Jan. 7, 1930. E. HAUSBERG 1,742,536

TOOTH PASTE DISPENSING DEVICE

Filed Aug. 30, 1927

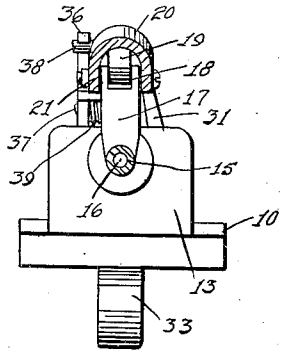


Fig. 5.

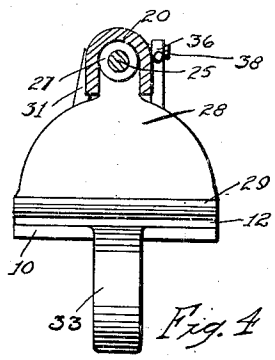


Fig. 4

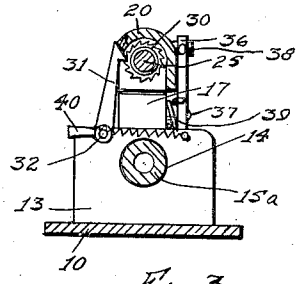


Fig. 3.

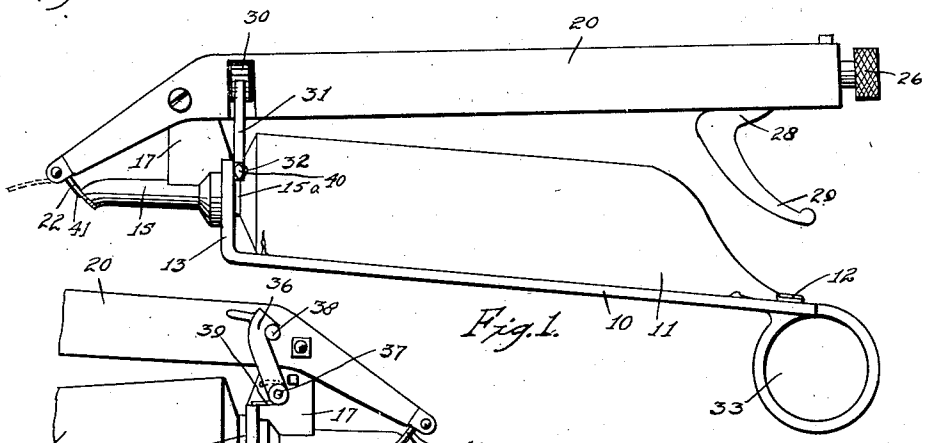


Fig. 1.

Fig. 6.

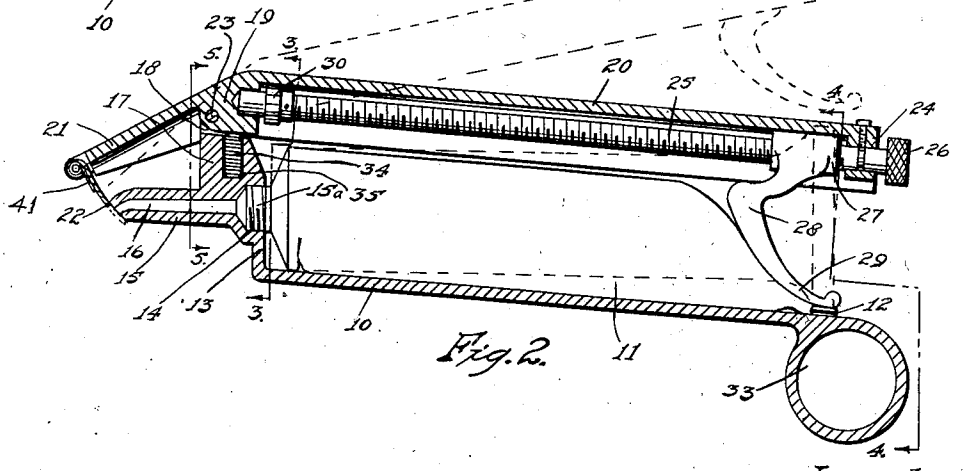


Fig. 2.

