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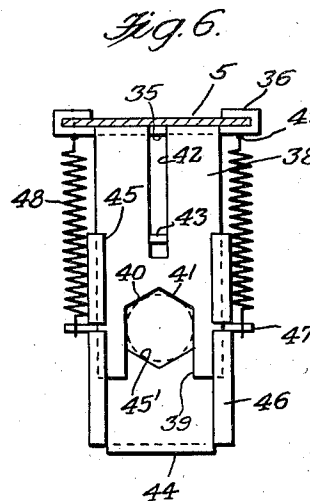
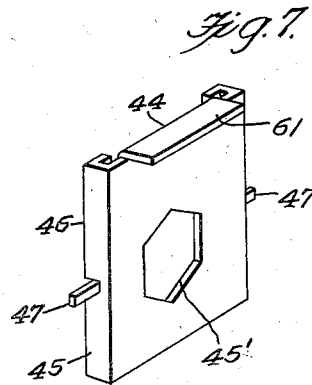
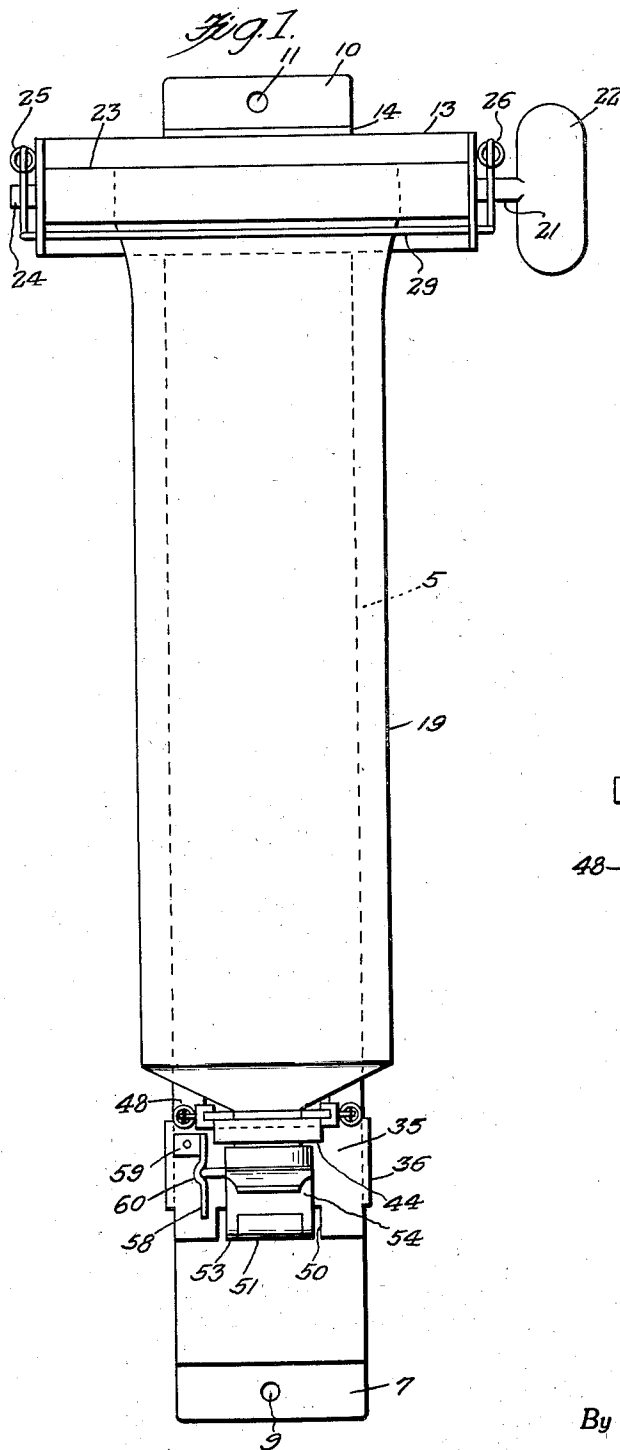
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COLLAPSIBLE TUBE HOLDER

