July 31, 1934. J. E. TULIN 1,968,578

DISPENSER FOR COLLAPSIBLE TUBES

Filed Jan. 12, 1934

Fig. 1.

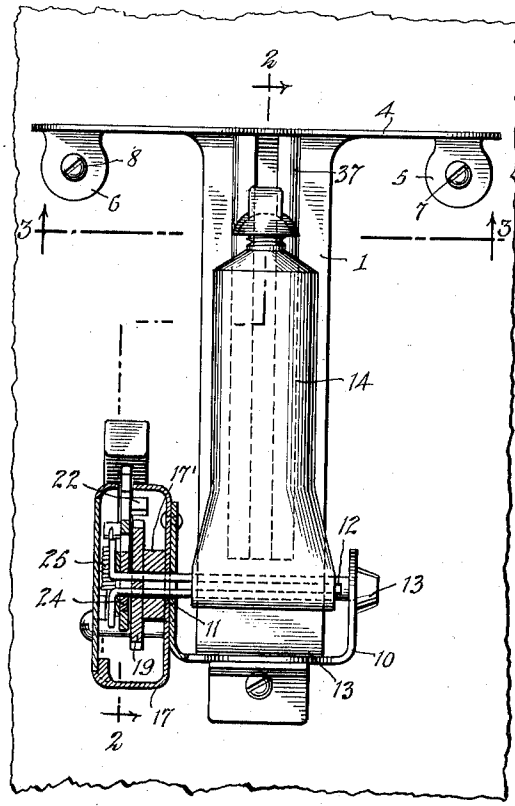


Fig. 2.

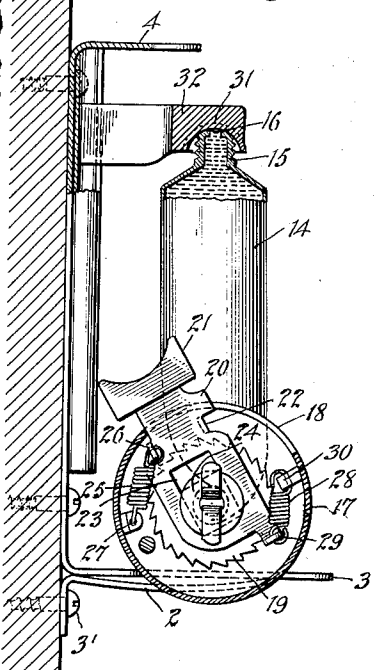


Fig. 3.

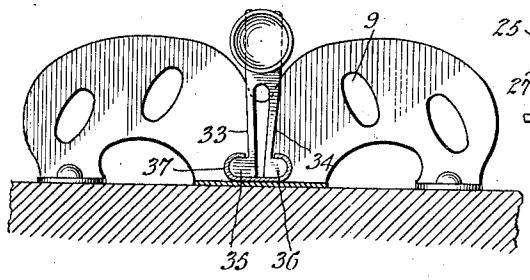
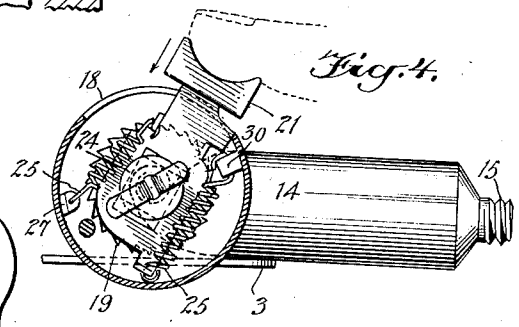


Fig. 4.



WITNESSES

Geo. Mayer

A. L. Kitchin

INVENTOR

John E. Tulin

BY

Munn, Anderson, Stanley, Foster & Liddy

ATTORNEYS

Patented July 31, 1934 1,968,578

UNITED STATES PATENT OFFICE

1,968,578

DISPENSER FOR COLLAPSIBLE TUBES

John E. Tulin, Brooklyn, N. Y.

Application January 12, 1934, Serial No. 706,415

5 Claims. (Cl. 221—60)

This invention relates to dispensers for collapsible tubes and has for an object to provide an improved construction which may be used for dispensing tooth pastes, shaving creams and other substances used in collapsible tubes, the structure being such that normally the tube is maintained closed or sealed but may be quickly and automatically actuated for discharging a desired quantity of the contents of the tube.

Another object of the invention is to provide an improved dispensing device for collapsible tubes wherein the tube is supported in a given position when not in use, and in which a spring held follower coacts to maintain the tube closed and substantially sealed.

A further object of the present invention is to provide a dispensing device for collapsible tubes wherein the tube is normally held in a vertical position with the opening therein covered, but which may be quickly moved to a substantially horizontal position and then acted on to intermittently discharge certain measured quantities of the material contained in the tube.