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UNITED STATES PATENT OFFICE

ERNEST HAUSBERG, OF CHARLES CITY, IOWA

TOOTH-PASTE-DISPENSING DEVICE

Application filed August 30, 1927. Serial No. 216,427.

This invention relates to improvements in tooth paste dispensing devices.

The object of my invention is to provide a dispensing device of simple, durable, and inexpensive construction, constructed to support a collapsible tube of tooth paste in such a manner that measured quantities of the tooth paste may be dispensed, and provided with means for automatically closing the discharge opening of the dispenser when the device is not in use.

My invention consists in the construction, arrangement and combination of the various parts of the 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 side elevation of my improved dispenser with a tube of tooth paste mounted therein.

Figure 2 is a longitudinal sectional view of same.

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

Figure 4 is a detail sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a detail sectional view taken on the line 5—5 of Figure 2.

Figure 6 is a detail side elevation of the front end of the dispenser, illustrating in detail the locking mechanism.

My improved device comprises a body portion 10 having the form of a flat plate of a length slightly greater than the length of the tube 11, and of a width equal to the width of the flattened end 12 of said tube. The front end of the member 10 is provided with a head 13 having a screw threaded opening 14 for receiving the screw threaded end 15 of the tube 11. The head 13 is provided with a discharge nozzle 15 having a discharge opening 16. The plate 10 is slightly inclined with the center line of the screw threaded member 15[a] of the tube 11 supported in the opening 14. The flattened end 12 of said tube may be rotated without engaging the member 10. The tube assumes the dotted line position shown in Figure 2 when it is being placed in position. The tube is rotated until the member 12 is parallel with the back end of the plate 10, after which it is bent downwardly until the tube rests on the plate 10, in the manner illustrated in Figure 1, with the flattened member 12 against the body portion 10.

The head 13 is provided with an upwardly extending member 17 which terminates in a hinge portion 18 to which is pivotally connected a head member 19 having a semi-cylindrical frame member 20 supported substantially parallel with the member 10, and a forwardly extending portion 21 supported above the nozzle 15. The free end of the member 21 is provided with a spring actuated gate 22 for closing and opening the opening 16 as the member 21 is oscillated on its pivot member 23.

The back of the member 21 is provided with a bearing 24 in which is rotatively mounted a screw threaded shaft 25, the forward end of which is rotatively mounted in the head 19. The rear end of the shaft 25 is provided with a knurled knob 26. The shaft 25 is provided with a screw threaded sleeve 27 designed to fit the interior of the member 20 and to travel longitudinally thereof. Said sleeve 27 is provided with a downwardly extending arm 28 which terminates in a pressure foot 29 adapted to engage the free end of the tube 11 and to collapse the tube as the free end of the member 20 is moved inwardly toward the member 10. The sleeve is advanced forwardly as the free end of the member 20 is elevated by means of a ratchet wheel 30 secured to the front of the shaft 25 and actuated by means of a pawl 31, the front end of which is pivotally connected to a pin 32 mounted in the back end of the head member 13, as illustrated in Figure 3.

By this arrangement it will be seen that if the free end of the member 20 is elevated, the pawl 31 will engage the teeth of the ratchet 30 and cause the same to rotate the shaft 25 through a part revolution, and to advance the sleeve 27 a slight distance depending on the amount of rotation of the shaft 25 and the pitch of the threads thereon.

It will be seen that if the free end of the member 20 is moved toward the plate 10 by the operator placing one finger through

a loop 33 and engaging the free end of the member 20 with his thumb and imparting a squeezing action to the members 10 and 20, it will cause the pressure foot 29 to be forced downwardly on the outer end of the tube 11, and a measured portion of the contents therein forced through the opening 16. The gate 22 is designed to uncover the said opening as the foot 29 engages the tube 11. The free end of the member 20 is forced normally outwardly by means of a spring 34 mounted in a suitable opening 35 in the head 13, so that the upper end of the spring 34 engages the lower edge of the head member 19 at a point back of the pivot 23.

