Aug. 5, 1952 G. LOCKE 2,605,932

DISPENSER FOR COLLAPSIBLE TUBE CONTAINERS

Filed Aug. 7, 1948 2 SHEETS—SHEET 1

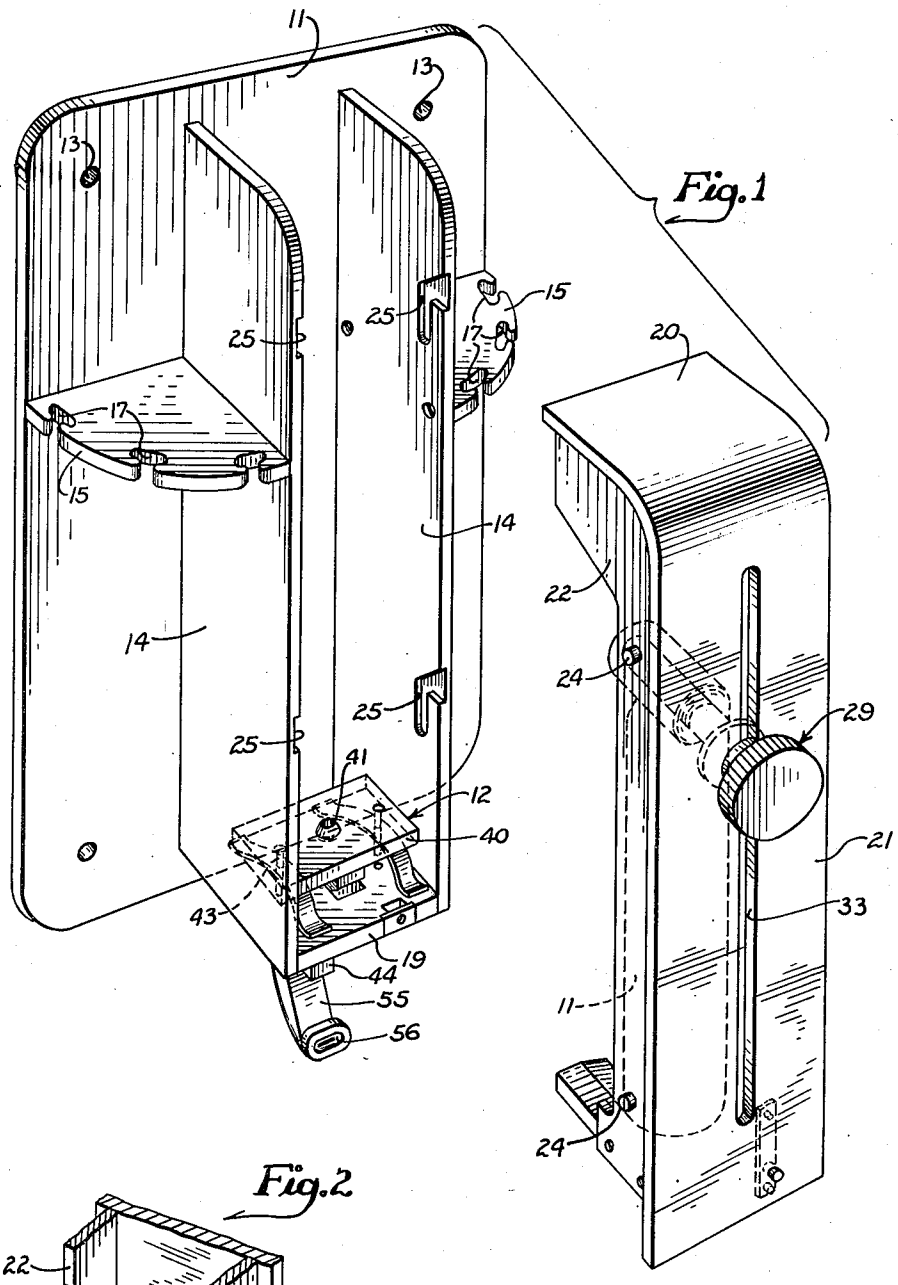


Fig. 1

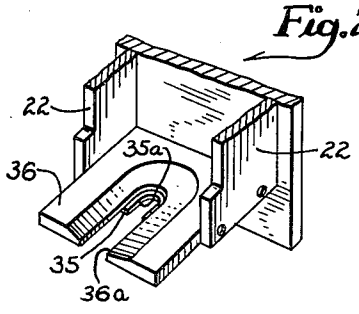


Fig. 2

