

April 30, 1963

H. E. NOLIN

3,087,653

ELECTRIC TOOTHPASTE DISPENSER

Filed April 3, 1961

2 Sheets-Sheet 1

FIG. 1

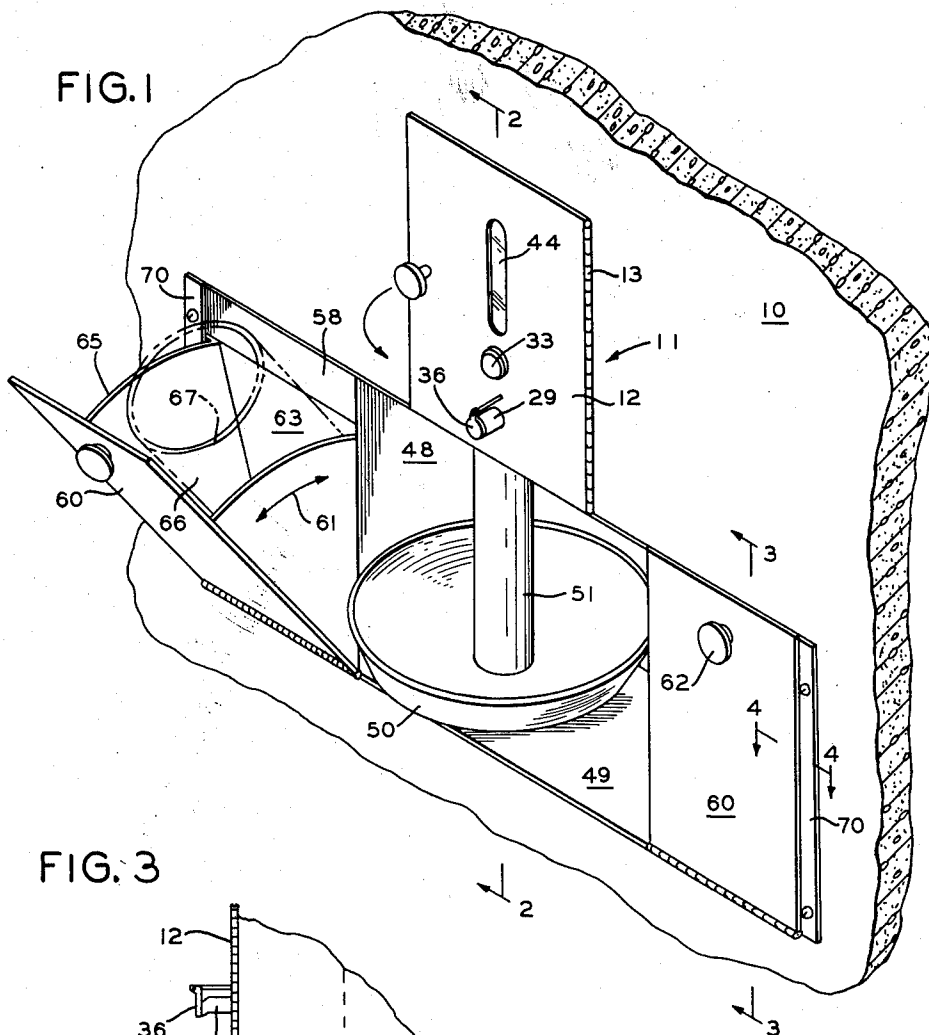


FIG. 3

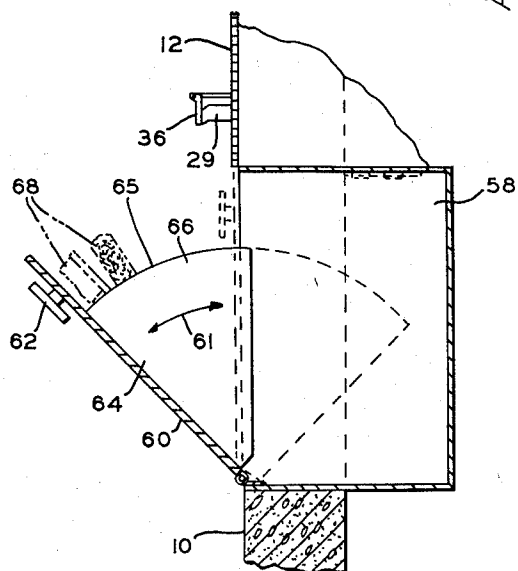
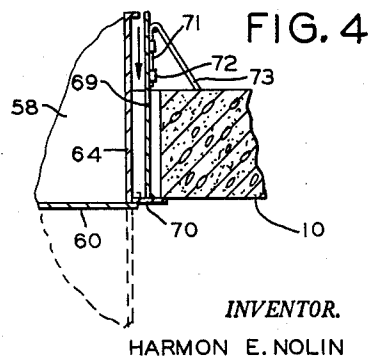


FIG. 4



INVENTOR.