A still further object of the invention is to provide a dispensing device for collapsible tubes wherein a manually actuated, intermittent feed is presented and connected to the tube to cause the tube to swing from one position to another, and then intermittently discharge predetermined quantities of substance from the tube, the intermittent feed being such that it may be readily actuated once or a large number of times and produce substantially the same quantity of discharge at each operation.

In the accompanying drawing—

Figure 1 is a front view of a dispensing device disclosing an embodiment of the present invention, the same being shown applied to a wall ready for use, part of the device being shown in section to better illustrate certain detailed parts;

Figure 2 is a sectional view through Figure 1 approximately on the line 2—2;

Figure 3 is a sectional view through Figure 1 on the line 3—3;

Figure 4 is a view similar to the lower part of the structure shown in Figure 2, but with the tube and intermittent feed moved to a different position.

Referring to the accompanying drawing by numerals, 1 indicates a base which acts as a support for the remaining parts of the device, except the spring 2 which is secured in place on the wall by suitable screws 3'. Base 1 as clearly shown in Fig. 2, at the lower end extends vertically so as to present a platform 3 at the lower end, and an upper platform 4 having apertured ears 5 and 6 which accommodate the supporting screws 7 and 8. The upper platform 4 is provided with a number of openings 9 for the reception of tooth brushes or other articles. The platform 3 has side upstanding ears 10 and 11, ear 10 being apertured for receiving one end of the winding member 12, which winding member is a bifurcated bar having a head 13. This bar is adapted to straddle the lower end of the collapsible tube 14 and then be rotated so as to wind the tube thereon. During the winding operation the tube presses against the platform 3 and therefore the tooth paste or other ingredient of the tube is squeezed therefrom through the usual neck 15 which has a suitable opening 16. The upstanding ear 11 is riveted or otherwise rigidly secured to casing 17 formed preferably of sheet metal and provided with a slot 18. Shaft 12 extends through a suitable aperture in the flange 11 and also through casing 17 to a point therein as shown in Fig. 1. The ends of the shaft are bent over to a right angled position so that it will be held in place and in turn will hold in place certain of the intermittent feeding mechanism arranged within the casing 17. As shown in Fig. 1, there is provided a washer 17' for spacing the remaining parts from the wall and casing 17, and adjacent this washer 17' there is provided a ratchet wheel 19. Ratchet wheel 19 has two openings so that the respective bifurcated portions of shaft 12 may extend therethrough. By reason of this construction whenever the ratchet wheel 19 is moved the shaft 12 will be moved to the same extent and in the same direction.

Coacting with the ratchet wheel 19 and associated parts is a bar 20 extending through the slot 18 and provided with a thumb member 21 exteriorly of the casing 17. Interior of the casing 17 the bar is provided with a turned over portion or spur 22 which is positioned to engage the teeth of the ratchet wheel 19 and move the ratchet wheel when the bar is swung from the position shown in Fig. 2 to that shown in Fig. 4. Bar 20 in addition is provided with an elongated rectangular slot 23 which straddles the bearing washer 24 so that it may slide back and forth but will move with this washer. A spring 25 is connected at 26 to an upstanding ear rigidly secured to casing 11. On the opposite side of the casing there is arranged a second spring 28 which is connected at 29 to an upstanding ear preferably formed integral with bar 20, and at 30 to an upstanding ear welded or otherwise rig-

idly secured to casing 11. These two springs have a tendency to normally hold the parts in the position shown in Fig. 2 and to return the parts to this position whenever permitted.

When it is desired to cause the bar 20 to function it is pressed downwardly as shown in Fig. 2 until the spur 22 engages one of the teeth of the ratchet wheel 19 and is then rotated, for instance, to the position shown in Fig. 4. This will cause the ratchet wheel 19 to rotate and also rod or shaft 12. The first movement in this direction of the parts as just described will cause the tube 14 to be moved to a horizontal position as shown in Fig. 4. It will be understood that the closure member 31 is raised manually before bar 20 is caused to function. After the parts have been moved to the position shown in Fig. 4 bar 20 is released and will quickly and automatically move back to the position shown in Fig. 2, though the tube 14 will remain pressing against the platform 3. The next functioning of the bar 20 will cause the rod or shaft 12 to rotate and wind a certain amount of the tube 14 thereon. This will produce the desired ejecting action so that a certain quantity of the tooth paste or other material in the tube will be ejected therefrom. By repeating this operation successive discharges may be made.

