Feb. 21, 1928. 1,660,035

F. W. FITCH

DISPENSER

Filed Feb. 7, 1927

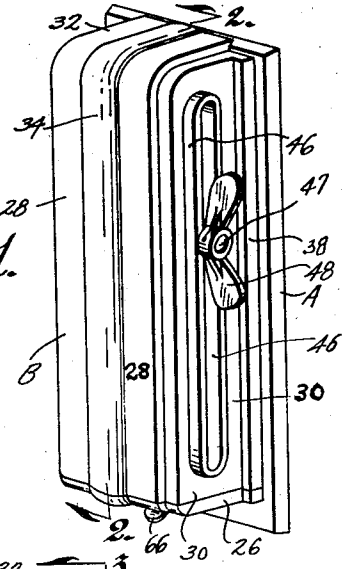


Fig. 1.

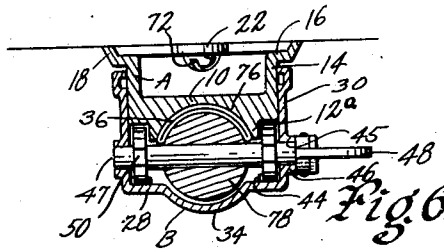


Fig. 6.

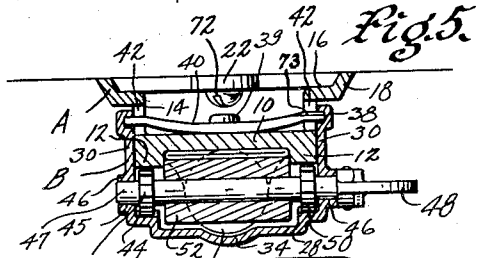


Fig. 5.

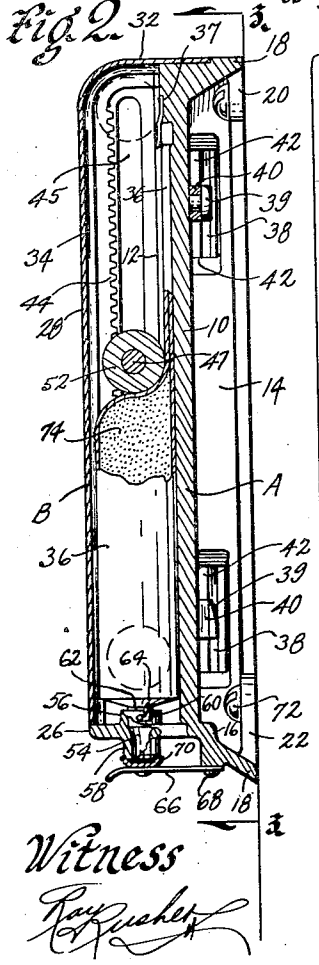


Fig. 2.

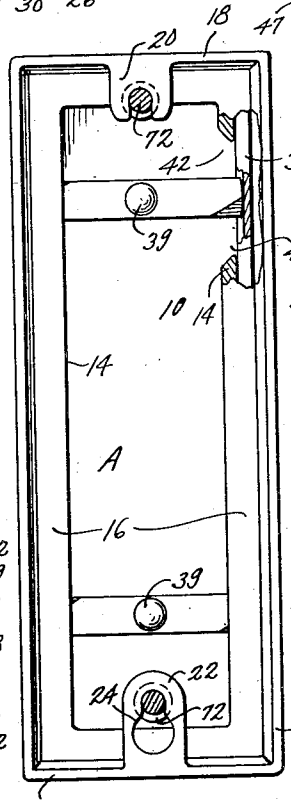


Fig. 3.

