May 11, 1926. 1,583,813

W. G. THWAITES

TOOTH PASTE DISPENSER

Filed August 17, 1925

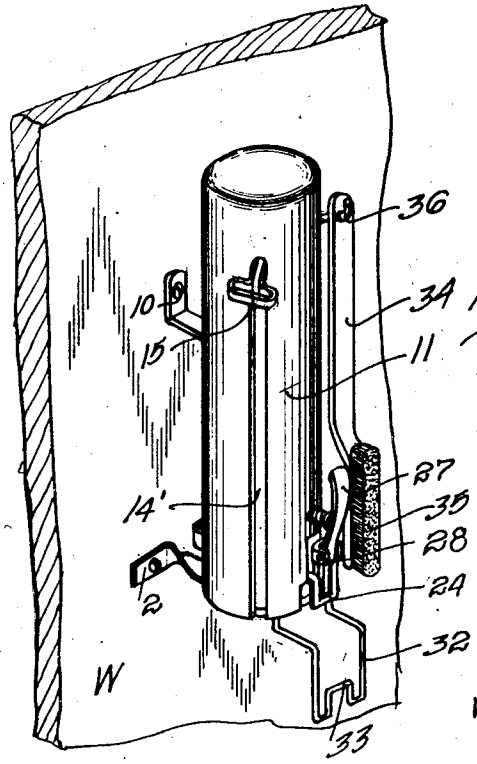


Fig. 1

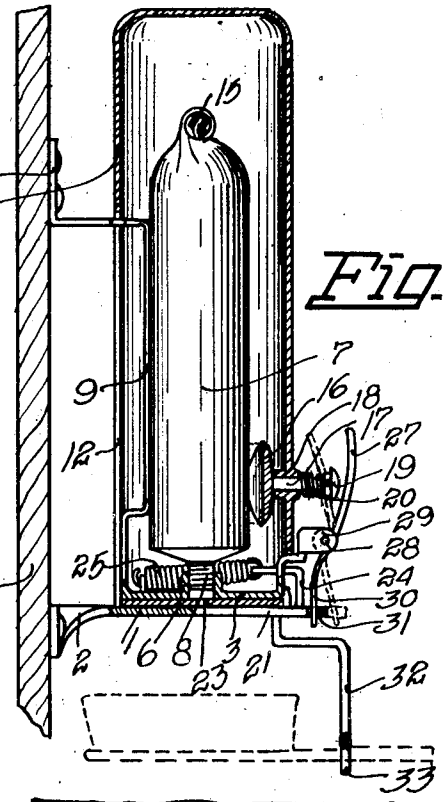


Fig. 2

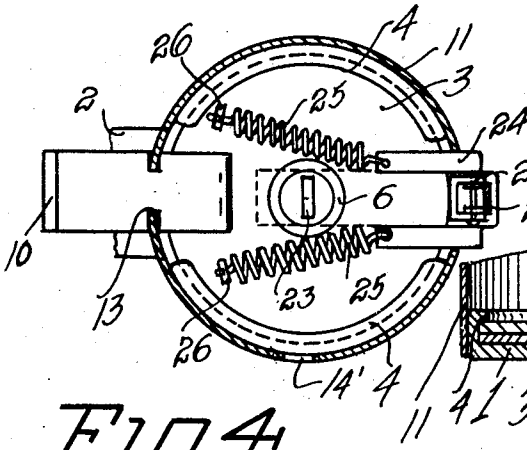


Fig. 4

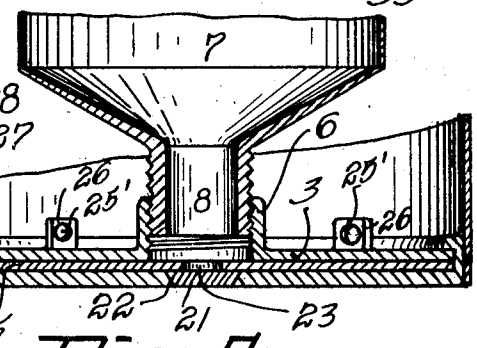


Fig. 3

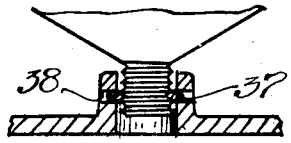


Fig. 5

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UNITED STATES PATENT OFFICE.