HARMON E. NOLIN

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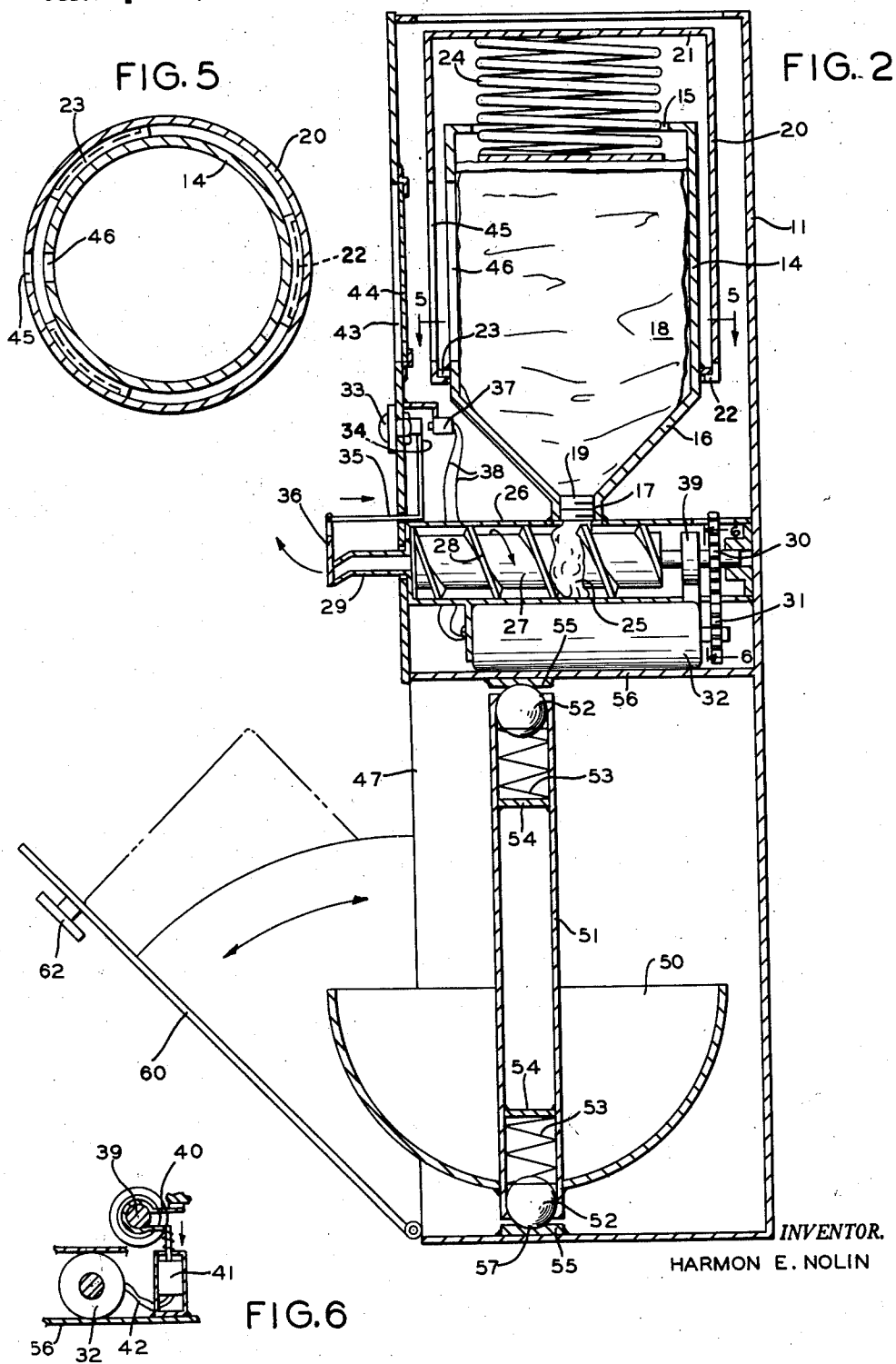
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2 Sheets-Sheet 2



1

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ELECTRIC TOOTHPASTE DISPENSER

Harmon E. Nolin, Hot Creek Hatchery, Bishop, Calif.
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3 Claims. (Cl. 222-93)

This invention relates generally to dispensing apparatus, and more specifically to a device for automatically dispensing tooth paste.

