Feb. 4, 1958 J. TRIPOLI 2,822,111

DISPENSING DEVICE FOR TOOTHPASTE OR THE LIKE SUBSTANCE

Filed March 1, 1956 2 Sheets-Sheet 1

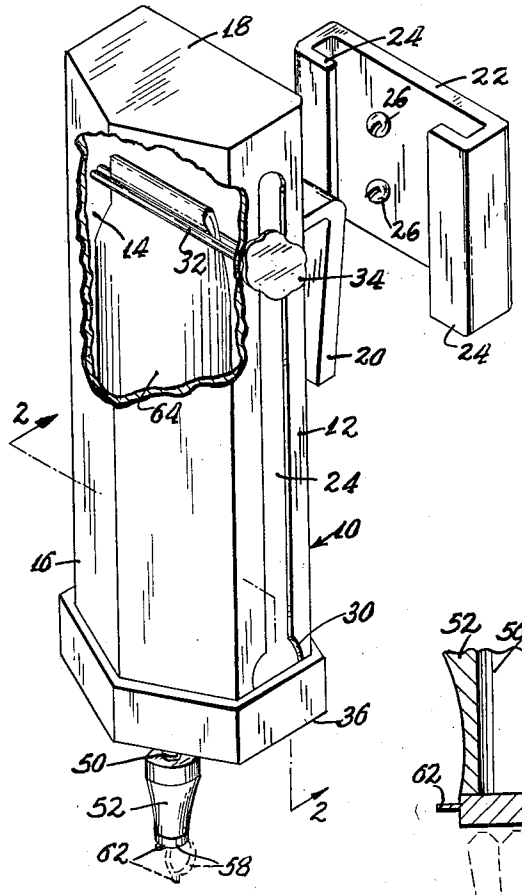


FIG. 1.

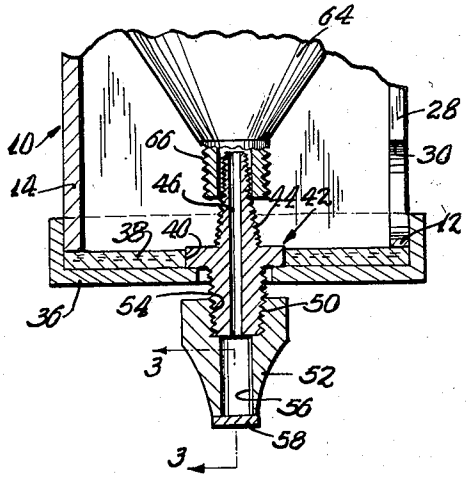


FIG. 2.

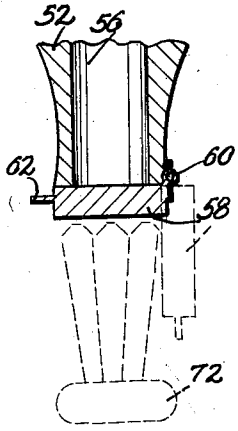


FIG. 3.

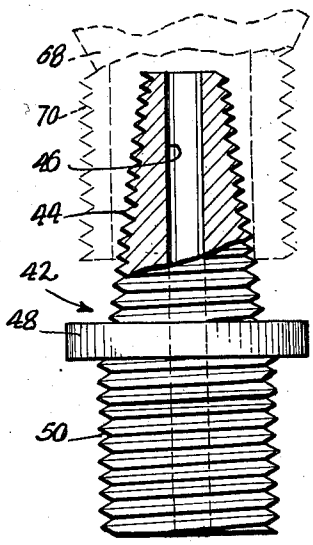


FIG. 4.

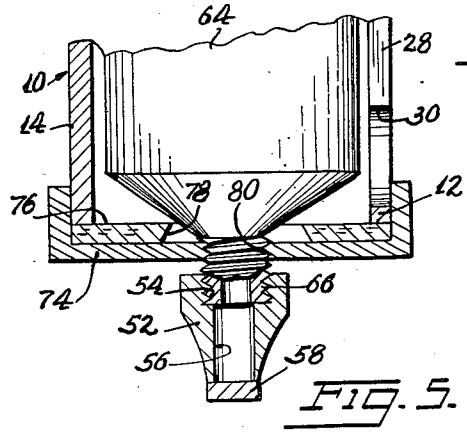


FIG. 5.