WALTER G. THWAITES, OF SPOKANE, WASHINGTON.

TOOTH-PASTE DISPENSER.

Application filed August 17, 1925. Serial No. 50,551.

My present invention relates to an improved tooth paste dispenser which while adapted especially for use in dispensing dental paste is capable of being used for dispensing numerous other similar materials, as soap in paste form. The invention contemplates the use of a stationary, sanitary device of this character whereby a supply of the paste may with facility be discharged from a collapsible tube, and the supply automatically cut off after the proper quantity has been supplied, for the purpose of preventing waste.

The dispensing device which involves a minimum number of parts in compactly arranged and is simple in construction and operation, reliable, durable and not likely to become deranged from use.

Means are provided whereby the collapsible tube may be shortened to compensate for the absence of material as the latter is discharged, and means are also provided whereby the used tube, after its contents have been exhausted, may readily be removed from the device and replaced by a full tube.

The invention consists in certain novel combinations and arrangements of parts as will hereinafter be more fully set forth and claimed. In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principle of my invention.

Figure 1 is a perspective view of a device embodying my invention.

Figure 2 is a transverse vertical sectional view of the device showing a tooth brush in dotted lines in position to receive a supply of paste delivered or discharged from the tube.

Figure 3 is an enlarged transverse vertical sectional view at right angles to the position of Figure 2, through the base of the device.

Figure 4 is a horizontal transverse sectional view through the removable cup or casing, showing in plan some of the operating parts of the device, and Figure 5 is a view showing an alternative method of securing the paste tube.

The device as hereinafter referred to and illustrated in the drawings is adapted for dispensing dental paste, and is manually operated to discharge or deposit a desired quantity of the paste on a tooth brush. In carrying out my invention I utilize a circular disk or base plate as 1 of metal or other suitable material, which is provided with a bracket 2 that is secured as by screws to the support W, which may be a wall or other substantial support, placed in position where it is readily accessible for use.

A second circular plate as 3 is combined with the base plate, and the latter is fashioned with a pair of complementary opposed top flanges 4, of arcuate shape for retaining the top plate 3 in position, and a packing plate 5 is preferably used between the base and top plates as indicated in Figure 3.

The top plate at its center is provided with a receiving boss 6 to support the collapsible tube 7, and the externally threaded nipple 8 of the tube is designed to screw into the internal threads on the receiving boss. The collapsible tube may be of any of the usual standard types readily procured in the open market, and is applied for use by locating it in upright position and screwing its threaded nipple into the receiving boss as indicated in Figure 3. For maintaining the tube in upright position I utilize a vertical back plate as 9, which at its lower end is rigid with the base portion of the dispenser, and at its upper end is provided with an angular attaching flange 10 which is attached as by screws to the wall W or other support that may be employed. The back plate is of ample length for supporting approximately the full length of the usual tube, and continues to support the foreshortened tube as the latter is rolled upon itself to compensate for the material discharged therefrom.

For sanitary and esthetic purposes as well as for assisting in the performance of the functions of the device, I provide a cap or cover 11 in the form of a cylindrical casing 11 having an open lower end that fits neatly

over the flanged base plate and by frictional contact is retained on the plate. This enclosing casing for the tube, at its rear is fashioned with vertical slot 12 which is open at the lower end of the casing which permits the casing to be slipped over the back plate, and the angular flange 10 of the back plate in its opposite edges, is provided with notches 13 to receive the walls of the rear slot 12. By this combination and arrangement of parts the cylindrical cap or casing has a rigid support against accidental displacement, but may readily be removed when required for changing the paste tubes.

A second slot 14' is provided at one side of the casing, which also is open at the bottom of the casing, to accommodate the key 15 of the tube, the key being used in well known manner to roll the material of the empty portion of the tube upon itself when the key is turned by hand for that purpose.

