Sept. 14, 1954 J. BUDNIK 2,689,066

DISPENSING HOLDER FOR PASTE TUBES HAVING MEANS FOR COMPRESSING A TUBE

Filed Feb. 26, 1952 2 Sheets-Sheet 1

Fig. 1.

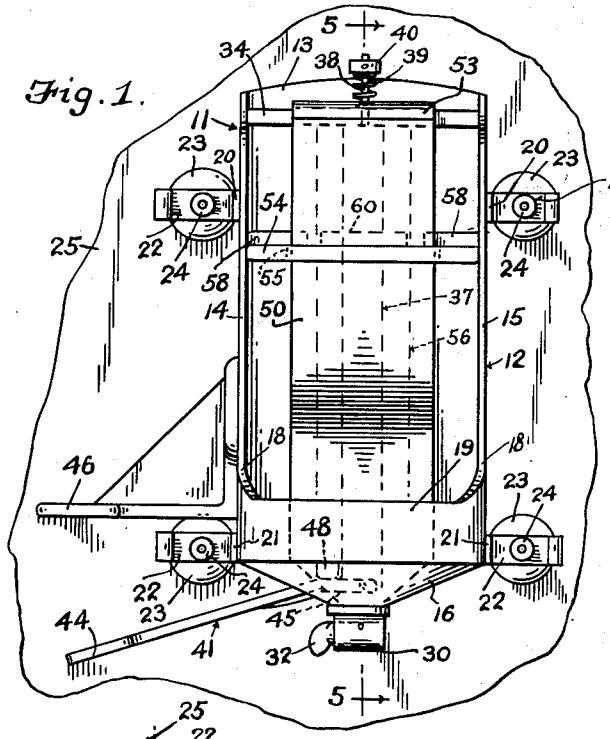


Fig. 2.

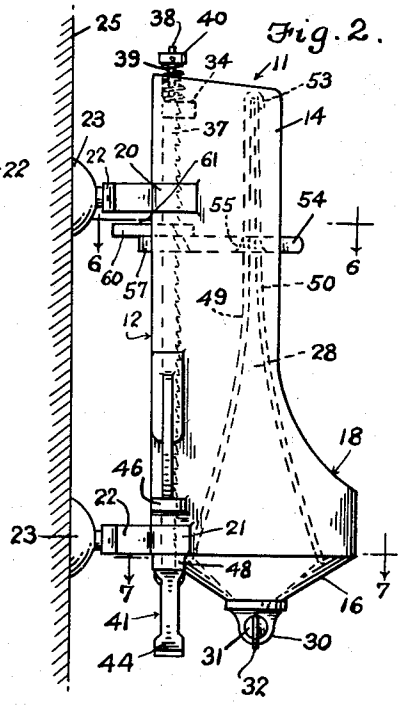


Fig. 3.

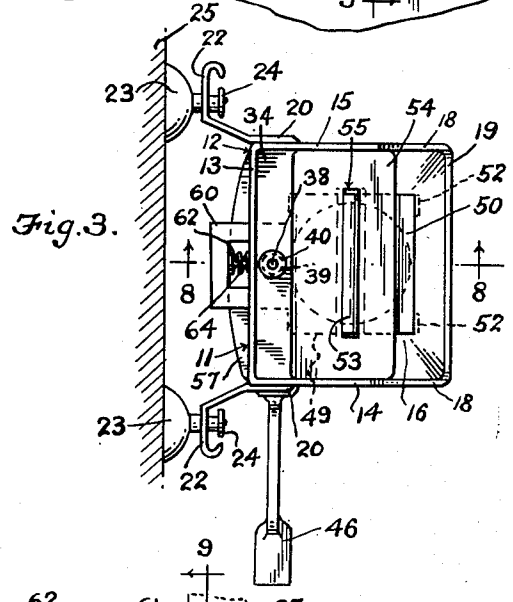


Fig. 4.