It will be noted that a finger or thumb engages the thumb member 21 and presses down upon the same so that the spur 22 will come immediately into engagement with one of the teeth of the ratchet wheel 19. After this has been done the thumb member is swung over to the position shown in Fig. 4, which will cause the ratchet wheel to partly rotate and carry with it the rod or shaft 12 so as to wind part of the tube 14 thereon. As soon as the parts have been moved to the position shown in Fig. 4 they are released and the springs 25 and 28 will quickly move the parts back to the other end of the slot 18, and will also cause the bar 20 to move outwardly so that all the parts will assume the position shown in Fig. 2, ready for another operation.

It will be understood that the parts may be operated once or a large number of times, as desired. After the desired number of operations has taken place the tube 14 is swung upwardly to a vertical position. During the upward swinging movement of the tube the ratchet wheel 19 will be partly rotated but will present no resistance because the spur 22 is out of engagement therewith. As soon as the tube has been raised to its vertical position the closure member 31 is moved downwardly to close the opening 16, as shown in Fig. 2. The closure member 31 is provided with a cup-shaped outer part 32 which merges into a pair of arms 33 and 34, said arms being more or less resilient and having enlargements 35 and 36 at their outer ends (Fig. 3). The enlargements 35 and 36 slidingly fit in a guide 37. The opening of the guide is such that when the arms 33 and 34 are spread apart to the fullest extent they will not touch the side of the guide but the enlargements 35 and 36 will press against the side portions of the guide and produce a frictional grip so as to hold the closure member 31 in various adjusted positions. When it is desired to move the closure member 31 upwardly and away from the tube 14, the same may be grasped and pulled up against the friction members 35 and 36, but ordinarily the arms 33 and 34 are grasped and pressed together slightly and then moved upwardly, after which they are released and members 35 and 36 lowered to grip or press the sides of the guide 37. The guide 37 is of sufficient length to permit the closure member 31 to slide down as the tube 14 is wound more and more on to shaft 12.

After the tube has been completely wound on shaft 12 so as to have ejected all of the contents of the tube, the head or wing nut 13 is rotated in a reverse direction for unwinding the tube. This may be readily done because the ratchet wheel 19 is disconnected from the other parts and will merely rotate in an idle manner in the reverse direction. After the tube has been completely unwound the lower end is pulled through the bifurcated members of the rod and then the end of a new tube inserted and wound slightly. It is then swung upwardly to the position shown in Fig. 2 and the closure member 31 applied thereto. The device is then in condition for further operation.

I claim:—

1. A dispenser for collapsible tubes, comprising a supporting base, a guide mounted on said base, a closure member slidingly carried by said guide, a shaft adapted to carry a tooth paste tube, and intermittent means acting on said shaft for rotating the same so as to wind said tube thereon, said tube being normally held by said shaft so that said closure member may rest on the discharge end of the tube for closing the same.

2. A dispenser for tooth paste tubes and the like, including a member for supporting and intermittently squeezing the tooth paste tube, a closure member for closing the open end of the tube, the closure member including a head fitting against the tube, a pair of resilient arms extending from the head and a laterally extending friction member arranged at the end of each of the arms, and a guide substantially enclosing said friction members and reacting therewith, to hold the closure member in various adjusted positions.

3. A dispenser for dispensing the contents of collapsible tubes, comprising means for squeezing the tube to cause the contents to be discharged therefrom, a closure member for normally closing said tube, said closure member including a pair of resilient arms, a guide, and means forming part of said arms interlocking with the guide for frictionally holding said closure member in different adjusted positions.

4. A dispenser for collapsible tubes for dispensing the contents thereof, comprising a rotatable shaft, means for supporting said shaft, said shaft having a slot for the reception of one end of the tube to be collapsed, a ratchet wheel connected to said shaft so as to rotate therewith, a sliding and rotatable bar arranged adjacent the ratchet wheel, and a spur extending from said bar positioned to be moved into engagement with the ratchet wheel when the bar is slid to one extreme position, said bar being rockable whereby when said spur is engaging said ratchet wheel and then rocked said shaft will be rocked to the same extent to produce a winding action in respect to said tube.

5. A dispenser for dispensing the contents of a collapsible tube by winding the tube on a shaft, said dispenser including a shaft formed with an opening for receiving the end of the tube to be collapsed, means for rotatably supporting said shaft, a casing supported by said means, said shaft extending into said casing, a ratchet wheel within the casing connected with said shaft so as to rotate therewith, a rocking and sliding bar mounted on said shaft and extending through the casing so as to be manipulated, a spur ex-

tending from said shaft positioned to interlock with the teeth of said ratchet wheel when the bar has been slid in a given direction, and a pair of springs acting on the casing and on the bar for normally holding the bar in a neutral position, said bar being adapted to be slid from said neutral position to an operative position and then swung against the action of said springs for producing a radial movement along said shaft, said casing having a slot for limiting the rocking movement of said bar.

JOHN E. TULIN.