INVENTOR.
John Tripoli
BY
Zoltan A. Polachek
ATTORNEY

Feb. 4, 1958 J. TRIPOLI 2,822,111

DISPENSING DEVICE FOR TOOTHPASTE OR THE LIKE SUBSTANCE

Filed March 1, 1956 2 Sheets-Sheet 2

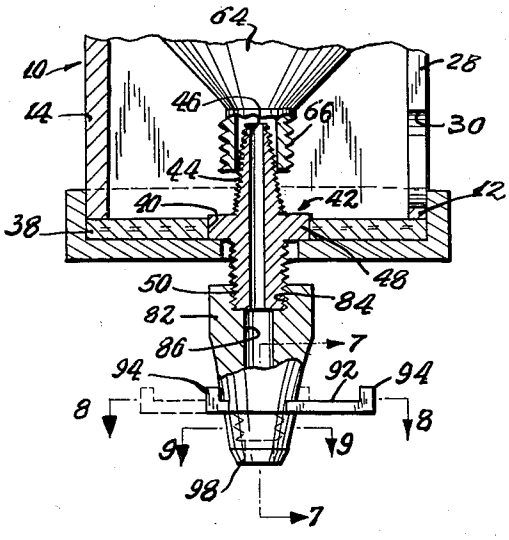


FIG. 6.

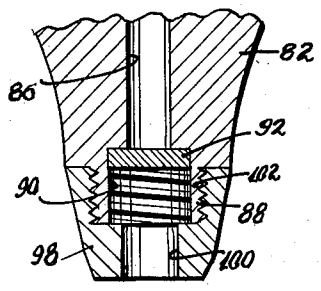


FIG. 7.

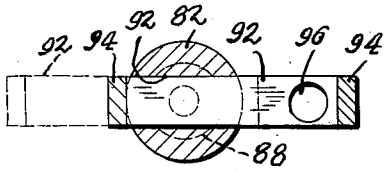


FIG. 8.

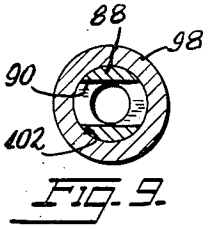


FIG. 9.

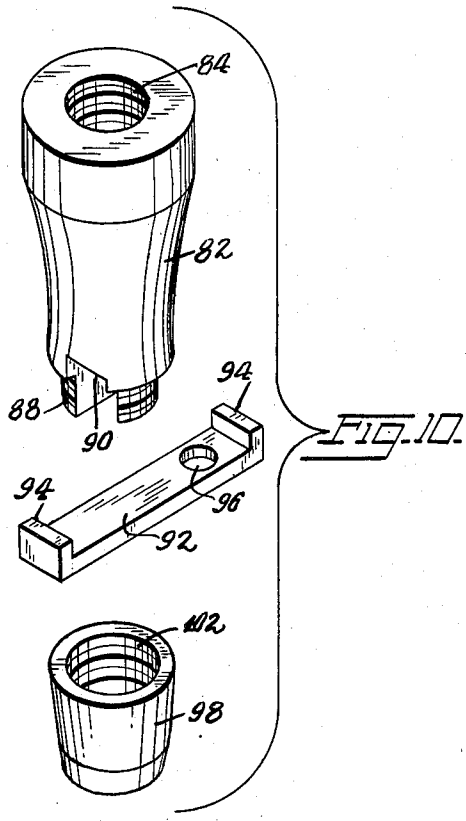


FIG. 10.

INVENTOR.
John Tripoli
BY
Zoltan Blaskey
ATTORNEY

United States Patent Office 2,822,111
Patented Feb. 4, 1958

2,822,111

DISPENSING DEVICE FOR TOOTHPASTE OR THE LIKE SUBSTANCE

John Tripoli, Culver City, Calif.

Application March 1, 1956, Serial No. 568,786

2 Claims. (Cl. 222—100)

This invention relates to a dispensing device adapted to hold a toothpaste container, such as the usual collapsible tube. The present application is an improvement on my copending application, Serial Number 451,433, filed August 23, 1954, now Patent No. 2,775,370, dated December 25, 1956.

In my copending application, there is shown a dispensing device adapted to be mounted upon a wall or other vertical surface, and supporting a collapsible tube in inverted position, with the device having a means for receiving the neck of the tube and for controlling the flow of the tube contents out of the lower end of the device.

In the present invention, the general organization of parts shown in the copending application, including a wall-attachable casing, a key on which the tube can be rolled to force the contents therefrom, and valved cap means at the lower end of the casing adapted to support the neck of the inverted tube and to control the flow of contents therefrom, are retained. The present invention, however, has as its main object the provision of a generally improved means for supporting the tube at its lower end, and for controlling the flow of contents from the tube.

