July 16, 1946. D. ZANOLLI 2,404,119

DISPENSER

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FIG-2

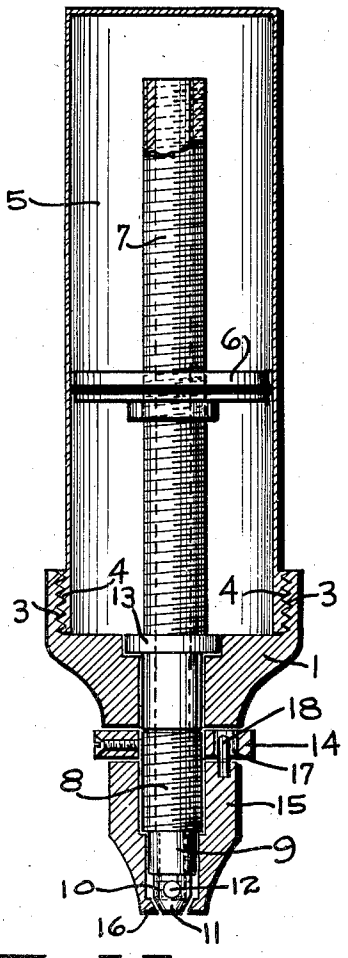



FIG-1

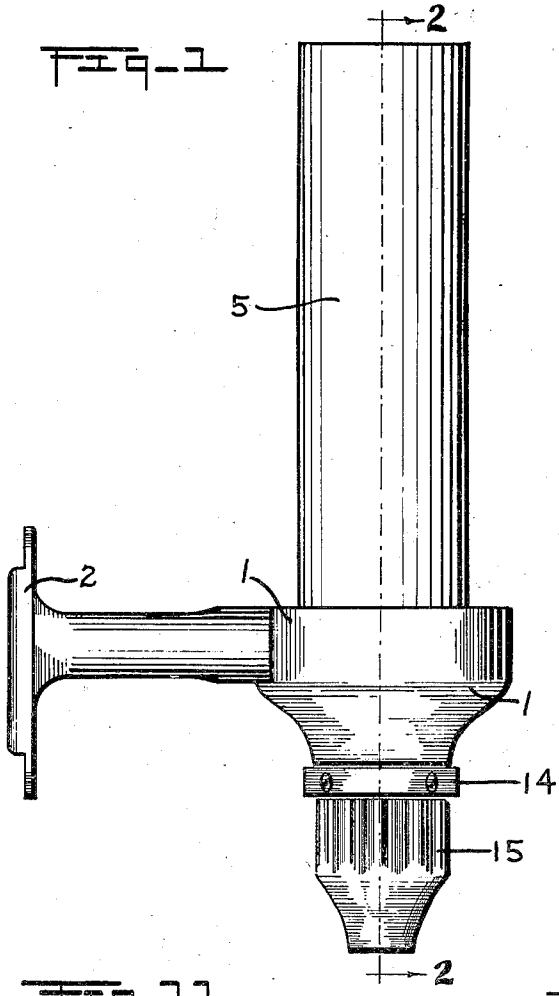



FIG-11

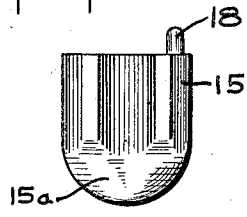
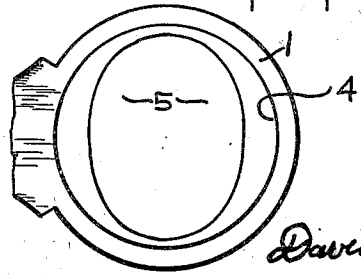



