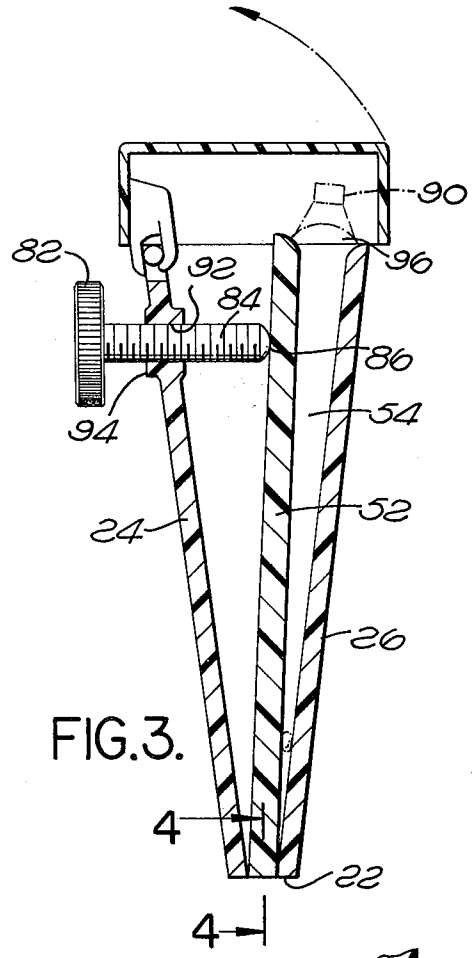


FIG.3.

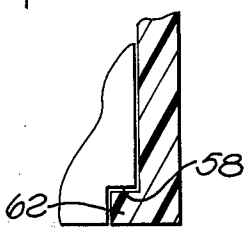
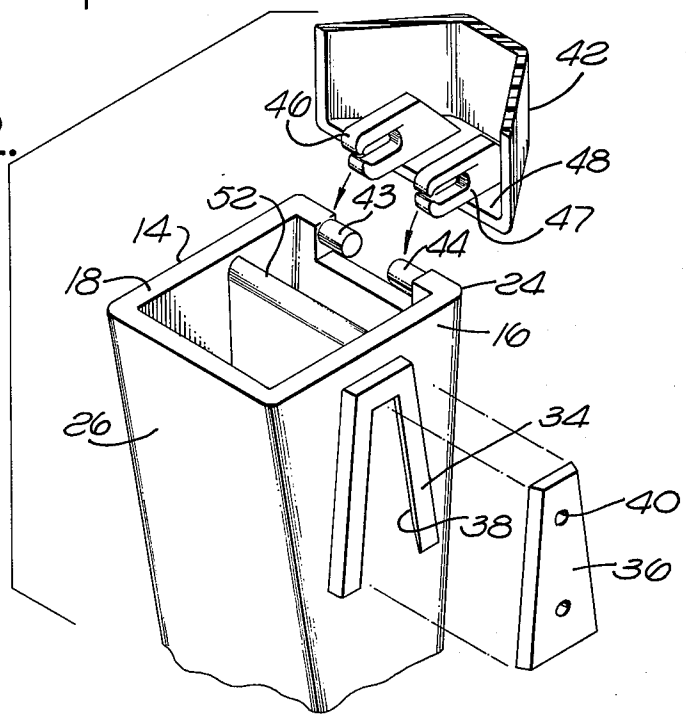


FIG.4.

FIG.2.



COLLAPSIBLE TUBE DISPENSER

FIELD OF THE INVENTION

The field of art to which the invention pertains includes the field of dispensers, particularly with respect to material contained in a collapsible tube.

BACKGROUND AND SUMMARY OF THE INVENTION

The use of dispensers for collapsible tubes has been popularized due to the fact that collapsible tubes, typically toothpaste tubes, fail to readily allow complete use of the packaged product. Furthermore, should the tube be grasped and squeezed from the middle, failure of the tube can occur by bursting.

Simple collapsible tube dispensers utilize squeeze rollers, often become unsightly and are not easily loaded, particularly for use with a new tube. Other devices have been contrived which are relatively complex and do not dispense all of the material in the tube. Prior suggestions include utilization of a complex mechanism, such as a rack and pinion gear for collapsing the tube, rocker-type arrangements, and complex bracket-type arrangements, all of which are generally not aesthetically pleasing. In addition, these dispensers cannot be incorporated in a housing for mounting on a wall. Known prior art includes U.S. Pat. No. **1,320,075; 2,574,797; 2,643,029;** and **3,450,309.**

The present invention overcomes the attendant disadvantages of prior art collapsible tube dispensers and can be housed in an aesthetically pleasing dispenser for mounting on a wall. The present construction permits the incorporation of shelves and the like for mounting accessories, such as toothbrushes thereon. The present invention utilizes a relatively simple mechanical arrangement for uniformly collapsing the tube until the entire contents of the tube has been dispensed.

Particularly, the dispenser comprises a generally wedge-shaped housing member defined by a pair of side walls which flare apart from a bottom end of the housing to the top end thereof. A pressure plate is mounted in the housing, intermediate the side walls. One end of the pressure plate is pivotably mounted to the housing adjacent the housing bottom end, and the other end of the plate is freely positionable at the top end of the housing. A threaded member which extends through an opening in the housing is rotatably moved for adjusting the pressure plate position and for applying uniform pressure to the collapsible tube. As the tube is collapsed, the product in the tube is dispensed through an opening at the top of the housing. A hinged cover encloses the top opening when the dispenser is not in use. A toothpaste holder can be secured to the housing as well. In addition, the entire housing can be easily mounted by a bracket onto a wall.