Filed Feb. 25, 1933

3 Sheets-Sheet 1



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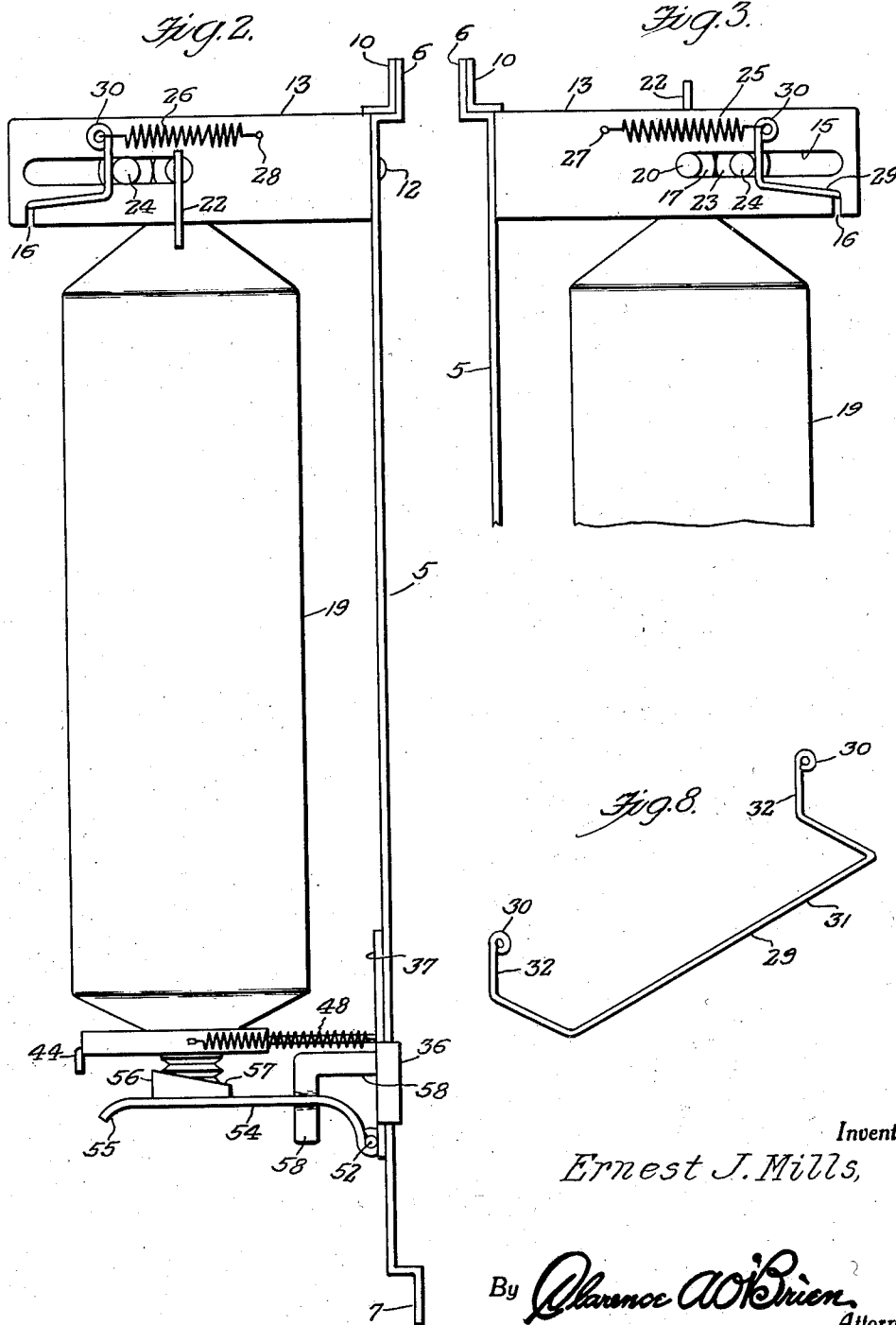
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3 Sheets-Sheet 2