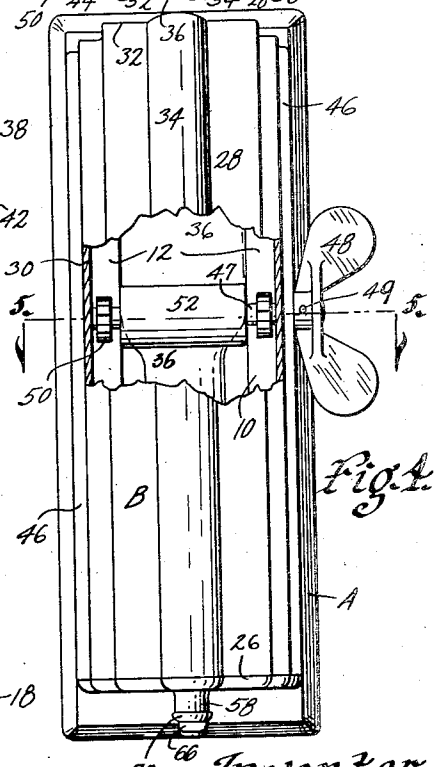


Fig. 4.

Witness

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UNITED STATES PATENT OFFICE.

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DISPENSER.

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My invention has to do in a general way, with an apparatus for dispensing a product from a collapsible tube. In its embodiment as here disclosed, it is my purpose to provide a dispenser of simple and efficient construction for supporting a tube of the type adapted to contain soap or the like, which apparatus has operating parts whereby the tube may be collapsed for the purpose of forcing the contents therefrom in relatively small quantities.

More particularly it is my object to provide a novel and convenient means for receiving and holding a tube, the device being adapted for quick and easy manipulation for inserting or removing the tube and having an efficient means for compressing the tube for forcing the contents therefrom.

With these and other objects in view my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1, is a perspective view of a dispenser embodying a form of my invention.

Figure 2, is a detail sectional view taken on the line 2—2 of Figure 1.

Figure 3, is a detail sectional view taken on the line 3—3 of Figure 2.

Figure 4, is a front elevation of the dispenser, parts being broken away and parts being shown in section for illustrating certain features of the tube collapsing mechanism.

Figure 5, is a transverse sectional view taken on the line 5—5 of Figure 4 and

Figure 6, is a view similar to that of Figure 5 of a slightly modified form of my dispenser.

My dispenser comprises a base indicated generally in the accompanying drawings by the reference character A and a case B. The base comprises a rigid base member 10 having on its front surface at its side edges, opposite parallel forwardly projecting flanges 12. At its back the base has at its side edges the rearwardly extending flanges 14.

The flanges 14 are formed at their rear edges with laterally projecting flanges 16 terminating in the rearwardly inclined flanges 18. These flanges all preferably extend entirely around the periphery of the base.

Extending downwardly from the rear edge of the upper flange 18 is a bifurcated ear 20. Likewise at its rear edge the lower flange 18 has an upwardly extending ear 22 formed with the key hole slot 24.

Near the lower end of the base A is a forwardly projecting supporting shelf 26. The case A has the front wall 28, side walls 30 and top wall 32 and is opened at its lower end and back. The top wall and front wall are preferably formed with a central slightly channeled portion 34 which serves as a reinforcing means.

The channel shaped portion 34 of the wall 28 also serves to fit and hold in place the tube 36. The side walls 30 are provided at their rear edges with opposite inwardly opening channels 38 as shown for example in Figure 5.

For fastening the case on the base I provide the following means. On the rear face of the base member 10, I mount two spring members 40 by means of pivot pins or rivets 39 as shown in Figure 5. The central parts of the springs 40 fit snugly against the base member 10 and the ends thereof are inclined normally outwardly and away from the base member 10 as clearly shown in that figure.

When the springs 40 are in horizontal position, they project laterally far enough to extend through suitable elongated slots 42 in the flanges 14, these slots being illustrated in Figures 2 and 5 and to extend into the channels 38.

In installing the case on the base, the springs 40 are swung to position where the ends do not project through the slots 42. The case is placed in a position with its side walls overlapping the base member 10 and flanges 14, and the springs 40 are then rotated until their ends project through the slots 42 and into the channels 38 of the case. The case then rests on the shelf 26 and will be then snugly held in place.