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Fig. 3

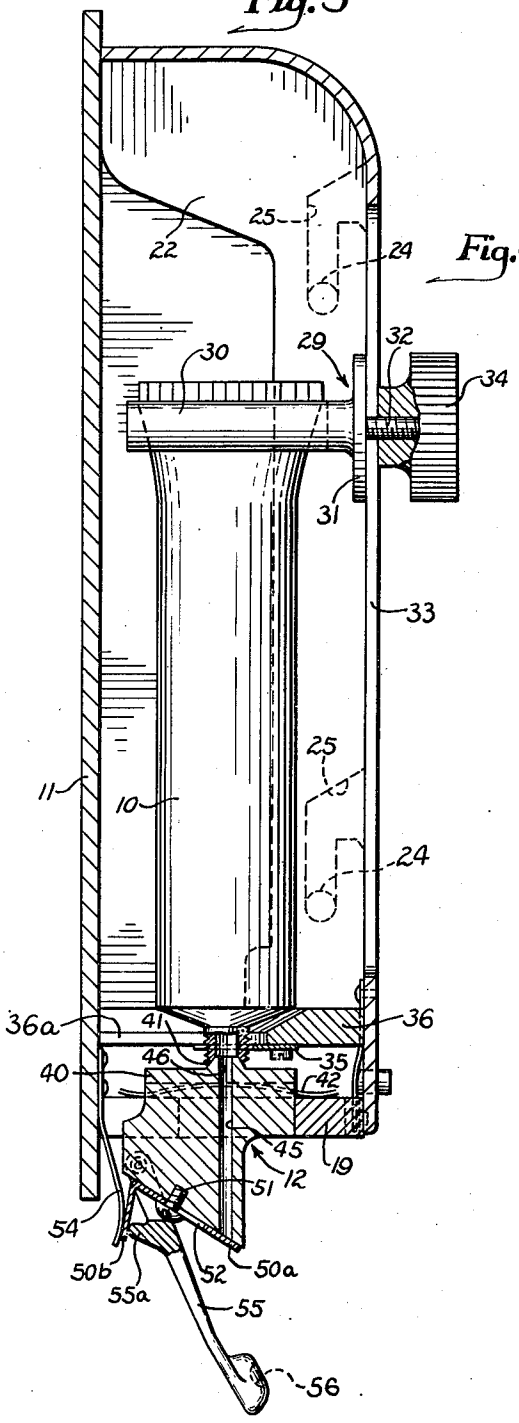


Fig. 4

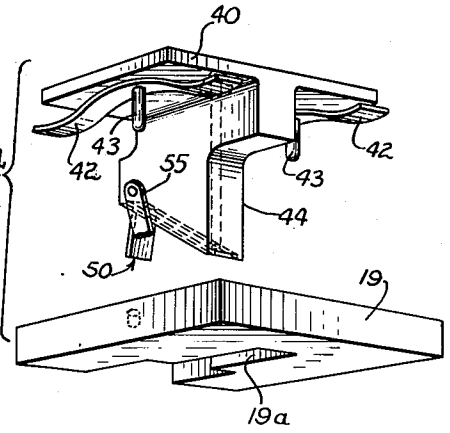


Fig. 5

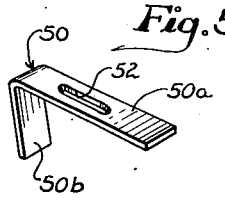
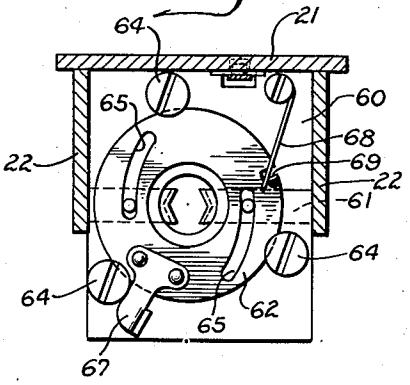