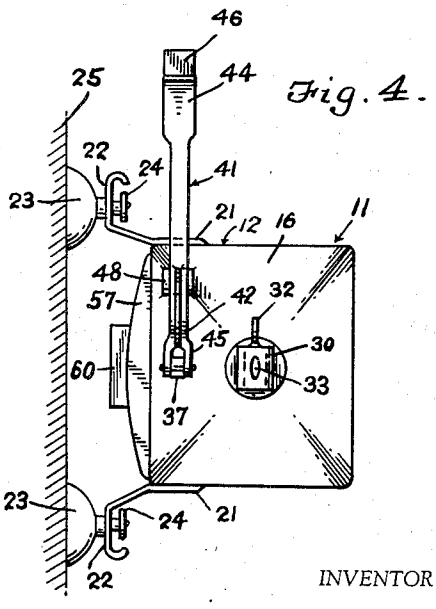
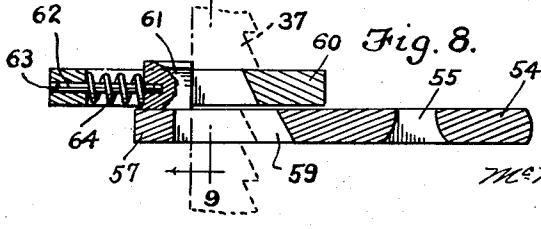


Fig. 8.



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Fig. 5.

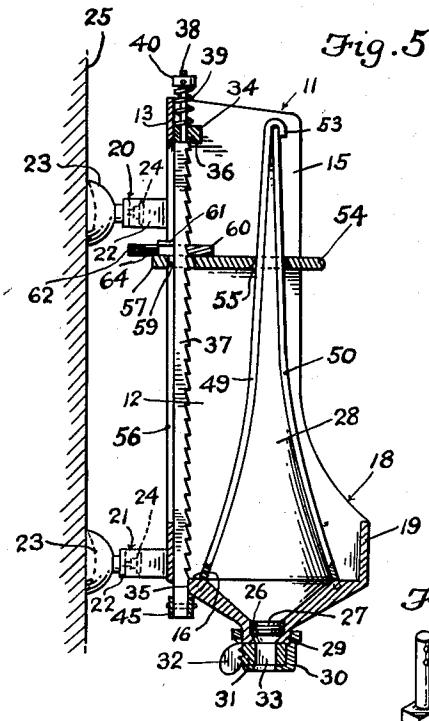


Fig. 6.

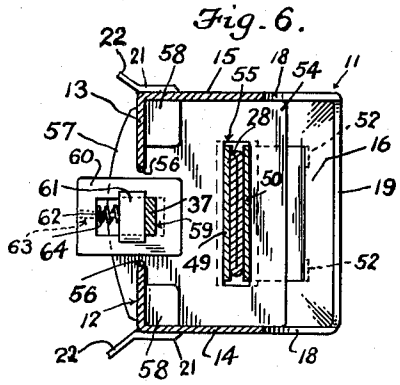


Fig. 7.

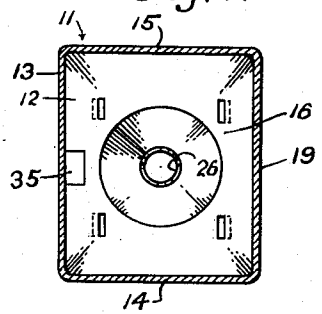


Fig. 10.

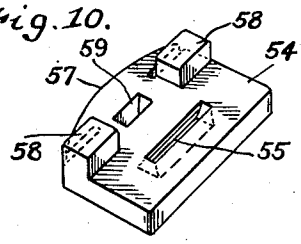


Fig. 11.

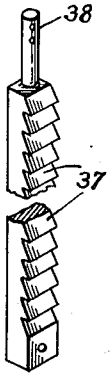


Fig. 9.

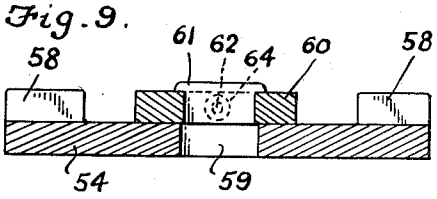


Fig. 12.

