Jan. 24, 1933. F. O. JOHNSON 1,895,163

TOOTH PASTE DISPENSER

Filed June 23, 1931

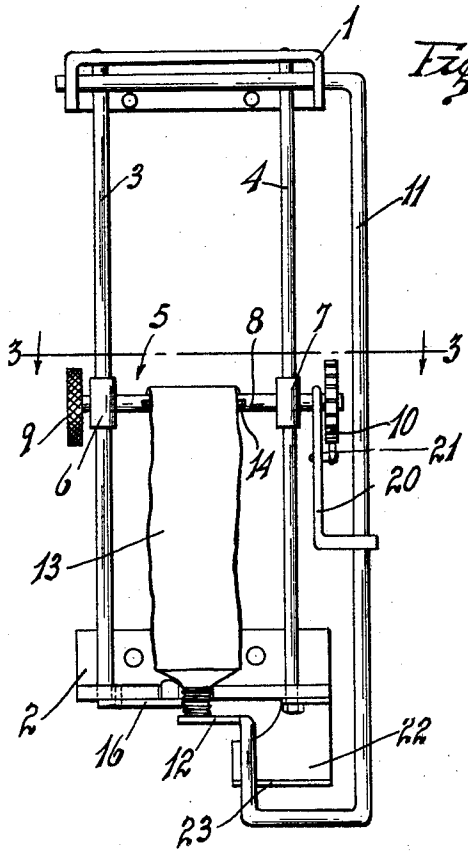


Fig. 1.

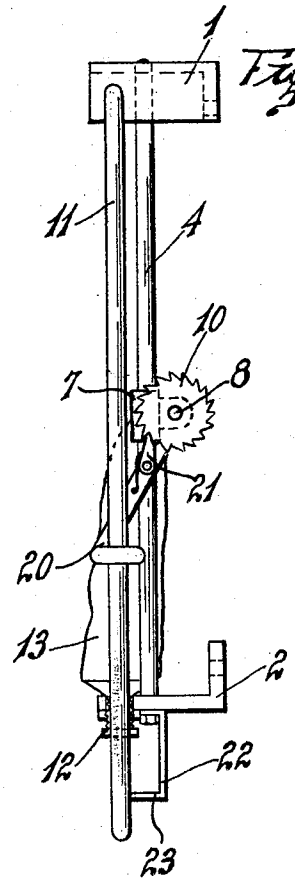


Fig. 2.

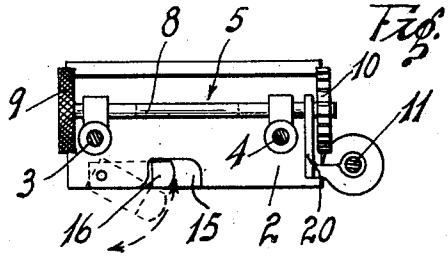


Fig. 3.

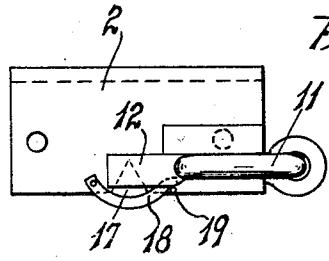


Fig. 4.

INVENTOR.
FREDERICK O. JOHNSON.
BY
H. A. Duckman
ATTORNEY.

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UNITED STATES PATENT OFFICE

FREDERICK O. JOHNSON, OF LONG BEACH, CALIFORNIA

TOOTH PASTE DISPENSER

Application filed June 23, 1931. Serial No. 546,195.

This invention relates to a toothpaste dispenser whereby the paste can be ejected from a tube automatically upon movement of an operating arm.

An object of my invention is to provide a toothpaste dispenser in which a swinging operating arm serves to eject paste from a tube, and which also closes the outlet from the tube when not in operative position.

A further object is to provide a toothpaste dispenser in which a vertically moving carriage serves to support the tube and also to eject the paste therefrom.

Other objects, advantages, and features of invention may appear from the accompanying drawing, the subjoined detailed description, and the appended claims.

In the drawing

Figure 1 is a front elevation of my toothpaste dispenser.

Figure 2 is a side view of the same.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Figure 4 is a bottom plan view of my dispenser showing a modified form of tube holding means.

Referring more particularly to the drawing, my dispenser comprises two spaced brackets 1—2 which are secured to the wall by means of screws or the like. A pair of vertical guide rods 3—4 are secured to the brackets 1—2 and are spaced outwardly from the wall. A carriage 5 is slidably mounted on the rods 3—4 and comprises sleeves 6—7 which surround the rods 3—4 respectively. A shaft 8 is journaled on the sleeves 6—7 and extends horizontally between them. A knurled nut 9 is secured to one end of the shaft 8 for the purpose of manually rotating the shaft in order to thread the tube thereon, as will be further described. A toothed gear or wheel 10 is secured to the other end of the shaft 8 by means of which said shaft is automatically rotated, as will be further described.

An operating arm 11 is journaled in the bracket 1 and is bent downwardly to parallel the rods 3—4, is then bent into a U-shape at the lower end, and finally terminates in a flat horizontally extending closure plate 12.

The toothpaste tube 13 is fitted into a slot 14 in the shaft 8 and the outlet end of the tube is secured in the bracket 2 by suitable means. A notch 15 is provided in the bracket 2 into which the lower end of the tube fits. A clamping plate 16 is pivotally mounted on the bottom of the bracket 2 and the swinging end of this cam plate presses tightly against the lower end of the tube to wedge it tightly in the notch 15.