Fig. 6



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DISPENSER FOR COLLAPSIBLE TUBE CONTAINERS

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3 Claims. (Cl. 222—80)

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The present invention pertains generally to dispensing devices and more particularly to such devices for housing and supporting collapsible tube containers such as those commonly used for tooth paste, shaving cream and the like.

It is an object of the invention to provide in a dispenser of the above character a construction and arrangement which facilitates the insertion of a collapsible tube container, protects the same from damage, maintains the container in a sanitary condition and minimizes waste of its contents upon discharge thereof.

A further object of the invention is to provide a novel dispenser for collapsible tube containers which is of durable construction, capable of being easily and quickly manipulated, and of neat appearance.

The objects of the invention thus generally set forth together with other and ancillary advantages are attained by the construction and arrangement shown by way of illustration in the accompanying drawings, in which:

Figure 1 is an exploded perspective view of a dispenser embodying the present invention.

Fig. 2 is a fragmentary perspective view of the lower portion of the removable housing section shown in Fig. 1.

Fig. 3 is a central vertical section through the instant dispenser.

Fig. 4 is an exploded perspective view of elements constituting the bottom of the dispenser.

Fig. 5 is a view of an element of the paste cut-off mechanism of the dispenser.

Fig. 6 is a plan view of a modified form of tube clamping assembly.

While the invention is susceptible of various modifications and alternative constructions, there is shown in the drawings and will herein be described in detail the preferred embodiment, but it is to be understood that it is not thereby intended to limit the invention to the form disclosed, but it is intended to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

Referring more particularly to the drawings, the exemplary dispenser there shown comprises generally a support for a collapsible tube container 10 which includes a pair of relatively movable sections one of which has a backing plate 11, and the other section provides means to receive and hold the tube 10. Additionally, there is a paste discharge and cut-off mechanism 12 disposed adjacent the bottom of the dispenser. The backing plate 11 is adapted to be fastened to a wall or other vertical supporting surface by

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means of suitable fastening elements such as screws or the like (not shown) received in holes 13 provided therefor adjacent each of the corners of the plate 11.

To facilitate the insertion of the tube 10 in the dispenser housing, which is formed of two sections, the construction and arrangement in the illustrative embodiment is such that one section can be separated entirely from the other section so that the tube 10 can be supported on the former prior to its assembly with the fixed housing section. This can be readily accomplished thus insuring proper mounting of the tube while eliminating necessity for any awkward manipulation of the tube with the attendant possibility of damage thereto.

The section of the housing which is adapted to be fixed to some supporting surface comprises a pair of side walls 14 disposed in spaced parallel relation and secured to the backing plate 11. To provide additional strength and rigidity, corner braces 15 are provided between each of the walls 14 and the backing plate 11. When it is desired to use the instant device as a dispenser for tooth paste, the corner braces 15 may serve the additional useful purpose of holding tooth brushes (not shown) and thus they are provided with generally T-shaped notches 17 for the reception of the handles of such brushes.

The bottom wall of the housing is formed by a horizontally disposed plate 19 which is secured between the fixed walls 14 adjacent the bottoms thereof.

In the present instance top and front walls 20 and 21, respectively, of the housing are formed by the removable housing section, and preferably both are formed integrally from a single piece of sheet material. Rigidity for the removable housing section is provided by means of a pair of inwardly extending, spaced, parallel ribs 22. The ribs 22 serve additionally to support the removable housing section on the fixed housing section. To this end, adjacent the top and bottom of each rib there is provided a laterally extending pin 24 which is adapted to be received in correspondingly disposed bayonet-type grooves 25 formed in the fixed housing section walls 14.