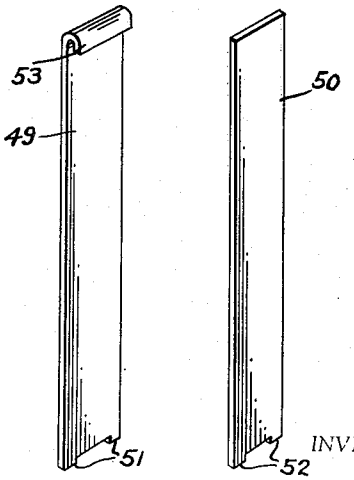


Fig. 13.

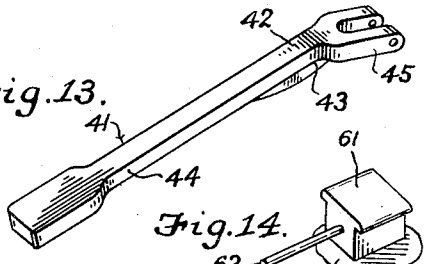


Fig. 14.

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DISPENSING HOLDER FOR PASTE TUBES HAVING MEANS FOR COMPRESSING A TUBE

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Application February 26, 1952, Serial No. 273,385

4 Claims. (Cl. 222—103)

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This invention relates to holders for paste tubes, and more particularly to a dispensing holder for a collapsible tube of paste material, such as toothpaste, shaving cream, or the like.

The main object of the invention is to provide a novel and improved dispensing holder for a collapsible tube of paste material, said holder being simple in construction, being easy to install, and being operable by a simple manual operation to dispense a measured quantity of paste material.

A further object of the invention is to provide an improved dispensing holder for a collapsible tube of paste material such as toothpaste, shaving cream, or the like, the holder being inexpensive to manufacture, being attractive in appearance, being easy to clean, and preventing waste of the paste material.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a front elevational view of an improved dispensing holder for a collapsible tube of paste material in accordance with the present invention, shown set up for use.

Figure 2 is a side elevational view of the dispensing holder of Figure 1.

Figure 3 is a top view of the dispensing holder of Figures 1 and 2.

Figure 4 is a bottom view of the dispensing holder of Figures 1 to 3.

Figure 5 is a vertical cross sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a horizontal cross sectional view taken on the line 6—6 of Figure 2.

Figure 7 is a horizontal cross sectional view taken on the line 7—7 of Figure 2.

Figure 8 is an enlarged cross sectional detail view taken on the line 8—8 of Figure 3 and showing the structure of the compressor plate employed in the dispensing device.

Figure 9 is a cross sectional view taken on the line 9—9 of Figure 8.

Figure 10 is a perspective detail view of the compressor plate employed in the dispensing device.

Figure 11 is a fragmentary perspective view of the ratchet bar employed in the dispensing device.

Figure 12 is a view of the flexible plate members employed to transmit squeezing pressure to the collapsible tube of paste material contained in the holder.

Figure 13 is a perspective view of the operating lever of the device.

Figure 14 is an enlarged perspective view of the movable abutment member employed to transmit locking force to the ratchet bar to lock the compressor plate of Figure 10 during the operation of the device.

Referring to the drawings, the dispensing

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holder is designated generally at 11 and comprises a housing 12 having the rear wall 13, the parallel side walls 14, and 15 and the generally conical bottom wall 16, the lower portions of the side walls 14 and 15 flaring downwardly in width, as shown at 18 and merging with the relatively short vertical front wall element 19. The housing 12 is preferably formed of transparent material, such as suitably tinted transparent plastic material. Secured to the rear portions of the side walls 14 and 15 are the respective pairs of vertically spaced angle brackets 20 and 21, each angle bracket having the outwardly projecting legs 22 extending parallel to the rear wall 13 of the housing 12 and being rearwardly offset therefrom, as shown in Figure 3. Secured to each leg 22 is a suction cup 23, said suction cup having a shank extending through an aperture formed in the leg 22 and secured to said leg by a plastic nut 24. As shown in Figures 1 to 4, the housing 12 may be secured to a vertical supporting wall surface 25 by engaging the suction cups 23 with said wall surface.

