May 3, 1955 J. A. ROMANO 2,707,578

DISPENSER FOR COLLAPSIBLE TUBES WITH TUBE-COLLAPSING ROLLERS AND INDICATOR

Filed Nov. 20, 1952 2 Sheets-Sheet 1

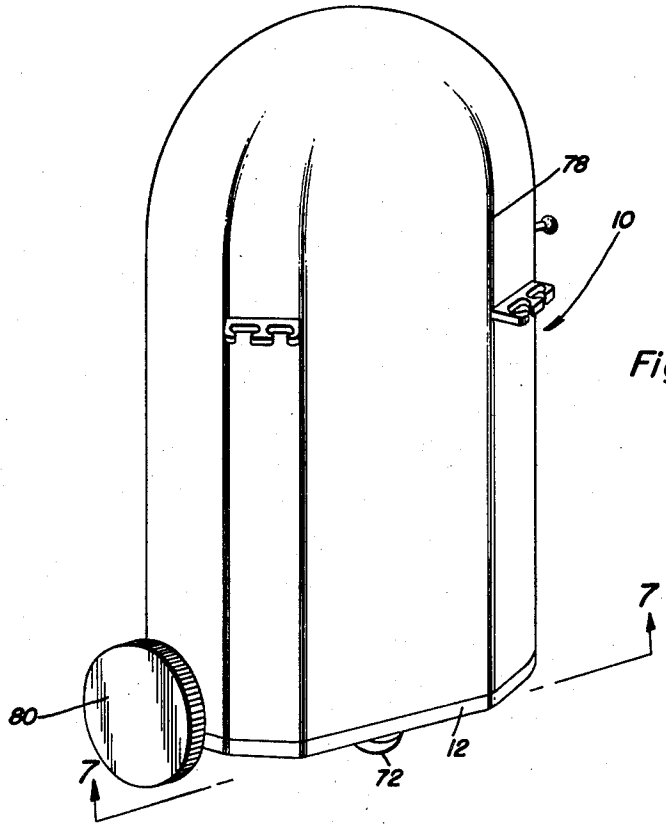


Fig. 1

Fig. 5

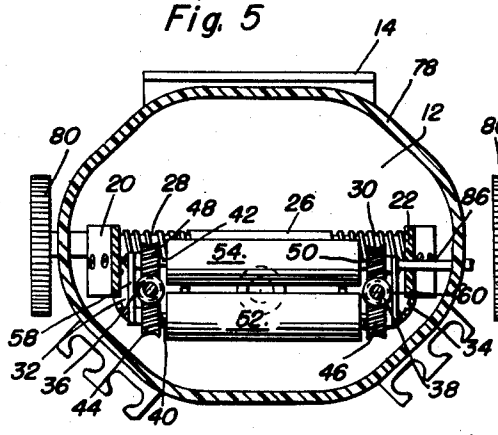
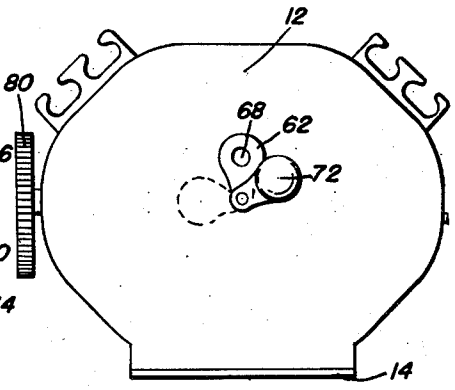


Fig. 7



James A. Romano INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson Attorneys