In the normal operation of the device, the free end of the member 20 is limited to travel through a comparatively small angle by means of a dog 36 supported on a pivot 37 mounted in the head 13 and designed to engage a pin 38 in the head 19. A suitable spring 39 is provided for retaining the dog in its latched position with the member 20 substantially in the position illustrated in Figure 1. When it is desired to place the tube in position, then the dog 36 is moved out of engagement with the pin 38, permitting the member 20 to move to the dotted line position shown in Figure 2, after which the tube may be easily inserted under the foot 29.

The pawl 31 is provided with an outwardly extending arm 40 which provides means whereby the said pawl may be caused to disengage the ratchet 30, after which the knob 26 may be actuated to return the foot 29 from its forward position of movement to its rearward position of movement. This movement takes place before the dispenser is refilled.

Thus it will be seen that I have provided a dispenser particularly adapted to dispense measured quantities of tooth paste from a commercial type of collapsible tube in common use, and which may be easily operated, and positive in its action.

One advantage of my construction lies in the fact that the foot 29 is pressed against the outer end of the tube 11 in such a manner that the member 20 is moved inwardly toward the member 10 by power derived from the operator's hand, the foot 29 being advanced forwardly as the member moves outwardly, and at a time when no pressure is being applied to the foot or the operating mechanism, thereby providing means whereby the operating devices are relieved of all unnecessary strain, and providing means whereby said operating devices may be of comparatively light construction and free from unnecessary wear.

Another advantage of my construction lies in providing the spring actuated gate 22 for closing the delivery opening 16. The gate is normally closed by means of a spring 41 which provides means whereby the said gate will always be supported against the end of the nozzle 15 for positively retaining the opening 16 closed, regardless of the position of the gate thereon, and provides for any wear that might take place in the pivot of the member 20. The gate may be swung outwardly to the dotted line position shown in Figure 1 for the purpose of cleaning both the nozzle and the inner face of the gate, if so desired.

I claim as my invention:

1. In a paste dispensing device, the combination of a body portion adapted to support a collapsible tube adjacent to one of its sides and having an opening for receiving the discharge end of said tube, a frame member pivotally mounted to said body portion and movable toward and from a tube supported in said body portion, a pressure foot carried by said frame member and movably mounted relative to said frame and in longitudinal relation with said tube, said pressure foot being adapted to engage the free end of the inner face of said tube and collapse the same as the frame member is moved inwardly, and means operatively connected to said pivoted frame and actuated by its outward movement for advancing said pressure foot toward the delivery end of said tube.

2. In a paste dispensing device, the combination of a body portion adapted to support a collapsible tube adjacent to one of its sides and having an opening for receiving the discharge end of said tube, a frame member pivotally mounted to said body portion and movable toward and from a tube supported in said body portion, a pressure foot carried by said frame member and movably mounted relative to said frame and in longitudinal relation with said tube, said pressure foot being adapted to engage the free end of the inner face of said tube and collapse the same as the frame member is moved inwardly, for the purposes stated.

3. In a paste dispensing device, the combination of a body portion for holding a collapsible tube, the said body portion having at its forward end a head provided with an opening to receive the delivery end of the tube and to discharge the contents of the tube, a frame member pivoted to the body portion at a point adjacent to the said head and extending from its pivotal point rearwardly over the part of the body portion to be occupied by the collapsible tube, the said frame member being movable toward and from the tube when held in the body portion, and a pressure foot mounted upon the said pivoted frame to engage the said tube when the said pivoted frame is moved toward it.

4. In a paste dispensing device, the combination of a body portion for holding a collapsible tube, the said body portion having at its forward end a head provided with an opening to receive the delivery end of the said tube and a nozzle to discharge the contents of the

tube, a frame member pivoted to the body portion at a point adjacent to the said head and extending forwardly and rearwardly from its pivotal point, the rear end of said frame being adapted to move toward and from said body portion, and a gate operatively connected to the forwardly extending part of the pivoted frame for opening and closing said nozzle.