On the inner face of the front wall 28 of the case B near the side edges thereof, there are provided the longitudinally arranged toothed tracks or rack bars 44. The side

walls 30 of the case B are provided with vertically elongated slots 45 around the edges of which are the outwardly projecting flanges 46.

A transverse shaft 47 is extended across the casing with one end received in one of the slots 45, the other end projecting through the other slot 45 as illustrated in Figure 5. One end of the shaft 47 is provided with a wing nut 48 which is fastened to the shaft by a pin 49 as shown in Figure 4.

Fixed on the shaft 47 in mesh with the rack bars 44, are pinions 50 which are located adjacent to the respective sides of the casing for thus preventing undue lengthwise movement of the shaft 47. The shaft 47 has rotatably mounted on it a roller 52, as shown for instance in Figures 2, 4 and 5, which is of such length as to project snugly but without friction for a short distance into the channel formed by the base member 10 and its flanges 12 as perhaps best shown in Figure 5.

It will be observed that by rotating the wing nut 48, the shaft 47 will be rotated for thus rotating the pinions 50 and causing the shaft and the roller carried thereby to travel upwardly or downwardly in the casing.

Ordinarily before the beginning of the use of the device, the parts are adjusted until the roller is at the top of the casing as shown in dotted lines (Figure 2).

The shelf member 26 is provided with a hole 54 from which a tubular neck 56 extends upwardly and a tubular discharge tube 58 projects downwardly. The neck 56 may be formed on opposite sides with the bayonet joint slots 60. It could, of course, be threaded. The collapsible tube 36 may have the neck 62 provided with pins 64 to coact with bayonet joint slots 60.

It will, of course, be understood that the neck on the tube 36 and the neck 56 might have coacting screw threads. A closure device for the lower end of the discharge tube 58 includes a spring arm 66 pivoted at 68 (see Figure 2) on the base A. At the free end of the arm 66 is a closure member 70 adapted to fit over the lower end of the tube 58 and close the same.

The outer end of the spring arm 66 may be grasped and the arm 66 sprung and moved on its pivot for removing the closure member 70 from the lower end of the tube 58.

I will now describe the practical assembling and operation of my improved dispenser. On the wall or bracket or other support where the dispenser is to be mounted, I place two headed screws or the like 72 spaced apart a proper distance to coact with the ears 20 and 22.

The user of the dispenser takes a collapsible tube 36 filled with a soap or the like 72 of a creamy consistency or indeed of any consistency which would permit the proper collapsing of the tube, and connects the neck of the tube 36 with the neck 56 on the shelf 26 of the base A. The case B is then mounted on the base A by means of the springs 40 in the manner already described.

It will be understood that the roller 52 should be adjusted to the top of the case before the case is mounted on the base. The closure member 70 should be adjusted to closed position. The entire dispenser is then hung on the screws 72 by slipping the lower part of the slot 24 over the lower screw and lowering the dispenser until the shanks of the screws are received in the narrow part of the slot of the ear 22 and between the arms of the bifurcated ear 20 respectively.

The dispenser is then lowered ready for use. When a barber or other person desires to use a quantity of soap from the container, he swings the spring arm 66 around to position where the closure element 70 is clear of the discharge tube 58. He then clasps the wing nut 48 and rotates it to cause the pinions 50 to travel down the racks 44 whereupon the roller 52 will roll down the tube 36, flattening the tube as illustrated in Figure 2 and forcing the contents of the tube downwardly and out through the discharge tube 58. A spring 37 prevents the upper end of the tube from following the roller.

The amount of soap taken from the collapsible tube may, of course, be whatever is desired. When the tube has been entirely flattened and its contents discharged, it will be seen that a fresh tube 36 may be very conveniently and easily substituted for the used one.

The springs 40 are simply rotated on their pivots 39 until their ends clear the channel shaped member 38 whereupon the case can be removed from the base. It may be noted in this connection, that the springs 40 may be bevelled as at 73 for more convenient manipulation.