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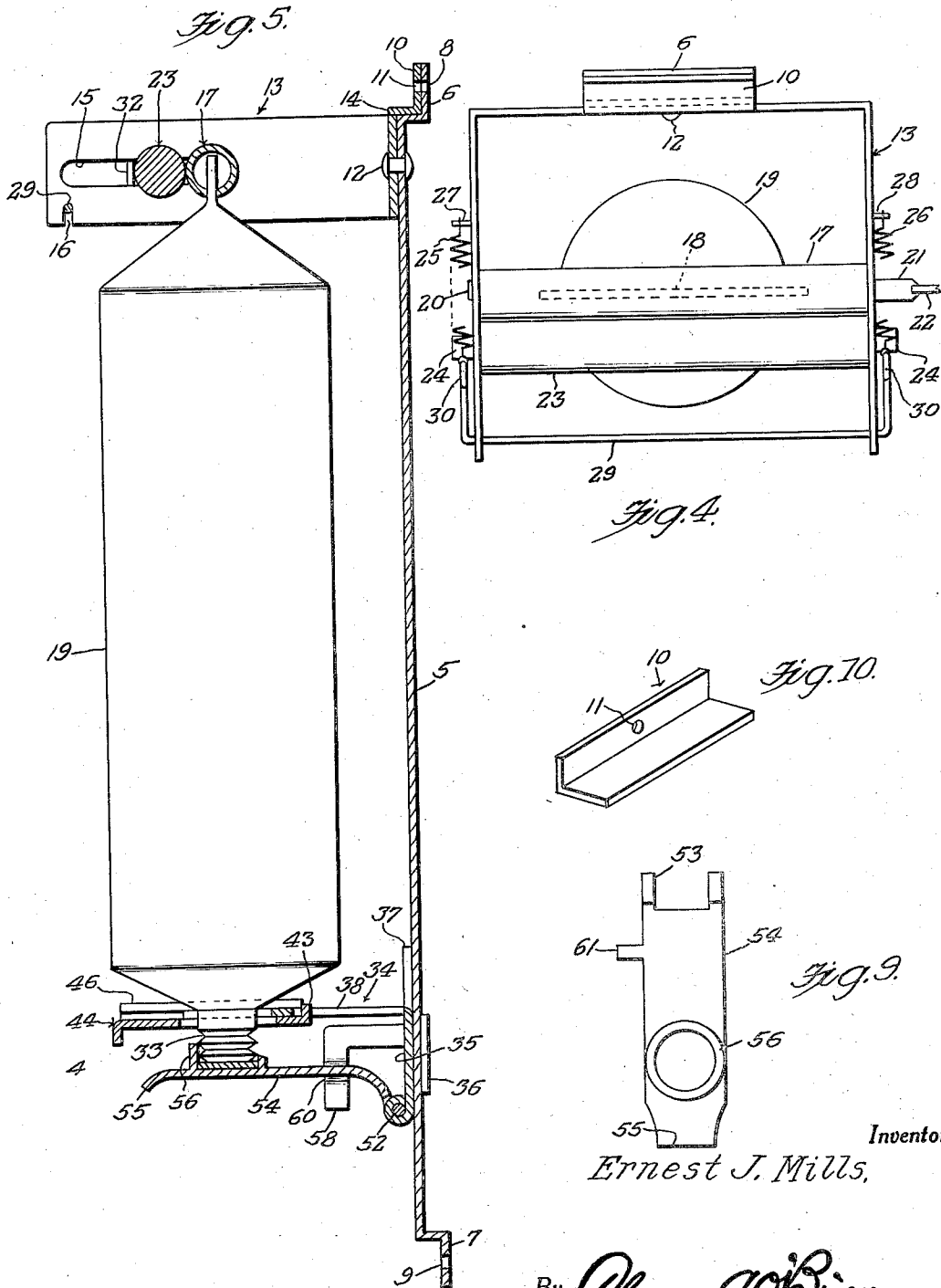
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3 Sheets-Sheet 3



UNITED STATES PATENT OFFICE

2,008,462

COLLAPSIBLE TUBE HOLDER

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Application February 25, 1933, Serial No. 658,591

4 Claims. (Cl. 221-60)

My invention relates generally to holders for collapsible containers, such as collapsible tubes for containing tooth paste, shaving cream, and other viscous fluid, and particularly to holders of this type incorporating means for collapsing the tube so as to expel or dispense the contents as needed.