May 3, 1955 J. A. ROMANO 2,707,578

DISPENSER FOR COLLAPSIBLE TUBES WITH TUBE-COLLAPSING ROLLERS AND INDICATOR

Filed Nov. 20, 1952 2 Sheets-Sheet 2

Fig. 2

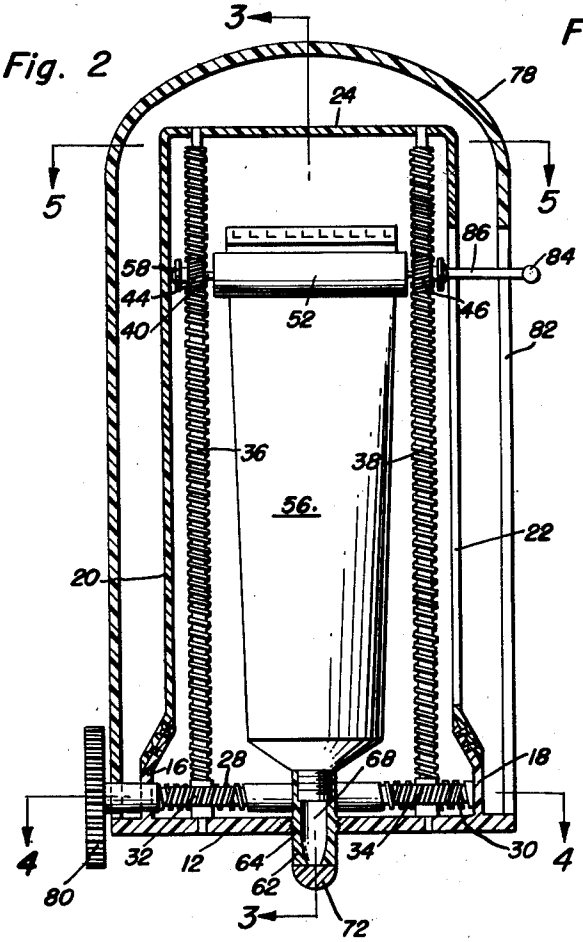
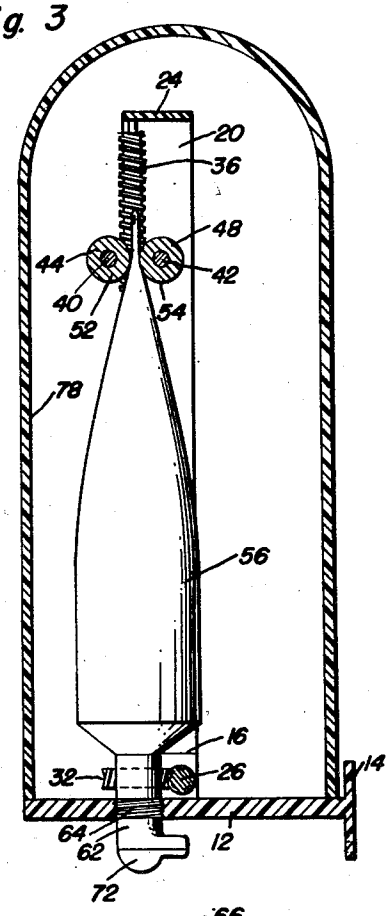


Fig. 3



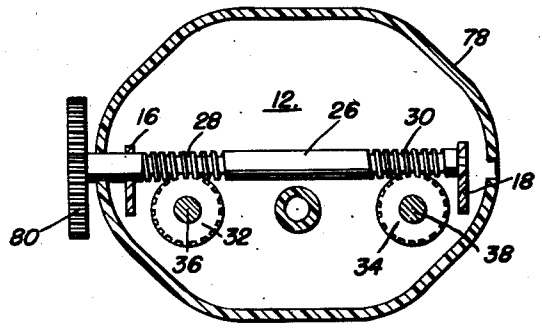


Fig. 4

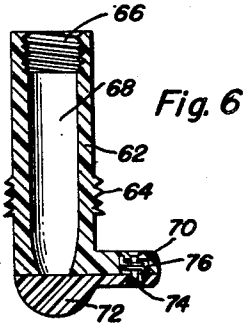


Fig. 6

James A. Romano
INVENTOR.

BY Thomas A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office 2,707,578 Patented May 3, 1955

2,707,578

DISPENSER FOR COLLAPSIBLE TUBES WITH TUBE-COLLAPSING ROLLERS AND INDICATOR

James A. Romano, Cambria Heights, N. Y.

Application November 20, 1952, Serial No. 321,675

2 Claims. (Cl. 222—47)

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 this invention is to facilitate convenient and expeditious dispensing of tooth paste directly onto a tooth brush.

Features of the present invention are the provision of a dispensing device having a pair of rollers horizontally disposed in side-by-side relation therein and in which a collapsible tube may be easily and readily placed with the closed end of the tube between the rollers and having forward means for causing the vertical movements of the rollers to collapse the tube to emit the substance when desired.

The structure of the invention includes a base adapted to support thereon a collapsible tube of tooth paste, together with means carried by the base for collapsing a tube, which means includes a substantially U-shaped frame member supporting a pair of elongated forward rods which carry the rollers used to collapse the tube.

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.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are obtained by this dispenser for collapsible tubes, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a perspective view of this dispenser for collapsible tubes;

Figure 2 is a vertical sectional view of the device showing a tube inserted and ready for use;

Figure 3 is a vertical sectional view as taken along the plane of line 3—3 in Figure 2;

Figure 4 is a horizontal sectional view as taken along the plane of line 4—4 in Figure 2 and showing in detail the construction of the means for actuating this mechanism;

Figure 5 is a vertical sectional view as taken along the plane of line 5—5 in Figure 2, and showing in plan view the construction of the rollers and the actuating means therefor which engage the collapsible tube;

Figure 6 is an enlarged sectional detail showing the construction of the discharge member and the cap therefor; and

Figure 7 is a bottom plan view of the dispenser comprising the present invention.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral **10** is used to generally designate this dispenser for collapsible tubes which may be formed from any suitable material, but which is preferably molded for the greatest part out of any suitably synthetic plastic material.

The dispenser **10** includes a base **12** having a flange **14** molded integrally therewith for attaching the dispenser **10** to a wall or other suitable surface.