To support the flat end of the tube 10 and to provide means for rolling it up to extrude the contents therefrom, a key and knob assembly 29 is provided which is mounted on the removable housing section. As shown, the assembly includes a cylindrical key 30 having a slit (not shown) therein for the reception of the flat end of the tube 10. This cylindrical key is of sufficient diameter to permit the tube to be rolled

smoothly thereon to discharge its contents. Formed on the outer end of the key is a peripheral flange 31 which rides against the front wall 21 of the housing. Fixed to the center of the flange 31 and projecting outwardly from it is a screw-threaded pin 32. The pin 32 is guidingly received for vertical movement in a slot 33 formed in the front wall 21 of the housing. The outer end of the pin supports a knob 34 by means of which the key and knob assembly 29 can be rotated to roll up the tube, such motion also producing the vertical movement of the assembly 29.

In the present instance the means provided to support the neck portion of the tube 10 comprises a gripping plate 35 having a U-shaped notch 35*a* therein the edges of which are offset from a common plane so as to engage the threads on the tube neck. The gripping plate 35 is supported on a bracket 36 which is rigidly secured between the ribs 22 and to the front wall 21 of the removable housing section. The bracket 36 has a U-shaped notch 36*a* therein of a width slightly greater than that of the gripping plate notch 35*a* which underlies it. The upper edges of the bracket portions defining the notch 36*a* are chamfered to conform generally to the taper of the end of the tube 10 adjacent its neck.

When the tube 10 has been mounted on the removable housing section, the latter is then assembled on the fixed housing section by first inserting the pins 24 in the open ends of the bayonet grooves 25, and then moving the removable housing section downwardly so that the pins 24 pass into the downwardly extending groove portions. This movement brings the neck of the tube 10 into engagement with the paste discharge and cut-off assembly 12.

The paste discharge and cut-off assembly 12 includes a pressure plate 40 having a conical boss 41 formed centrally thereof which is adapted to be partially received in the open end of the neck of the tube 10. In order to maintain the boss in engagement with the tube neck a pair of leaf springs 42 are provided between the plate 40 and the bottom wall 19 of the fixed housing portion. Centrally of the springs 42 and serving both to secure the springs to the plate 40 and to guide vertical movement of the plate under the action of the springs or downward force applied to the boss 41 when it is engaged by the tube neck are a pair of pins 43 which are received in similarly disposed recesses in the bottom wall 19.

The paste discharge and cut-off assembly 12 also includes a spout 44 which is disposed centrally of and beneath the plate 40 and has a passage 45 extending vertically therethrough. The passage 45 registers with a similarly disposed passage 46 which extends through the plate 40 and its conical boss 41. So that the spout can project beneath the dispenser housing in convenient discharge position, the bottom wall 19 is provided with a T-shaped opening 19*a* through which the spout 44 is passed. The bottom of the spout is disposed at an angle to the horizontal, and carried thereon is a paste cut-off slide 50. The slide is generally L-shaped having two legs 50*a* and 50*b*, and is movably secured to the spout 44 as by a screw 51 received in a slot 52 fashioned in the leg 50*a* of the slide that rides on the angularly disposed spout bottom. The forward end portion of the slide leg 50*a* serves as a shearing type cut-off valve for the paste extruded from the tube 10 through the discharge passages 46 and 45. As illustrated in the drawings, the slide 50 is biased toward closed position by means of a depending leaf spring 54 which is secured to the plate 11 and which engages the rear side of downturned slide leg 50*b*. A lever 55 is provided to operate the slide 50 against the action of the spring 54. To this end, the lever 55 is pivoted on the spout 44 and is provided intermediate its ends with a cam lobe 55*a* which engages the side of the slide leg 50*b* opposite the spring 54. Preferably, the outer depending end of the lever 55 is provided with a recess 56 to receive the end of a tooth brush (not shown) and prevent the same from sliding off.