The removable cap, near its lower end, carries a pressure plate 16 located within its wall, and preferably curved to conform to the exterior periphery of the paste tube. The plate which stands in a vertical plane is designed to be moved laterally and is fashioned with a horizontally disposed rod or bar 17 slidable in a bearing boss 18 fashioned at both the inner and outer sides of the casing wall. Exterior of the casing a push button 19 is provided on the end of the push bar, and a spring 20 interposed between the push button and the boss 18, holds the pressure plate normally away from the tube and returns the plate to normal position after it has been operated to discharge paste from the tube.

The discharge of paste from the tube is governed by means of a slide gate 21 carried in a radially arranged slot 22 having bevel walls in the base plate. This slot extends from the periphery of the base plate slightly beyond the center of the plate, and an orifice 23 is provided in the packing disk 5 alined with both the slot and the discharge nipple 8 of the tube 7. The slide gate which opens outwardly from the center of the base plate is provided with a U-shape yoke 24 and the lower edge of the cap is notched to accommodate this yoke whose arms project inwardly toward the center of the device. A pair of springs 25 are attached to the yoke, and at 25' these springs are attached to perforated ears 26 of the top plate 3, in order that the springs may hold the slide gate in normally closed position and return it to normal position after it has been opened to permit discharge of the paste.

Means are provided whereby the slide gate may be opened and a quantity of paste simultaneously discharged from the nipple 8 through the orifice 23 and the opened slot 22. For this purpose a thumb or finger lever 27 is employed and is located in position to contact with the push button of the pressure plate for actuating the plate and at the same time open the slide gate. The lever is pivoted in front of the casing at 28 on a bracket 29 which bracket is rigid with the top plate 3, and the free end of the lever projects upwardly in position to actuate the pressure plate as shown in Figure 2.

Below its pivot 28 the lever has an arm 30 which has a slot connection at 31 with the slide gate in order that as the lever is pushed inwardly to actuate the pressure plate, the lever arms swings outwardly to open the slide gate. When pressure is removed from the lever, both springs 20 and springs 25 which have been placed under tension, assist in retracting the pressure plate, the lever and the slide gate to normal position.

Beneath the device is arranged a wire bracket 32 having a notch 33 for the handle 34 of a tooth brush 35, which when not in use is suspended from a hook 36 of the casing. For receiving a charge of paste from the dispenser the brush is placed in dotted position shown in Figure 2 with the handle in the notch 33 and the brush beneath the slide gate. The notch insures that the brush will be placed in proper position to receive the charge, and after the latter has been cut off by the action of the slide gate it rests upon the brush for use in well known manner.

As an alternative method of securing the tube to the top plate 6 means shown in Figure 5 may be used whereby the threads in the boss are dispensed with and a spring 37 fastened to engage the threads of the tube is provided. The receiving boss is slotted on two sides as 38 permitting a V-shaped spring 37 to enter and make a positive connection with the neck of the tube.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is—

1. The combination with a base having a discharge orifice and a slide gate and means for receiving a paste tube, of a removable cap and a pressure actuated device carried thereby for coaction with the tube, a lever supported on the base for co-action with said pressure actuated device and connections between said lever and slide gate.

2. The combination with a base having a discharge orifice and a slide gate and means for receiving a paste tube, of a removable cap, a spring pressed plate carried by the cap for engagement with the tube, a lever pivoted on the base in position to actuate said plate, and a slotted connection between the lever and slide gate.

3. The combination with a base having a discharge orifice, a slide gate and a receiving boss for a paste tube, of a back plate supported from the base, a removable cap, a spring pressed plate carried by the cap for

engagement with the tube, a lever pivoted on the base for co-action with said plate, and an operative connection between said lever and said slide gate.

4. The combination with a base having a discharge orifice and means for normally closing said orifice and means for receiving a paste tube, of a removable cap and means carried thereby for engagement with said tube, and means supported on the base for simultaneously pressing the tube and opening said gate.

In testimony whereof I affix my signature.

WALTER G. THWAITES.