5. In a paste dispensing device, the combination of a body member for holding a collapsible tube, the said member having at its forward end a head provided with an opening to receive the delivery end of the said tube and a nozzle to discharge the contents of the tube, a frame member pivoted to the body member at a point adjacent to the said head and extending from its pivotal point rearwardly over the part of the body member to be occupied by the collapsible tube, the said pivoted frame being movable toward and from the tube when held in the body member, a pressure foot mounted upon the said pivoted member to engage the said tube when the pivoted member is moved toward it, and a gate operatively connected with the pivoted frame for opening and closing said nozzle.

6. A paste dispensing device. comprising a body member for holding a collapsible tube, the said member having a head with an opening for receiving the delivery end of the tube and a nozzle for discharging its contents, a frame pivotally mounted upon the body portion and movable inwardly toward, and outwardly from, said tube, a threaded shaft rotatively mounted in the pivoted frame, a pressure foot for engaging the said tube as the pivoted member is moved toward it, the said pressure foot being mounted on the said shaft so as to travel longitudinally thereof as the shaft is rotated, means operated upon and by the outward pivotal movement of the pivoted frame for rotating the shaft so as to advance the pressure foot, and a gate for the said nozzle operatively connected with the said pivoted member.

7. In a paste dispensing device, a body portion adapted to support a collapsible tube adjacent to one of its sides and having an opening for receiving the discharge end of said tube, a frame member pivotally mounted to said body portion and movable toward and from a tube supported in said body portion, a threaded shaft rotatively mounted in the pivoted frame, a pressure foot having a threaded opening mounted on said shaft, and means operatively connected to, and operated by the outward movement of, said pivoted frame to rotate said shaft for moving said pressure foot longitudinally thereof, said pressure foot being adapted to engage the free end of the inner face of said tube, for the purposes stated.

8. In a paste dispensing device, a body portion having means for holding a collapsible tube, a frame member connected with the body member and movable inwardly toward and outwardly from the said tube, a threaded shaft rotatively mounted in the said frame member, and a pressure foot for engaging the tube as the frame member is moved inwardly, said pressure foot being mounted on said shaft to travel longitudinally thereof when the shaft is rotated.

9. In a paste dispensing device, a body portion for holding a coliapsible tube, a frame member pivoted to the body member and movable toward and from a collapsible tube when mounted in the body portion, a threaded shaft rotatively mounted in the said pivoted frame, a pressure foot for engaging the said tube as the free end of the pivoted member is moved toward it, the said pressure foot being mounted on the said shaft so as to travel longitudinally thereof when the shaft is rotated, and means operated by the outward movement of the pivoted frame for rotating said shaft.

10. In a paste dispensing device, a body portion for holding a collapsible tube, a frame member pivoted to the body portion and movable inwardly toward and outwardly from, a collapsible tube when mounted in the body portion, a threaded shaft rotatively mounted in the said pivoted frame, a pressure foot for engaging the said tube as the pivoted frame is moved toward it, the said pressure foot being mounted on the shaft to travel longitudinally thereof when the shaft is rotated, a ratchet wheel mounted on said shaft, and a pawl connected to the body portion and coactable with the ratchet wheel to impart rotary motion thereto when the free end of the pivoted frame is moved outwardly.

11. In a paste dispensing device, the combination of a body portion for supporting a collapsible tube adjacent to one of its sides and having an opening for receiving the delivery end of the tube and discharging its contents, a frame member pivoted to the body portion and movable inwardly toward, and outwardly from, a tube supported in the said body portion, a shaft mounted in the said frame member, and a pressure foot mounted on the said shaft and capable of longitudinal movement with reference thereto, the said pressure foot being adapted to engage the said tube as the pivoted member is moved inwardly.

Des Moines, Iowa, August 17, 1927.

ERNEST HAUSBERG.