In operation a user merely presses the end of his tooth brush against the depending end of the lever 55 moving it rearwardly thus withdrawing the slide 50 from its position over the end of the discharge passage 45 in the spout 44, and then rotates the knob 34 to force some of the paste from the tube 10. When the desired amount of paste has been deposited on the bristles of the brush, which were moved beneath the passage 45 when the lever 55 was moved rearwardly, the brush is then removed whereupon the spring 54 forces the slide 50 back to its closed position severing the thread of extruded paste. Thus there is no waste nor is there any paste left exposed.

It is to be noted that the construction and arrangement hereinbefore set forth permits of ready disassembly and access for cleaning purposes. The paste discharge and cut-off assembly 12 including the plate 40, boss 41, spout 44, slide 50 and lever 55 are all secured together and may be removed as a unit by merely pressing upwardly on the plate 40 or the spout 44 thus withdrawing the guide pins 43 from their recesses in the bottom plate 19 and the spout and lever through the opening 19*a*. This leaves the bottom plate 19 clear so that it can be cleaned if necessary. With the tube 10 removed from the removable housing section its components, the gripping plate 35 and its bracket 36 in particular, are also readily accessible so that they can be cleaned.

In Figure 6 of the drawings there is shown a modified form of means for clamping the neck end of the tube 10 which can be substituted for the gripping plate 35 and bracket 36 illustrated in the preceding figures of the drawings. This means is in the form of a spring biased, movable jaw clamp. As shown, it includes a horizontally disposed base plate 60, a pair of opposed clamping jaws 61 and a cam disk 62 for operating the clamping jaws. The cam disk 62 and the jaws 61 are received in suitably fashioned recesses in the base plate 60 and the former is guidingly held in its recess by means of three peripherally disposed screws 64. The cam disk is provided with a pair of cam slots 65 in which are received pins 66 fixed to the clamping jaws 61. A finger piece 67 is secured to the cam disk so that the same can be rotated. As viewed in Fig. 6, rotation of the cam disk in a clockwise direction will move the jaws toward each other and into engagement with a tube neck inserted therebetween. Rotation of the disk in a counterclockwise direction is effective to move the jaws into retracted position. An overcenter spring 68 secured to the base plate 60 and acting against a dog 69 struck from the cam disk 62 is provided to hold the disk in one position to maintain the jaws 61 in engagement with the neck of a tube inserted between them or in its opposite position to hold the disk to retain the jaws in withdrawn position to permit the insertion or removal of a tube neck.

This form of tube clamping arrangement is particularly advantageous when it is desired to use the dispenser alternatively with different sizes of collapsible tube containers.

I claim as my invention:

1. A dispenser for a collapsible tube container comprising, in combination, a support for the container including a pair of relatively movable sections normally fitted together to enclose the container, supporting means on one of said sections for securing the container thereto prior to moving the same into normal position with respect to the other section, and a paste discharge and cut-off assembly removably supported on the other of said sections, said assembly including a member having a passage therethrough and spring means for biasing said member into engagement with the neck of the container upon moving the sections into normal position, said assembly also including means operative to close said passage when the desired amount of the contents of the container has been discharged.

2. A dispenser for a collapsible tube container comprising, in combination, a housing, means to support the container in the housing, and a paste discharge and cut-off assembly supported on said housing and including a member and spring means biasing said member for engagement in the neck of the container, said assembly also including a spout projecting beneath the dispenser, said member and spout having registering paste discharge passages therethrough, said assembly further including a lever operated slide supported on said spout and operative to sever the thread of paste extruded from the container through said passages when the desired amount has been discharged.

3. A dispenser for a collapsible tube container, having, in combination, a support for the container comprising two sections, a paste discharge and cut-off assembly mounted on one of said sections and having a passage therein through which the contents of the container is extruded, the other of said sections having means for holding the container with its neck in a fixed position relative thereto, said sections being relatively movable into a position wherein said assembly and the container are juxtaposed, and spring means operative when the sections occupy said position to maintain said passage and the container neck in register.

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