An important object of my invention is to provide a holder of the type described which is not only simple and inexpensive in structure, but which holds and operates upon a collapsible tube in such a way as to evenly and smoothly effect and control the dispensing of the contents of the tube as required.

It is also an important object of my invention to provide a device of the character described above which has a novel arrangement and formation of parts which enables quickly and easily removing a discharged tube and installing a fresh tube.

Other objects and advantages of my invention will be apparent from a reading of the following description in connection with the drawings, wherein for purposes of illustration I have shown a preferred embodiment of my invention.

In the drawings:—

Figure 1 is a front elevational view of the embodiment showing an undischarged collapsible tube installed thereon.

Figure 2 is a side elevational view taken from the right of Figure 1.

Figure 3 is a side elevational view of the upper portion of the embodiment taken from the left in Figure 1.

Figure 4 is a top plan view of Figure 1.

Figure 5 is a transverse vertical sectional view taken through Figure 1 at one side of the collapsible tube.

Figure 6 is a horizontal sectional view taken through the lower part of Figure 1 and disclosing the tube neck holding means.

Figure 7 is a perspective view of a part of the tube neck holding means.

Figure 8 is a perspective view of a portion of the roller tensioning means.

Figure 9 is a top plan view of the swingable tube neck closure.

Figure 10 is a perspective view of a bracket member.

Referring in detail to the drawings, wherein like numerals refer to like parts, throughout the same, the numeral 5 refers generally to a vertical elongated flat plate which forms the base of the embodiment and has rearwardly offset end portions 6, 7 provided with attaching means receiving open-

ings 8, 9 whereby the base may be secured to a wall or the like. A reinforcing bracket member 10 of L-shaped cross section has an attaching means receiving opening 11 which is to be registered with the opening 18 in the upper offset portion 6 so that the sides of the bracket member engage and conform to the front of the side of the offset portion 6 for reinforcing the offset portion 6.

Attached by a rivet or similar device 12 passing through the base 5 near the offset portion 6 is a U-shaped bracket generally designated 13 which is formed of flat material in the form indicated in Figure 4, and whose bight portion is traversed by the securing device 12 whereby the bight portion is secured to the front face of the base 5 at the place indicated. It is to be observed that a portion of the bracket member 10 extends sufficiently forwardly as indicated at 14 to engage the upper edge of the bight portion of the bracket 13 and thereby prevent rocking of the bracket 13.

In each of the arms of the bracket 13 is a horizontal slot 15 which extends almost to the outer end of the arm. Below the outer end of each slot 15 is a small notch 16 formed in the lower edge of the arm. Slidably and rotatably mounted between the arms of the bracket 13 is a hollow roller 17 having a longitudinal slot 18 in one side for receiving the "chisel" end of the collapsible container 19. The roller 17 has a pin 20 at its left hand end which is rotatable and slidable in the slot in the left hand arm of the bracket 13, while a key member 21 projects from the right hand end of the roller 17 and forms the right hand bearing in the slot 15 in the right hand arm of the bracket 13. The finger piece 22 is provided of sufficient size to afford the necessary leverage for easily rotating the roller 17 for squeezing out the contents of the tube.

Similarly rotatably and slidably supported by the bracket 13 and forwardly of the roller 17 is a solid roller 23 having the pins 24 working in the slots 15.