Another object of importance is to provide, in one form of the invention, means of the type referred to that will be adapted to engage in collapsible tube necks of different diameters. In this way, it is proposed to adapt the device for supporting collapsible tubes of either small or large size.

Another object is to provide a device for dispensing the contents of a collapsible tube, which device will include cap means which can be selectively engageable either directly with the neck of the supported tube, or alternatively, with an adapter element which then becomes the support for the tube.

Still another object is to provide a device of the nature referred to which, in another form of the invention, includes a slidable closure particularly designed to facilitate its assembly with component parts of the structure, and further designed to be swiftly and easily adjusted between open and closed positions.

A further object is to provide a device of the nature referred to which will be adapted for manufacture at relatively low cost, will constitute an attractive attachment to the wall of a bathroom or other room in which the device is to be used, will be adapted to facilitate the removal of an exhausted tube and the replacement thereof with a fresh tube, will be capable of being merchandised at a relatively low cost, and will be of rugged construction so as to withstand long usage.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is an exploded perspective view of a dispenser formed according to the present invention, a portion of the casing being broken away.

Fig. 2 is an enlarged sectional view through the lower end portion of the casing substantially on line 2—2 of Fig. 1.

Fig. 3 is a still further enlarged, detail sectional view on line 3—3 of Fig. 2, a toothbrush being shown in dotted lines as it appears when the contents are being permitted to flow thereinto.

Fig. 4 is a view partly in elevation and partly in longitudinal section of the adapter shown in Fig. 2, the scale being enlarged substantially above that of Fig. 2, a supported toothpaste tube being shown fragmentarily and in dotted lines.

Fig. 5 is a view similar to Fig. 2 showing the cap element connected directly to the toothpaste tube, the casing construction being modified slightly.

Fig. 6 is a view similar to Fig. 2 showing another modification utilizing a slidable valve or closure, said closure being shown in a flow-preventing position in full lines, and in a flow-permitting position in dotted lnes.

Fig. 7 is an enlarged, longitudinal sectional view through the cap shown in Fig. 6, substantially on line 7—7 of Fig. 6.

Fig. 8 is a transverse sectional view through the device of Fig. 6, substantially on line 8—8 of Fig. 6.

Fig. 9 is an enlarged transverse sectional view on line 9—9 of Fig. 6.

Fig. 10 is a still further enlarged, exploded perspective view of the cap and closure means.

Referring to the drawings in detail, the reference numeral **10** generally designates a casing, which can be of molded plastic or any other suitable material, such as a non-corrosive metal. The casing is of vertically elongated formation, and has vertical, flat side walls **12**, **14**, respectively, a front wall **16** which can be of shallowly V-shaped cross section as shown (though this particular configuration is not critical to the invention), a top wall **18**, and an open bottom.

Rigid with and projecting rearwardly and downwardly from the back wall of the casing is a tongue **20** which can be of wedge shape, so as to engage in the complementarily shaped guideway of a bracket **22** having inwardly turned flanges **24** defining said guideway. The bracket **22** is attachable to a wall surface or the like, not shown, by means of vertically spaced screws **26** or equivalent fastening elements.

In the side wall **12**, there is formed a longitudinal slot **28**, terminating at its upper end close to the top wall **18** and at its lower end close to the lower extremity of the casing. The slot **28**, at its lower end, may have a circular enlargement **30**, and extending through the slot is the longitudinally slotted shank **32** of a key having a flat, peripherally fluted or scalloped handle **34**. The particular construction of the handle **34** facilitates the grasping and rotation of the key **32**, it being preferred as shown to form a handle of substantially large diameter for this purpose.

Closing the lower end of the casing is a lower end cap **36**, having an upwardly directed peripheral flange receiving the lower end portion of the casing. The casing cap **36** may be detachably secured in any suitable manner to the casing, and in the present instance is adapted to tightly and frictionally engage the casing through the full periphery thereof. Cemented or otherwise secured to the inner surface of the cap is a liner **38** of cork or similar material, bearing against the lower end edge of the casing, and formed in the liner is a circular center opening **40** of substantial diameter.

An adapter has been generally designated at **42**, and

intermediate its ends is formed with a circular collar 48 fitting snugly and removably in the opening 40.

The adapter 42, above the collar, is formed with an elongated, axial extension 44, having external threads for its full length, said extension being externally tapered fully from the collar to the upper extremity of the extension. Formed in the extension is an axial bore 46 through which the pasty contents of the supported toothpaste tube may flow, said bore continuing through the full length of the adapter, so as to open upon the lower end of a cylindrical, externally threaded body portion 50 of the adapter, said body portion extending fully from the collar to the lower extremity of the adapter.