The advantages of the invention, both as to its construction and mode of operation, will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, in which like reference numerals designate like parts throughout the figures.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of the collapsible tube dispenser;

FIG. **2** is a perspective view of a portion of the tube dispenser illustrating the method of mounting the dispenser on a wall;

FIG. **3** is a sectional view of the dispenser, taken along the line **3—3** of FIG. **1**; and

FIG. **4** is a partial sectional side view of the dispenser taken along the line **4—4** of FIG. **3.**

DETAILED DESCRIPTION

The dispenser, as illustrated in FIG. **1** and **2**, comprises a housing **12** formed of a front wall **14** and a rear wall **16.** The walls **14** and **16** are trapezoidally shaped and taper from a maximum width at the top surface **18** of the housing to a minimum width at the bottom surface **22.** The front wall **14** and the rear wall **16** are interconnected at their edges by means of a first side wall **24** and a second side wall **26,** both of which are rectangularly shaped. The front and rear walls **14** and **16,** together with the side walls **24** and **26** are integrally formed to define a wedge-shaped housing for the dispenser.

A conventional toothbrush holder **28** is integrally formed with the front wall **14** and contains openings **32** for insertion of a toothbrush. The rear wall **16** contains a generally inverted V-shaped bracket **34** which is integrally formed on the exterior wall surface for mounting the housing on a wedge-shaped plate **36.** The bracket **34** defines a tapered opening **38** which enables the wedge-shaped plate **36** to be inserted therein. The plate **36** is normally mounted on a wall by means of screws (not shown) fastened in the plate openings **40.**

A housing cover **42,** which is trapezoidal cross-section, is used to cover the housing top opening when the dispenser is not in use. The cover is pivotably attached to hinge pins **43** and **44** integrally formed at the top end of the first side wall **24** by means of fingers **46** and **47,** respectively, integrally formed on the interior and wall **38** of the housing cover **42.** The housing cover can thus be pivoted from a position as illustrated in FIG. **1** where it covers the opening at the top of the housing **12** to a position where the opening is exposed and toothpaste can be removed therefrom as will be explained hereinafter. Intermediate stops (not shown) can also be provided when desired.

Referring now to FIG. **3,** a pressure plate **52** which is mounted in the housing **12** of FIG. **1** is shown in greater detail. The pressure plate **52** which is used to hold a collapsible tube **54** (shown in dotted lines), and which is to be dispensed from the housing **12,** comprises a generally rectangular plate having a length approximately equal to the height of the housing **12.** The pressure plate is of reduced width adjacent the bottom of the housing defining downwardly facing shoulders **58** as shown in FIG. **4.** The shoulders **58** abut inward extensions **62** formed in the side walls **24** and **26** adjacent the bottom of the housing, thus retaining the pressure plate in the housing.

A dispenser knob **82** is illustrated in FIGS. **1** and **2,** which is formed of a threaded shaft **84** having a first end **86** which terminates in the interior of the housing **12.** The tube **54** is mounted on one side of the plate **52** with its dispensing end **90** extending above the top of the housing side walls **24, 26** and the pressure plate **52.** The shaft first end **86** abuts the opposite side of the plate and the other end of the shaft **84** terminates at the knob **82,** positioned externally of the housing, and which is used to adjustably position the threaded mem-

ber by rotation thereof. The shaft **84** extends through a threaded opening **92** formed in an externally extending protuberance **94** in the side wall **24.**

To insert a collapsible tube, such as a tube of toothpaste into the housing **12,** the knob **82** is rotated so that the first end **86** of the threaded shaft **84** is adjacent the inner surface of the side wall **24.** The pressure plate **52** can be then positioned adjacent the side wall **24** inner surface. The tube **54** is inserted into the housing a sufficient distance until tube shoulder **96** can be positioned between the top of the side wall **26** and the pressure plate **52.** Next, the knob **82** is rotated so that the threaded shaft **84** abuts the pressure plate and the tube is in the position as illustrated in FIG. **3.** At that point, one surface of the tube is adjacent the pressure plate **52** and the other surface is adjacent the inner surface of the side wall **26.** Further rotation of the knob **82** causes the pressure plate to uniformly apply pressure to the collapsible tube with the substance therein being dispensed in a desired manner through the tube end **90.**

The housing **12,** the pressure plate **52,** the plate **36** and the knob **84** and the threaded member **88** can all be formed of individual molded plastic parts, preferably of an impact-type plastic.

By dispensing the toothpaste from the top end of the housing, residual dripping from the tube does not occur as the tube is in an upright position at all times.

I claim:

1. A dispenser for toothpaste and the like material packaged in a collapsible tube comprising:

a generally rigid, wedge-shaped housing defined by first and second side walls which flare apart from a bottom end of the housing to a top end of the housing, a first opening formed in said top end of the housing and a second opening formed in said first side wall;

a pressure plate;

means for pivotally mounting and supporting said pressure plate upright in said housing intermediate said side walls whereby to define a pivot for the bottom end of said pressure plate at the intersection of the planes of the confronting surfaces of said pressure plate and said second side wall, the top end of the plate being freely positionable in said housing;

means for adjustably positioning said pressure plate at a predetermined position intermediate said first and second side walls comprising a member axially movable in said second opening through said first side wall, one end of said member terminating in the interior of said housing and abutting said pressure plate, the other end of said member terminating exteriorally of said housing, wherein movement of said pressure plate away from said first side wall causes the material in the collapsible tube to exit through said first opening with said tube collapsing uniformly;

said bottom housing end being enclosed by disposition of the bottom ends of said side walls adjacent and latterally engaging opposite sides of the bottom end of said pressure plate; and

means for supporting said housing in an upright position whereby a toothpaste tube may be disposed in an upwright supported position within the pressure chamber formed by said pressure plate and said second side wall for selectively dispensing selected portions of the tube contents by actuation of said movable member.

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