Means for pushing the solid roller 23 rearwardly against the roller 17 and pushing the roller 17 against the rear ends of the slots 15 comprises helical springs 25, 26 which have their rear ends anchored as indicated at 27, 28 to the outer sides of the arms of the bracket 13, and have their front ends anchored in eyes 30 formed on the ends of the arms of a U-shaped rod 29 which has its long straight bight portion 31 removably inserted in the notches 16 in the lower edges of the arms of the bracket 13. The arms of the U-shaped rod are L-shaped and when the rod is in position in

the notches 16, the L-shaped arms extend outside of and along the arms of the bracket 13 as particularly well shown in Figures 2 and 3. The foot portions 32 on the L-shaped arms have the eyes 5 30 formed on their free ends and to which the springs 25 and 26, respectively, are attached. The foot portions bear forcibly against the pins 24 of the idler roller 23 so as to push this roller rearwardly with sufficient force to produce the 10 desired flattening of the tube as the tube is wound on the roller 17.

As the roller 17 is rotated by the key in a clockwise direction, as viewed in Figure 2, the "chisel" end of the collapsible tube 19 will be drawn between the rollers so that the tube 19 will be compressed and the contents thereof squeezed controllably from the threaded neck 33 of the tube. 15

The mechanism I provide for cooperating with the discharge end of the collapsible tube functions to preserve the vertical and lateral alignment of the tube at all times, so that an even collapsing of the tube is assured as well as smooth action of the parts, so that substantially all of the contents of the tube may be availed of without waste and in the quantities desired, without causing 20 either the holder or any other part or the container itself to become mangled or disarranged in any way so that easy removal of the tube as well as the replacement thereof with a fresh tube is assured. 25

The mechanism cooperating with the discharge end of the tube 19 comprises a bracket generally designated 34 which includes a vertical plate 35 which slidably engages the front face of the base 5, portions of the outer edges of the plate 35 being bent around the edges of the base 5 so as to secure the bracket 34 slidably on the base 5. Upward projections from the plate 35 indicated by the numerals 37 also engage the front face of the base 5 and steady the bracket 34 thereon. 30

The horizontal forwardly projecting portion 38 of the bracket 34 is narrower than the plate 35 and has a longitudinal opening 39 formed inwardly from its front edge which is formed with angular sides 40, 41 forming the inner end thereof and constituting two adjacent sides of a hexagonal figure. To the rear of the opening 39 a narrow longitudinal slot 42 extends from the rear end of the plate 38 to an intermediate portion thereof and acts as a guide for a sliding projection 43 rising from the rear edge of the sliding gate 44 and the gate has intermediate its ends the hexagonal hole 45' with which the opening 39 in the plate 38 cooperates to clamp the discharge neck of the collapsible tube. 35

Two opposite sides of the gate 44 have the edges thereof bent upwardly and over the side edges of the plate 38 as indicated by the numerals 45 and 46 so as to connect the gate 44 slidably with the plate 38. A lug 47 is cut out between the ends of the portions 45, 46 and remains unbent so as to project laterally from the side edges of the gate 44. Contractile helical springs 48 are stretched from the front face of the plate 35 as indicated at 49 and the corresponding lug 47 so as to pull the gate 44 normally toward the base 5, so that the gate 44 will be urged into clamping engagement with the neck 33 of the container 19 so as to grip the same between the edges of the opening of the plate 38 and the edges of the opening of the gate 44, the neck 33 being placed through the opening 39 and the hole 45', the hexagonal sides of which assist in firm gripping of the tube neck. The projection 43 on the gate 44 being engaged in the slot 42 in the plate 38 40

aids the portions 45, 46, in preserving the desired alignment and free working of the plate 38 and the gate 44.

The lower edge of the plate 35 is slotted at spaced points as indicated at 50 to form a tongue which is rolled to form the barrel 51 for containing a pivot pin 52 the ends of which extend from the ends of the barrel 51 into ears 53 formed on one end of a swinging closure generally designated 54. 5

The swinging closure 54 comprises a narrow plate which has the spaced ears 53 formed on one end and has the opposite end downwardly directed as indicated at 55 to provide a finger grip. Near the front end of the closure 54 and extending from the top surface thereof is a cylindrical formation 56 whose upper edge is cut off at an angle as indicated at 57, whereby a cup is formed for receiving the open end of the tube neck 33 and closing the same, when engaged therewith. Means for holding the closure 54 engaged with the open end of the tube neck 33 comprises a spring bracket 58 which is secured as indicated at 59 to the front face of the plate 35 at the left hand side of the closure as shown in Figure 1. This spring bracket has an offset portion 60 with which is adapted to engage a lug 61 projecting from the corresponding side of the closure, when the closure is in the upward tube neck closing position. The swinging closure 54 is releasable from the bracket 58 simply by drawing downwardly on the closure in an obvious manner. 10