As shown in Figure 4, the means of holding the lower end of the toothpaste tube may be a notch 17 and a closure arm 18 pivoted at one side of the notch and removably held on the other side by means of a pin or abutment 19.

It will be evident from the foregoing description that the toothpaste tube 13 is supported from the shaft 8 and is securely held at its lower end in the bracket 2, and with the plate 12 closing the outlet thereof. Each time the operating arm 11 is swung outwardly, a quantity of paste will be ejected from the tube by the following arrangement: A link 20 is journaled at one end of the shaft 8 adjacent to the gear 10, and the other end thereof is slidably attached to the arm 11. The link may be bent around the arm 11 or it may have a hole formed therein to loosely receive the arm.

An escapement pawl 21 is pivotally mounted on the link 20 and engages the gear 10, thus each time the arm 11 is swung outwardly, the gear 10 and shaft 8 are rotated and a quantity of paste is squeezed from the tube 13 due to the fact that the end of the tube is wound on the shaft 8. When the arm 11 is pushed rearwardly to its normal position, the pawl 21 escapes the gear and no paste will be ejected. The flat plate 12 on the operating arm closes the bottom of the tube and prevents the paste from drying out therein while the dispenser is not in use.

To limit the rearward movement of the arm 11, I provide a stop plate 22. This plate is attached to the bottom of the bracket 2 and comprises an outwardly extending lower lip 23 against which the lower part of the arm 11 strikes to limit the rearward movement thereof.

Having described my invention, I claim:

1. A collapsible tube holder comprising upper and lower brackets, a pair of spaced rods secured to said brackets, a sleeve slidably mounted on each rod, a shaft journaled on said sleeves, a thumb nut on one end of said shaft, a gear on the other end of said shaft, said shaft having a slot therein adapted to receive one end of a tube, means for clamping the other end of the toothpaste tube in said lower bracket, an operating arm journaled in the upper bracket, a link, one end of said link being journaled on said shaft, the other end of said link being slidably attached to said arm, an escapement pawl on said link, said escapement pawl engaging said gear whereby the gear and shaft are rotated as the arm is swung, in one direction.

2. A collapsible tube holder comprising upper and lower brackets, a pair of spaced rods secured to said brackets, a sleeve slidably mounted on each rod, a shaft journaled on said sleeves, a thumb nut on one end of said shaft, a gear on the other end of said shaft, said shaft having a slot therein adapted to receive one end of a tube, means for clamping the other end of the toothpaste tube in said lower bracket, an operating arm journaled in the upper bracket, a link journaled on the shaft, the other end of said link being slidably attached to said arm, an escapement pawl on said link, said escapement pawl engaging said gear whereby the gear and shaft are rotated as the arm is swung in one direction, and a closure plate on the lower end of said arm, said closure plate extending over the bottom of the tube to close the same, when the arm is swung in the opposite direction.

3. A collapsible tube holder comprising upper and lower brackets, a pair of spaced rods secured to said brackets, a carriage comprising a pair of slidably mounted sleeves, one on each of said rods, a shaft rotatably mounted on the sleeves, means on said shaft for attaching the flattened end of a collapsible tube, means securing the lower end of a tube in said lower bracket, an operating arm journaled in said upper bracket, a means on said arm extending to said shaft whereby the shaft is rotated as the arm is swung.

4. A collapsible tube holder comprising upper and lower brackets, a pair of spaced rods secured to said brackets, a carriage comprising a pair of slidably mounted sleeves, one on each of said rods, a shaft rotatably mounted on the sleeves, means on said shaft for attaching the flattened end of a collapsible tube, means securing the lower end of a tube in said lower bracket, an operating arm journaled in said upper bracket, a means on said arm extending to said shaft whereby the shaft is rotated as the arm is swung, and a closure plate on the lower end of said arm, said closure plate being adapted to press against the bottom of the tube to close the same.

5. A collapsible tube holder comprising upper and lower brackets, a pair of spaced rods secured to said brackets, a carriage comprising a pair of slidably mounted sleeves, one on each of said rods, a shaft rotatably mounted on the sleeves, means on said shaft for attaching the flattened end of a collapsible tube, means securing the lower end of a tube in said lower bracket, an operating arm journaled in said upper bracket, a gear secured to said shaft, a link journaled on the shaft at one end thereof and slidably attached to the arm at the other end thereof, and an escapement pawl on said link, said pawl engaging the gear whereby the shaft is rotated as said arm is swung.

6. A collapsible tube holder comprising upper and lower brackets, a pair of spaced rods secured to said brackets, a carriage comprising a pair of slidably mounted sleeves, one on each of said rods, a shaft rotatably mounted on the sleeves, means on said shaft for attaching the flattened end of a collapsible tube, means securing the lower end of a tube in said lower bracket, an operating arm journaled in said upper bracket, a gear secured to said shaft, a link journaled on the shaft at one end thereof and slidably attached to the arm at the other end thereof, and an escapement pawl on said link, said pawl engaging the gear whereby the shaft is rotated as said arm is swung, and a closure plate on the lower end of said arm, said closure plate being adapted to press against the bottom of the tube to close the same.

In testimony whereof, I affix my signature.

FREDERICK O. JOHNSON.