Removably connectable to the body portion 50 is a cap member 52, the upper end portion of which is cylindrically shaped, and the lower end portion of which tapers to the lower extremity of the cap member. In the upper end of the cap member there is formed a threaded recess 54 communicating at its inner end with an axial bore 56 of the cap member. The axial bore 56 extends fully to the lower end of the cap member, and is normally closed by a closure member 58 which, as shown in Fig. 3, has a spring hinge connection 60 to the cap member.

Diametrically opposite the spring hinge 60 is an outwardly projecting ear 62 which can be readily grasped by a user for a purpose of swinging the closure member 58 from its normally closed position to an open position shown in dotted lines in Fig. 3. In its open position, the closure member 58 depends substantially vertically from its hinge 60, and the spring of the hinge 60 is so tensioned as to normally swing the closure member to its closed position whenever the closure member is released following dispensing of the tube contents.

A conventional tooth paste tube has been designated at 64, and is disposed in inverted position within the casing. The key 32 is applied to the toothpaste tube with the base end of the tube extending into the slot of the key. It will thus be seen that to dispense the contents of the tube, one need merely rotate the key, so as to roll the tube from its base to its neck end, to effect dispensing of the contents.

In use of the device, with the casing cap 36 removed, the tube is inserted and the key applied in the manner previously described. Before insertion of the tube the closure cap, not shown, generally provided upon a tube of this type is removed, and the adapter 42 is forced into the neck of the toothpaste tube. The threads of the adapter are adapted to bite into the smooth inner surface of the cylindrical wall of the neck 66 of the tube, so as to connect the tube neck to the adapter in position such that the dispensed contents will be caused to flow through the axial bore 46.

It is of importance that the adapter is so designed as to be engageable in the necks of toothpaste tubes of different sizes. A small size tube will ordinarily have a relatively small diameter neck, whereas a large tube may have a neck of substantial diameter as shown, for example, in Fig. 4 in which the large size tube has been designated at 68 and has a large diameter neck 70. In this case, the adapter will extend to a further extent within the neck as may be noted by comparing Figs. 4 and 2. However, the same action is obtained, that is, when the adapter has been projected into the tube neck to the maximum extent, it can bite into the wall of the tube neck so as to securely attach the tube to the adapter. In effect, a self-tapping or threading action is achieved, with the threads of the adapter forming thread grooves in the inner surface of the tube neck wall for a short distance.

With the tube supported in the dispenser casing in the manner shown, and the cap 36 applied to the lower end of the casing, the device is ready for use. A toothbrush 72 can be employed to swing the closure member 58 to open position, and will hold the closure member in the open position with the bristles of the toothbrush head disposed in position to receive the flow out of the bore 56 of the cap member 52. As soon as a sufficient amount of the tube contents has been dispensed, the closure member 58 will immediately swing back to its closed position under the force of its associated spring.

In Fig. 5 there is shown a slightly modified construction, making use of the same casing as shown in Fig. 1 and also making use of the same cap member 52. In this form, however, the adapter is omitted, and the neck of the toothpaste tube extends through the casing cap, which has been designated at 74.

The casing cap is generally similar to the cap 36, except that it has a liner 76 which has a center opening 78 substantially greater than the center opening 40. Further, the cap 74 has a centrally disposed threaded opening 80, as distinguished from the smooth-walled center opening of the cap 36 of the first form.

In this form, the toothpaste tube can be threaded through opening 80, after which the cap member 52 is threaded directly onto the neck 66 of the toothpaste tube, with the adapter being eliminated.

In Figs. 7–10, there is shown another modification, making use of a slidable closure member instead of a hinged member such as has been shown in Fig. 1.

In this form the casing, casing cap 36, and adapter 42 are all identical to those used in the first form of the invention. However, instead of the cap member 52 and closure member 58, there are used modified, analogous components including a cap member 82 having at its upper end an upwardly opening, threaded recess 84 communicating with an axial flow passage or bore 86.

As shown to particular advantage in Fig. 10, at its lower end the cap member has a reduced, axial extension 88 which is externally threaded. Further, formed in the lower extremity of the cap member 82 is a wide, deep transverse slot 90 of rectangular cross section, opening downwardly through the extension 88 and also opening upon diametrically opposite surfaces of the cap member. In depth, the slot 90 is greater than the length of the extension 88, that is, the inner wall of the slot is disposed above the juncture between the body part of the cap member 82 and the extension 88 thereof.