The conical bottom wall 16 of the housing is formed with the rubber lined aperture 26 adapted to sealingly receive the threaded neck 27 of a tube of paste material 28 with said tube in the inverted position shown in Figure 5. Integrally formed with the bottom wall 16 is the depending tubular conduit 29, and secured to said conduit 29 is the discharge conduit 30 in which is rotatably mounted the transversely apertured horizontal shaft member 31. The shaft member 31 is provided with the flattened external handle portion 32 for manually rotating said shaft member, and the aperture 33 in the shaft member is of elongated, relatively flat shape, whereby the paste material discharged therethrough will take the form of a flat ribbon. It will be readily apparent from Figure 5 that when the shaft member 31 is rotated to a position wherein the slot 33 is horizontal, the discharge conduit 30 is closed and the outlet conduit 29 of bottom wall 16 is sealed. When the shaft member 31 is rotated to a position wherein the slot 33 is vertical, material may be discharged through said slot responsive to squeezing pressure exerted on the paste tube 28.

Integrally formed with the upper portion of the rear wall 13 and the rear portions of the side walls 14 and 15 is the horizontally extending transverse rib 34. Extending slidably through an aperture 35 formed in the rear portion of bottom wall 16 and through a central aperture 36 formed in the rib 34 is the vertical ratchet bar 37. The ratchet bar 37 is formed at its top end with the reduced stud portion 38 which extends slidably through aperture 35 and is surrounded by a coil spring 39. Adjustably secured to the top portion of the stud 38 is a bearing collar 40. The spring 39 bears at its top end on the bearing collar 40 and at its lower end on the rib 34, bias-

ing the ratchet bar 37 upwardly. The degree of biasing force may be regulated by changing the position of the collar 40 on the stud 38, and for this purpose, said stud may be provided with a plurality of openings to receive the transverse securing pin employed to lock the collar 40 to the stud 38, the openings being vertically spaced along the stud. Pivotally connected to the bottom end of the ratchet bar 37 is the lever 41, said lever being formed with a camming portion 42 spaced from its pivoted end, said camming portion being defined by providing a bend 43 in the lever, whereby the handle portion of the lever, shown at 44, extends at an obtuse angle to the yoke portion thereof, shown at 45, said yoke portion being pivotally connected to the bottom end of the ratchet bar 37. As shown in Figure 1, the handle 44 normally extends outwardly and downwardly relative to the housing 12. Rigidly secured to the lower portion of the side wall 14 of the housing above the lever 41 is an outwardly projecting arm 46. Upward force may be exerted on the handle 44 by grasping said handle and the arm 46 between the fingers of one hand and exerting squeezing pressure, whereupon the lever 41 will be rotated clockwise, as viewed in Figure 1, and the camming portion 42 of the lever will engage the under surface of the bottom wall 16 and pivot thereon, exerting a downward force on the ratchet arm 37. The bottom surface of the wall 16 is provided with a lug 48 against which the portion 42 abuts when said lever is rotated upwardly as above described.

Designated at 49 and 50 are a pair of flexible plate members, of spring metal or the like, formed at their lower corners with the lug elements 51, 51 and 52, 52, as shown in Figure 12, said lug elements being receivable in recesses provided in the bottom wall 16 and serving to frictionally retain the plate members 49 and 50 in securement with said bottom wall in the positions thereof shown in Figure 5. The flexible plate member 49 is formed at its top end with a downwardly turned flange 53 in which the top edge of the plate member 50 is received, so as to pivotally connect the top ends of plate members 49 and 50. As shown in Figure 5, the tube of paste material 28 is receivable between the plate members 49 and 50. Designated at 54 is a generally rectangular slotted compressor plate which is slidably receivable between the side walls 14 and 15 and which has the transversely extending slot 55 engageable over the flexible plate members 49 and 50. The rear wall 13 is formed with the vertical central slot 56 and the compressor plate 54 is formed with the generally T-shaped head 57 which is slidably engaged with the rear wall 13 through the slot 56. The compressor plate 54 is formed at its rear corner portions with the upstanding abutment lugs 58, 58 which slidably engage the inside corners of the housing 12 to support the compressor plate 54 in a horizontal position. The compressor plate is formed centrally between the lugs 58, 58 with the slot 59 which slidably receives the ratchet bar 37. Designated at 60 is a rectangular ring member which is slidably engaged on the top surface of the compressor plate 54 around the slot 59 and extends through the slot 56, as shown in Figure 6. Rigidly secured on the rear portion of the compressor plate 54 is the flanged pressure block 61 which is received in ring 60 and is provided with a stem 62 extending slidably through an aperture 63 formed in the rear arm of the ring 60. A coiled spring 64 surrounds the stem 62 and biases the rectangular ring 60 forwardly against the notched surface of the ratchet bar 37, as shown in Figure 8.