It is a primary object of this invention to provide a wall mounted apparatus for the purpose of storing toiletry needs and incorporating electrically operated means for dispensing toothpaste.

Another object of the invention is directed to the provision of a removable and rotatable soap tray mounted beneath the tooth paste dispenser for the convenient display of a choice of toilet soaps.

Yet another object of the invention is to provide an attractive wall mounted unit which conveniently conceals and protects the necessary utilities required for washing and particularly for cleaning the teeth, said unit being convenient and efficient in operation, and providing novel appeal and utility to the modern bathroom.

Briefly, my invention comprises the provision of a casing which is mounted in the vertical face of a wall. The upper central portion of the casing houses an electrically operated tooth paste dispenser which dispenses tooth paste in response to the rotation of a worm drive. Disposed beneath the dispenser is a hemi-spherical soap holder which is mounted for rotation on a vertical axis. Compartments to the left and right of the soap holder provides storage for a drinking glass and tooth brushes respectively.

A full understanding of the construction of this invention, together with further novel features and advantages, will be had from the following detailed description of a preferred embodiment thereof, taken in conjunction with the attached drawings wherein:

FIG. 1 is a perspective view of the complete casing which incorporates the tooth paste dispenser and comprises my invention.

FIG. 2 is a cross sectional side elevation taken along the line 2-2 of FIG. 1.

FIG. 3 is a fragmentary cross sectional side elevation taken along the line 3-3 of FIG. 1.

FIG. 4 is a fragmentary cross sectional plan view taken along the line 4-4 of FIG. 1.

FIG. 5 is a cross sectional plan view taken along the line 5-5 of FIG. 2.

FIG. 6 is a fragmentary cross sectional front elevation taken along the line 6-6 of FIG. 2.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring now to the drawings in detail, and more particularly to FIGS. 1 and 2, the numeral 10 represents the vertical face of a wall customarily disposed above a wash basin. A tooth paste dispenser 11 is generally rectangular in cross section and has a front panel 12 suitably hinged along one edge at 13 to the side of the dispenser. Mounted within the dispenser 11 is a cylindrical sleeve 14 having a circular opening 15 formed in the upper end and a downwardly extending cone 16 at the lower end which terminates with an opening 17. A large collapsible tube 18 which contains tooth paste is received in the sleeve and is provided with a necked orifice 19 for positioning in the opening 17. The upper portion of the sleeve 14 is surrounded by a sleeve 20 having a closed end 21. The lower end of the sleeve 20 has inwardly extending lugs 22 which selectively lock beneath similarly spaced lugs 23 projecting radially from a lower portion of the sleeve. A compression spring 24 is disposed between

2

the upper end 21 of the sleeve and the collapsible tube 18 so as to urge the tooth paste 25 outwardly through the orifice 19. Disposed diametrically and horizontally beneath the opening 17 in the sleeve 14 is a cylinder 26. A screw conveyor 27 having a spirally mounted flange 28 thereon is adapted to embrace the inner periphery of the cylinder 26 and rotate therewithin. One end of the cylinder terminates with a dispensing tube 29 which projects outwardly through the front panel 12 of the dispenser. The screw conveyor 27 is driven by gears 30 and 31 by means of a small electric motor 32 disposed beneath the cylinder.

The operation of the dispenser is as follows. A push button switch 33 is pressed. Such movement pushes an arm 34 inwardly which connects through a linkage 35 to open a small closure cap 36 disposed at the opening of the dispensing tube 29. An electrical contact switch 37 is closed causing the motor 32 to operate through connecting leads 38. The gears 30 and 31 cooperate to cause the screw conveyor to rotate and force the tooth paste 25 outwardly through the uncovered tube 29. A small brake drum 39 is mounted concentrically with the screw conveyor 27 and cooperates with a spring biased brake band 40 which locks the drum 39 when the motor 32 is off. A small solenoid 41, as shown in FIG. 6, is actuated in parallel with the motor through wires 42 and is adapted to release the brake band 40 upon actuation of the motor. Immediately when the push button is released, the motor becomes inactive and the brake is simultaneously applied to stop the rotation of the screw conveyor. A vertical slot 43 is formed in the panel 12 and is lined with glass 44 such that visual inspection of the collapsible tube 18 can be made through aligned slots 45 and 46 formed in the sleeve 20 and sleeve 14 respectively.