A slidable closure member 92 is formed as an elongated, flat, straight bar having at its opposite ends upwardly turned lips 94 to facilitate grasping of the closure member. Adjacent one of the lips 94 of the closure member 92 is an opening 96, adapted to be registered with the bore 86 when the closure member is slid to its dotted line position of Figs. 6 and 8.

In assembling the cap member 82 and closure member 92, with a cap element 98 used for holding the closure member assembled with the cap member, one first shifts the closure member upwardly within the slot 90 to cause the closure member to bear against the inner wall of the slot. Then, the cap element 98, which is tapered in extension of the taper of the cap member 82, is threaded onto the extension 88 so as to bear against the underside of the slidable closure 92.

The cap element 98 (see Fig. 7) has an axial bore 100 opening upon the lower end thereof, and communicating at its upper end with a threaded counterbore 102 that engages the extension 88.

By reason of the arrangement illustrated, it will be seen that on assembly of the cap member with the closure member and cap element, the slidable closure is mounted for reciprocation in a direction longitudinally thereof between the full and dotted line positions shown in Figs. 6 and 8. In the full line position, the closure member is disposed to prevent flow through the bore 86 of the cap member, but to permit said flow one need merely shift the closure member to its flow-permitting position, with the toothbrush held under the cap element 98.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifi-

cations may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A dispensing device for the contents of a collapsible tube comprising a generally vertical casing formed open at its lower end and adapted for supporting a collapsible toothpaste tube in an inverted position, means to mount the casing upon a wall surface, a cap closing the lower end of the casing, means connectable to the neck of said tube having a passage for the contents of the tube through which said contents may be dispensed, a closure on said last-named means movable between opposite extreme positions closing and opening said passage respectively, means extending into the casing for applying a pressure to the tube tending to collapse the same, and means connectable to the tube including an adapter having an upper end portion engageable in the neck of the tube, said upper end portion of the adapter being externally threaded for forming threads in the inner surface of the tube neck, said upper end portion being tapered externally thereof for engagement thereof in tube necks of different internal diameters, the adapter additionally including a collar at the base of the tapered upper end portion, said cap having a center opening through which the adapter extends and said collar being supported upon the edge portion of said center opening, said adapter further including a depending lower end portion below the collar, said means connectable to the tube further including a cap member adapted for detachable connection to said depending end portion of the adapter, said closure being mounted upon said cap member, said closure comprising a slide mounted on the cap member and having an opening registering with said passage in one position to which the slide is shifted and moved out of registration with said passage in the opposite extreme position to which the slide is shifted.

2. A dispensing device for the contents of a collapsible tube comprising a generally vertical casing formed open at its lower end and adapted for supporting a collapsible toothpaste tube in an inverted position, means to mount the casing upon a wall surface, a cap closing the lower

end of the casing, means connectable to the neck of said tube having a passage for the contents of the tube through which said contents may be dispensed, a closure on said last-named means movable between opposite extreme positions closing and opening said passage respectively, means extending into the casing for applying a pressure to the tube tending to collapse the same, and means connectable to the tube including an adapter having an upper end portion engageable in the neck of the tube, said upper end portion of the adapter being externally threaded for forming threads in the inner surface of the tube neck, said upper end portion being tapered externally thereof for engagement thereof in tube necks of different internal diameters, the adapter additionally including a collar at the base of the tapered upper end portion, said cap having a center opening through which the adapter extends and said collar being supported upon the edge portion of said center opening, said adapter further including a depending lower end portion below the collar, said means connectable to the tube further including a cap member adapted for detachable connection to said depending end portion of the adapter, said closure being mounted upon said cap member, said closure comprising a slide mounted on the cap member and having an opening registering with said passage in one position to which the slide is shifted and moved out of registration with said passage in the opposite extreme position to which the slide is shifted, the cap member being slotted at its lower end to receive said slide and having a threaded axial extension at its lower end in which the slot is formed, said means connectable to the neck of the tube further including a cap element attachable to said threaded extension of the cap member and bearing against the underside of the slot to hold the slide assembled with the cap member.

References Cited in the file of this patent

UNITED STATES PATENTS

971,818	Barker	Oct. 4, 1910
1,192,868	Covington	Aug. 1, 1916
1,751,129	Cocks	Mar. 18, 1930
1,906,837	Brochu	May 2, 1933
2,110,868	Coates	Mar. 15, 1938