As shown in Figure 5, the slot 55 flares downwardly so that a wedging action is exerted on the flexible plate members 49 and 50 as the pressure plate 54 is moved downwardly.

In using the device, the holder is first secured to the wall 25 with the flexible plate members 49 and 50 removed and with the pressure plate 54 in its uppermost position. The tube of paste material 28 is then mounted in the holder with its neck 27 sealingly engaged with the conduit 29 in the inverted position of the collapsible tube 28 shown in Figure 5. The flexible plate members 49 and 50 are then inserted through the slot 55 into positions on opposite sides of the tube 28, the lugs 51, 51 and 52, 52 of the plate members 49 and 50 being frictionally engaged in the recesses provided in the bottom wall 16 for receiving same and the flange 53 being hooked over the top edge of the plate member 50 in the manner shown in Figure 5. The lever 41 is then rotated upwardly by exerting squeezing pressure between arm 46 and handle 44, as above described, for a sufficient number of times to move the compressor plate 54 downwardly into a position wherein it exerts squeezing force on the flexible plate members 49 and 50. When the handle 44 is rotated upwardly, the ratchet bar 37 moves downwardly, carrying the compressor plate 54 therewith. When the manual squeezing pressure on arm 46 and handle 44 is released, the spring 39 expands, elevating the ratchet bar 37. In setting the compressor plate 54 in position, it is merely necesary to manually depress said compressor plate to a position wherein it begins to exert squeezing pressure on the flexible plates 49 and 50, and consequently is frictionally engaged with said plates at the slot 55. Subsequently, when the lever 41 is rotated upwardly, the frictional engagement between slot 55 and the flexible plate members 49 and 50 will retain the pressure plate 54 in a relatively fixed position and allow the ratchet bar 37 to slip upwardly when the squeezing pressure on arm 46 and handle 44 is released. When the lever 41 returns to its normal position, the ratchet bar 37 will be in an elevated position and will have moved upwardly one or more notches relative to the compressor plate 54. Consequently, on the next upward stroke of the lever 41, the ratchet bar 37 will force the compressor plate 54 downwardly and increase the squeezing pressure on the flexible plates 49 and 50. The successive inward deflections of the flexible plates 49 and 50 result in the building up of squeezing pressure therebetween on the collapsible tube 28, whereby paste material will be discharged through the valve slot 33 when the shaft 31 is rotated to a position wherein said valve slot is vertical, as shown in Figure 5.

Since the length of stroke of the ratchet bar 37 is determined by the position of the stop collar 40 on the stud 38, and since the lower end of spring 39 bears on the top shoulder of the main portion of ratchet bar 37 as well as on the rib 34, the collar 40 may be adjusted to provide either a small or a large quantity of paste material dispensed with each stroke of the lever 41.

After the paste tube 28 has been emptied, the ring 60 may be manually moved forward and the compressor plate 54 may be elevated to its uppermost position, allowing the flexible plate members 49 and 50 to be removed and allowing the ex-

hausted collapsible tube 28 to be taken out of the holder. The holder may then be washed, if so desired, and a new tube of paste material may be placed therein.