Disposed vertically beneath the dispenser 11 is a recess 47 having a semi-circular vertical wall 48 surrounding a flat base 49. The recess 47 removably mounts a rotatable hemi-spherical soap dish 50. The dish 50 is mounted concentrically to one end of a vertical tube 51. Each end of the tube 51 is closed by a ball bearing 52 which is urged to project outwardly of the end by a compression spring 53 seated on a platform 54 inwardly spaced from the ends of the tube 51. Small bearing pads 55 are secured in the top 56 and the base 49 of the recess 47 and have depressions 57 formed therein to receive the projecting ends of the bearings 52. It will be appreciated that the dish 50 may be simply removed for cleaning purposes and further, there is ample space for the display of at least three types of toilet soap, each easily reached by rotation of the dish about the bearings 52.

To each side of the recess 47 there is formed a rectangular opening 58. The openings mount the lower edge of a hinged panel 60 for pivotal movement in a vertical plane as indicated by the arrow 61. The top of the panel is provided with a small knob 62 for operating the panel; and a container 66 having a rear wall 63 and side walls 64 is securely fastened to the inner side of the panel. The top edge of the side walls 64 are curved as at 65 so as to freely slide into the openings 58. One of the containers 66 provides storage for a drinking glass 67 and the other container is utilized for the storage of tooth brushes such as 68.

The complete casing or assembly may be secured to the wall in any desired manner, but I have shown a preferred method seen best in FIG. 4. The sides 69 of the openings 58 are faced with a front flange plate 70 adapted to abut with the face 10 of the wall in an overlapping relationship. Mounted outwardly of the sides 69 are V-shaped spring clips 71 suitably secured thereto by small cleats 72. Upon insertion into the wall opening, the spring clips spring open such that the free arm 73 thereof pro-

jects beyond and inwardly of the opening, thus preventing the withdrawal of the assembly.

From the foregoing, it is believed that the construction, operation and advantages of this invention will be fully apparent. However, since numerous modifications will occur to those skilled in the art, it is not desired to limit the construction exactly to that shown and described, and accordingly, modifications and equivalents may be resorted to, falling within the scope of the appended claims.

I claim:

1. An electrically operated tooth paste dispenser having a cabinet of rectangular cross-section, a cylindrical sleeve mounted vertically within the cabinet, said sleeve being open at the upper end and having a necked down opening at the lower end, a collapsible tube of tooth paste disposed in said sleeve, a second sleeve slideably engaging over the first mentioned sleeve and having a closed top and lugs at its lower end to support said first sleeve, a compression spring mounted between the closed top of said second sleeve and the tube of tooth paste in said first sleeve, a cylinder horizontally mounted beneath the first mentioned sleeve and communicating with the necked down opening thereof, said cylinder rotatably mounting a screw conveyor therein for propelling tooth paste outwardly of one end of the cylinder, said one end terminating with a dispensing tube projecting outwardly through the front of the cabinet, electric means for selectively rotating said screw conveyor, said cabinet being extended beneath the said paste dispensing tube, a rotatable soap dish mounted in the extended portion of the cabinet and said cabinet

having compartments at each side of said extended portion for a drinking glass and tooth brushes, and aligned slots formed in said first and second sleeves and the front wall of the dispenser to permit inspection of the level of said tube of tooth paste disposed therein.

2. An electrically operated tooth paste dispenser according to claim 1, wherein the electric means is an electric motor and said screw conveyor has a brake drum with a surrounding brake band operated by an electric solenoid to stop the screw conveyor when the electric motor is de-energized and to release the screw conveyor for rotation when the electric motor is energized.

3. An electrically operated tooth paste dispenser according to claim 1, wherein said rotatable soap dish comprises an inverted hemi-spherical member, a vertical tube upstanding from the centre of said member and projecting therethrough, ball bearings mounted in each end of the tube, compression springs disposed inwardly of the tube for urging the bearings outwardly thereof, bearing pads disposed in the top and bottom of the extended portion of the dispenser to receive the outwardly protruding ball bearings and permit the soap dish to freely rotate on a vertical axis.

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