After the case has been removed, the empty tube 36 may be discharged from the neck 56 and a full tube substituted therefor. The roller 52 is then adjusted to the top of the case B and the case B may be again assembled on the base A whereupon the dispenser is ready for use for a period, as long as the contents of the collapsible tube may last.

In Figure 6 I have shown a slightly modified form of my invention in which the base A instead of being provided on the front face of its portion 10 with the flanges 12 and the channel between them with its right angled walls, is provided with the flanges 12a and a channel 76 which is concave from side to side and which fits the ordinary tube 36.

One difficulty arises in the attempt to make a satisfactory device for dispensing

the contents of a collapsible tube, because tubes vary somewhat in material and thickness.

It will be seen that when the roller 52 travels down the tube it will normally flatten the tube against the base in such manner as to force all of the contents downwardly. If there should be a thickened portion on the tube on account of a drop of solder or for any other reason, some difficulty might occur if the parts were all rigidly connected.

It will be noted, however, that on account of the mounting of the case B on the base A by means of the springs 40, a variation in the thickness of the collapsible tube will be automatically yieldingly taken care of because the case can be forced away from the base a little by springing the springs 40.

There is thus provided in the means for mounting the case on the base and in the structure wherein the roller is supported on the case and the collapsible tube is flattened against the base, a simple and convenient and efficient construction for allowing for variation in the thickness of the tube.

The case B of the modified form of the device is the same as the case B already described except that instead of the roller 52 on the shaft 47, there is provided a ball 78. Otherwise the construction and operation of the parts of the modified device shown in Figure 6 are substantially the same as the construction and operation of the device I have already described.

A dispenser of this kind has a number of important advantages. It is small and neat. It can be used for dispensing from collapsible tubes. It can be conveniently mounted upon any support where two spaced headed members can be provided. It is so constructed that it is easily manipulated for inserting or removing the soap tubes.

As a result of many experiments I have found that the kind of apparatus here shown for collapsing the tube is efficient as well as being simple and inexpensive. I believe that the roller 52 or ball 78 should be free to rotate on the shaft rather than be fixed thereto.

It will be understood that the drawings and description herein are intended to illustrate and explain forms in which my invention may be practically used but it is not my intention to limit myself to the particular forms here shown but it is my purpose to cover by my claims any other forms either in the way of modifications or the use of equivalent features which may be easily included within the scope of such claims.

I claim as my invention:

1. In a dispenser means for supporting a collapsible tube in discharging position including a substantially rigid base, a casing carrying a rotary element, means for yieldingly mounting said casing on said base and mechanism for imparting movement to the rotary member for causing it to travel for squeezing the tube between the rotary member and the base.

2. In a dispenser, a supporting member, a second member yieldingly mounted upon the supporting member and means carried by the second member for collapsing a tube against said supporting member for ejecting the contents of the tube.

3. In a dispenser, a base having at its lower end a shelf for supporting a collapsible tube, a case, means for yieldingly mounting the case on the base, a rotary member carried by the base and means for actuating said rotary member for causing it to engage a tube so mounted at the closed end of the tube and to move toward the discharge end of the tube for collapsing the tube and ejecting the contents thereof.

4. In a dispenser, a base having side flanges, a case mounted on said base and having members overlapping said side flanges and provided with inwardly opening channels, said side flanges having slots, a spring member pivoted on the base and having ends adapted to pass through said slots and into said channels for yieldingly securing the case to the base, a shaft mounted to slide on said case and projected at one end through said case, a roller on said shaft within said case, means outside of the case for imparting rotation to said shaft.

5. In a dispenser, a supporting base element, a yieldingly mounted casing element on the base, a rotary device supported on one of said elements for travel lengthwise thereof for collapsing a paste tube against the other of said elements.

Des Moines, Iowa, January 20, 1927.

FRED W. FITCH.