Molded integrally with the base **12** are upwardly extending flanges **16** and **18** to which the legs **20** and **22** of a substantially U-shaped support member are secured. The legs **20** and **22** are secured together by a central connecting upper portion **24**. This substantially U-shaped supporting member is preferably made out of metal and re-enforces the actuating mechanisms of the invention. Carried by the flanges **16** and **18** is a shaft **26** which is threaded so as to form worm gears **28** and **30**. The worm gears **28** and **30** engage worm wheels **32** and **34** which are rigidly secured on elongated rods **36** and **38** respectively. The rods **36** and **38** are threaded along almost their entire lengths, and are journaled in the base **12** and in the top connecting member **24**.

A pair of opposed shafts **40** and **42** are provided and mounted thereon are opposed pairs of worm wheels **44** and **46**, and **48** and **50**, respectively. The pairs of worm wheels **44**, **46** and **48**, **50** are adapted to engage the opposite sides of the threaded rods **36** and **38** and to rotate as the rods **36** and **38** are rotated. Mounted on the shafts **40** and **42** are rollers **52** and **54** which are adapted to have inserted in between the collapsible tube which is generally indicated at **56**. Retaining members **58** and **60** join the ends of the shafts **40** and **42** and limit the position of the shafts while holding the worm wheels in engagement with the threaded rods **36** and **38**.

Threadedly secured in a threaded aperture in the base **12** is a discharge member **62** which has an externally threaded portion **64** adapted to engage the base **12**. There is provided an internally threaded portion **66** at the upper end of the discharge member **62** which is adapted to threadedly engage and retain the discharge end of the collapsible tube **56**. A passageway **68** is formed in the discharge member **62**. The discharge member **62** is further provided with a leg **70** which provides means to which a cap member **72** may be pivotally attached by means of pins **74**. Springs **76** are provided to continuously urge the cap into its covering relationship with the discharge member **62**. The casing **78** which may be of any ornamental shape and size as can be determined from the size of the members to be enclosed is provided and rests on the base **12**. A knurled wheel **80** is mounted on the end of the shaft **26** at side of the casing **78** for use in actuating the shaft **26**.

In operation, with the casing **78** removed, the shaft **26** is rotated, thus turning the threaded rods **36** and **38** and driving the shafts **40** and **42** to their uppermost position. Then, the collapsible tube **56** may be readily screwed in place within the threaded portion **66** of the discharge member **62**. Upon rotation of the wheel **80**, the rollers **52** engage the collapsible tube therebetween. Then, with intermittent rotation of the wheel **80**, some of the contents of the tube **56** will be discharged from it as desired. The cap **72** will provide means for definitely terminating the discharge of the contents while providing means for keeping the contents of the tube **56** fresh. It is to be understood that the threaded rods **36** and **38** are so threaded as to provide a minimum advance for each rotation thereof.

There is provided a suitable slot **82** in the casing **78** and a knob **84** is attached to the extension **86** of the shaft **42**. The knob **84** acts as means for informing the user of the position of the rollers and hence, of the quantity of substance remaining in the tube **56**.

Since from the foregoing, the constructional advantages of this dispenser for collapsible tube are readily

apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiment shown and described, but all suitable modifications and equivalents may be readily resorted to which fall within the scope of the appended claims.

What is claimed as new is as follows:

1. A plastic dispenser comprising a base, a substantially U-shaped support member secured to said base, a drive shaft carried by said base, worm gears on said drive shaft, worm wheels engaging said worm gears, said worm wheels being carried by elongated threaded rods, said rods being journaled in said base and said U-shaped member, opposed shafts having rollers secured thereon, threaded means on said opposed shafts engaging said elongated threaded rods for driving said opposed shafts rotating said rollers, and means holding said opposed shafts in spaced relationship and in engagement with said threaded rods, said base having a threaded aperture therethrough, and a discharge member secured to said base extending through said aperture, the axes of said threaded rods and said discharge member being coplanar, a cap pivotally secured to said discharge member and spring means connected to said cap and said discharge member continuously urging said cap to cover said discharge member.

2. A plastic dispenser comprising a base, a substantially U-shaped support member secured to said base, a drive shaft carried by said base, worm gears on said drive shaft, worm wheels engaging said worm gears, said worm wheels being carried by elongated threaded rods, said rods being journaled in said base and said U-shaped member, opposed shafts having rollers secured thereon, threaded means on said opposed shafts engaging said elongated threaded rods for driving said opposed shafts rotating said rollers, and means holding said opposed shafts in spaced relationship and in engagement with said threaded rods, said base having a threaded aperture therethrough, and a discharge member secured to said base extending through said aperture, the axes of said threaded rods and said discharge member being coplanar, a cap pivotally secured to said discharge member and spring means connected to said cap and said discharge member continuously urging said cap to cover said discharge member, and a casing secured on said base extending over said Ushaped member, a slot in said U-shaped member in alignment with an elongated aperture in said casing and an indicator attached to one of said opposed shafts extending through said slot and said elongated aperture for indicating the position of said opposed shafts and rollers whereby an indication is obtained of the quantity of contents of a collapsible tube adapted to be received between said rollers.

References Cited in the file of this patent

UNITED STATES PATENTS

1,783,101	Schaefer	Nov. 25, 1930
2,064,357	Ritterbusch	Dec. 15, 1936
2,140,007	Grandman	Dec. 13, 1938