For pulling the gate 44 forwardly to release the tube neck 33, there is provided a depending portion 61 which is formed by bending downwardly a portion of the front end of the gate as shown in Figures 2 and 7. 15

As the tube 19 is wound upon the roller 17 and between the roller 17 and the idler roller 23, the bracket 34 will correspondingly slide upwardly on the base 5 while preserving the initial alignment of the tube. This is especially desirable when the tube is almost exhausted, as it enables expelling from the tube practically all of the contents thereof. The spring pressed arrangement of the rollers 17, 23 properly coacts with the "chisel" end of the tube 19 so that the tube 19 cannot pass between the rollers and wind on the roller 17 without having been properly compressed by the rollers. 20

Although I have shown and described herein a preferred embodiment of my invention, it is to be definitely understood that I do not desire to limit the application of the invention thereto, and any change or changes may be made in the materials in the structure and arrangement of the parts, within the spirit of the invention and the scope of the subjoined claims. 25

What is claimed is:—

1. A dispensing holder for a collapsible tube having a discharge neck, said holder comprising a base, a bracket on one end of said base, a pair of rollers rotatably and slidably carried by said bracket, spring means engaged with said bracket and with one of said rollers whereby one of said rollers is urged toward the remaining roller, stop means limiting the sliding movement of said remaining roller in the direction of urge of said spring means, said remaining one of said rollers being slotted to receive the flat end of the collapsible tube to connect said tube thereto for winding thereon, the first mentioned one of said rollers being arranged to guide and compress said flat end of the tube onto said remaining roller when said remaining roller is rotated in the tube 30

winding direction for expelling the contents of the tube, and a slide bracket longitudinally slidable on said base for receiving and holding the discharge neck of the tube and arranged to slide along said base so as to guide the tube as the same is wound on said remaining roller.

2. A collapsible tube evacuator comprising a base, a bracket rigidly mounted on said base, first and second rotatable members slidably mounted on said base for movement in cooperative relation to each other and in a plane approximately at right angles to said base, spring means on said bracket yieldably urging said second rotatable member slidably toward the first rotatable member, said first rotatable member being manually rotatable and including means for connecting a collapsible container thereto for winding thereon, said second rotatable member being operated by said spring means to engage and squeeze said collapsible tube against said first rotatable member as said first rotatable member is manually rotated.

3. A collapsible tube holder and evacuator comprising a base having a lateral bracket thereon containing slot means extending in a plane approximately at right angles to the plane of the base, a pair of rollers rotatable and slidable toward and away from each other along said slot means, spring means engaging one of the rollers in a manner to urge the same away from one end of the slot means toward the opposite end of

the slot means and the remaining roller, manual rotating means and collapsible tube end securing means on one of said rollers, the flat end of the collapsible tube being adapted to be secured by said securing means to the roller and wound thereon by operation of said manual rotating means in a position between said rollers so as to evacuate the contents of the tube from the opposite end thereof.

4. A collapsible tube holder and evacuator comprising a base having a lateral bracket thereon containing slot means extending in a plane approximately at right angles to the plane of the base, a pair of rollers rotatable and slidable toward and away from each other along said slot means, spring means engaging one of the rollers in a manner to urge the same away from one end of the slot means toward the opposite end of the slot means and the remaining roller, manual rotating means and collapsible tube end securing means on one of said rollers, the flat end of the collapsible tube being adapted to be secured by said securing means to the roller and wound thereon by operation of said manual rotating means in a position between said rollers so as to evacuate the contents of the tube from the opposite end thereof, and means slidable on the base for holding said opposite end of the collapsible tube relative to said base.

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