While a specific embodiment of an improved dispensing holder for collapsible tubes of paste material has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a dispensing holder for a collapsible tube having a discharge neck, a housing adapted to be secured to a support, said housing having an end wall provided with an opening to accommodate the discharge neck of a tube with an end of the tube supportably engaging said end wall, a pair of spaced and opposed flexible plates engaged at one end with said end wall and convering toward the other end of said flexible plates and arranged to receive a collapsible tube therebetween, a ratchet bar extending lengthwise of said housing and mounted thereon for endwise movement relative to the housing, a compressor plate having an opening slidably receiving said ratchet bar and guided by contact with said housing, said compressor plate having a slot slidably receiving said flexible plates, said slot being narrower than the space between the spaced ends of the flexible plates, said opening of the compressor plate defining an edge engageable by teeth of said ratchet bar, and operating means on said ratchet bar and operatively engageable with the housing end wall for moving said ratchet bar endwise relative to the housing and said compressor plate and moving said compressor plate toward said housing end wall and compressing a collapsible tube present between said flexible plates.

2. In a dispensing holder for a collapsible tube having a discharge neck, a housing adapted to be secured to a support, said housing having an end wall provided with an opening to accommodate the discharge neck of a tube with an end of the tube supportably engaging said end wall, a pair of spaced and opposed flexible plates engaged at one end with said end wall and converging toward the other end of said flexible plates and arranged to receive a collapsible tube therebetween, a ratchet bar extending lengthwise of said housing and mounted thereon for end wise movement relative to the housing, a compressor plate having an opening slidably receiving said ratchet bar and guided by contact with said housing, said compressor plate having a slot slidably receiving said flexible plates, said slot being narrower than the space between the spaced ends of the flexible plates, said opening of the compressor plate defining an edge engageable by teeth of said ratchet bar, and operating means on said ratchet bar and operatively engageable with the housing end wall for moving said ratchet bar end wise relative to the housing and said compressor plate and moving said compressor plate toward said housing end wall and compressing a collapsible tube present between said flexible plates, spring means acting between said housing and one end of said ratchet bar slidably urging said ratchet bar away from said housing end wall.

3. In a dispensing holder for a collapsible tube having a discharge neck, a housing adapted to be secured to a support, said housing having an end wall provided with an opening to accommodate the discharge neck of a tube with an end of the tube supportably engaging said end wall, a pair of spaced and opposed flexible plates engaged at one end with said end wall and converging toward the other end of said flexible plates and arranged to receive a collapsible tube therebetween, a ratchet bar extending lengthwise of said housing and mounted thereon for end wise movement relative to the housing, a compressor plate having an opening slidably receiving said ratchet bar and guided by contact with said housing, said compressor plate having a slot slidably receiving said flexible plates, said slot being narrower than the space between the spaced ends of the flexible plates, said opening of the compressor plate defining an edge engageable by teeth of said ratchet bar, and operating means on said ratchet bar and operatively engageable with the housing end wall for moving said ratchet bar end wise relative to the housing and said compressor plate and moving said compressor plate toward said housing end wall and compressing a collapsible tube present between said flexible plates, and other spring means acting between said ratchet bar and said compressor plate and yieldably urging the teeth of the ratchet bar into engagement with said opening edge.

4. In a dispensing holder for a collapsible tube having a discharge neck, a housing adapted to be secured to a support, said housing having an end wall provided with an opening to accommodate the discharge neck of a tube with an end of the tube supportably engaging said end wall, a pair of spaced and opposed flexible plates engaged at one end with said end wall and converging toward the other end of said flexible plates and arranged to receive a collapsible tube therebetween, a ratchet bar extending lengthwise of said housing and mounted thereon for end wise movement relative to the housing, a compressor plate having an opening slidably receiving said ratchet bar and guided by contact with said housing, said compressor plate having a slot slidably receiving said flexible plates, said slot being narrower than the space between the spaced ends of the flexible plates, said opening of the compressor plate defining an edge engageable by teeth of said ratchet bar, and operating means on said ratchet bar and operatively engageable with the housing end wall for moving said ratchet bar end wise relative to the housing and said compressor plate and moving said compressor plate toward said housing end wall and compressing a collapsible tube present between said flexible plates, spring means acting between said housing and one end of said ratchet bar slidably urging said ratchet bar away from said housing end wall, said spring means comprising means adjustable end wise of said ratchet bar for predetermining the length of an end wise movement of said ratchet bar relative to the housing upon operation of said operating means.

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