FIG-12




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DISPENSER

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FIG-3

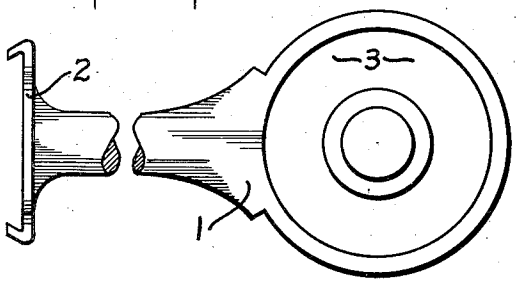



FIG-4

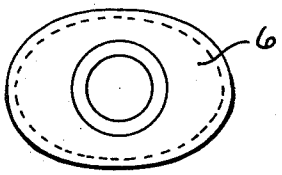



FIG-5

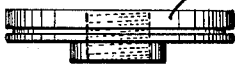



FIG-7

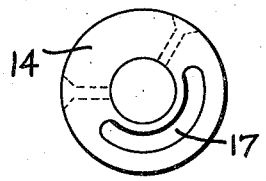



FIG-6

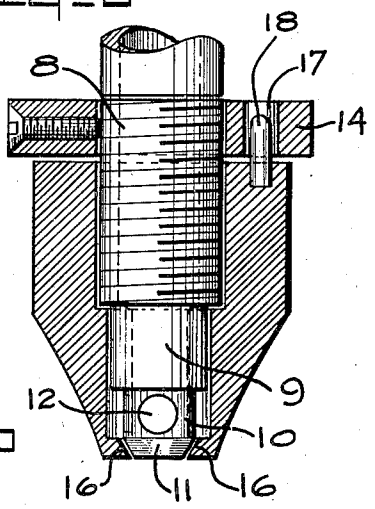



FIG-8

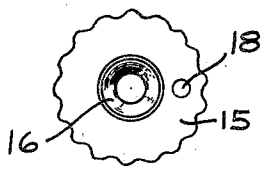



FIG-10

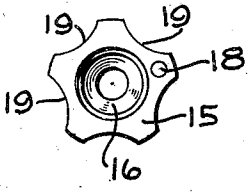
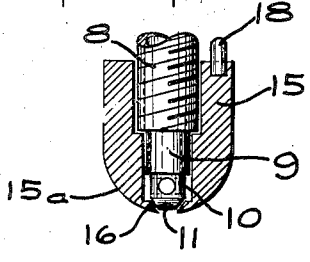



FIG-9




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# UNITED STATES PATENT OFFICE

2,404,119

## DISPENSER

David Zanolli, San Francisco, Calif.

Application June 13, 1944, Serial No. 540,100

5 Claims. (Cl. 222—390)

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This invention relates to dispensers for liquid soap, face cream, tooth paste and the like; the main objects being to provide a dispenser of this type arranged so that the contents may be dispensed in desired quantities, one having means to prevent residue material from adhering to and hardening on and about the discharge end of the dispenser and which retains the material immune from contamination and one which may be easily and quickly recharged. The dispenser possesses other features of advantage, some of which, together with the foregoing, will be specifically set forth in the detailed description hereto annexed. It is to be understood that the invention is not to be limited to the specific form thereof herein shown and described as various other embodiments thereof may be employed within the scope of the appended claims.

Referring to the drawings:

Figure 1 is a side elevational view of the device.

Figure 2 is a sectional elevation of the dispenser, on line 2—2 of Figure 1.

Figure 3 is a top plan view of the base of the dispenser.

Figure 4 is a top plan view of the piston of the dispenser.

Figure 5 is a side elevation of the piston.

Figure 6 is a sectional side elevation showing the discharge spout of the dispenser.

Figure 7 is a top plan view of the collar for turning the piston rod of the receptacle.

Figure 8 is a top plan view of the spout shown in Figure 6.

Figure 9 is a sectional side elevation of a spout, showing the modification of detail of the discharge end thereof.

Figure 10 is a top plan view of the modified spout with the piston rod removed.

Figure 11 is a side elevation of a modified form of the spout.

Figure 12 is a top plan view, partly broken away, of the dispenser shown in Figure 1 to illustrate the cross-sectional shape of the receptacle of the dispenser.

Referring particularly to the numerals of reference on the drawings, the dispenser comprises a base 1 from which a bracket 2 projects horizontally, said bracket being arranged for detachable supporting engagement with a wall or other vertical surface in any suitable or conventional manner.

Formed in the upper portion of the base is a tapped socket or recess 3, tapped to receive the correspondingly threaded lower open end 4 of an

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upstanding material receptacle 5 of oval or non-circular form in cross section, as shown in Figure 12, and preferably of glass or suitable transparent plastic.

A piston 6 is slidably but non-turnably disposed in the receptacle, and is threaded on a tubular piston rod 7.

At its upper end the rod is open and terminates short of the top of the receptacle. Below the receptacle, the rod is journaled in the base 1 and projects with a threaded extension 8 some distance below the base. Depending from said extension is a reduced portion 9, from which in turn a reduced nozzle 10 depends, said nozzle terminating in a taper portion 11 and having a lateral opening 12 above the taper communicating with the hollow interior of the piston rod.

A collar 13 on the rod is counter-sunk in the top of the base, while another collar 14 is secured on the rod extension just below the base. A sleeve-like spout 15 is threaded on rod extension 8 and surrounds the nozzle and the taper 11, being formed at its lower end with a correspondingly tapered orifice 16, forming a ground valve seat. The spout is spaced from the orificed portion of the nozzle at all times, but orifice 16 forms a leak-proof fit with taper 11 when the spout is screwed up against the collar 14.

Said collar 14 is formed with an arcuate slot 17 of substantially semicircular extent, a pin 18 upstanding from the spout riding in said slot.

The spout may have vertical ribs or flutes on its upper portion to facilitate turning, as shown in Figures 1 and 8 and formed with a concave taper, or it may be substantially cup shaped, as shown at 15—*a* in Figure 11 and have relatively deep vertical recesses in its upper portion, as shown at 19 in Figure 10.

In operation, assuming that the receptacle is a prefilled replaceable and initially capped member, the cap is first removed and the receptacle screwed into the base, the latter being removed from the wall and inverted, if necessary, to prevent dropping of the material from the receptacle while the latter is being mounted. Before the receptacle is screwed onto the base, the piston is retracted on rod 7 to a point adjacent the base. To dispense material from the receptacle, the spout is first turned in a direction to open the nozzle (or space taper 11 from taper seat 16) as far as the collar slot 17 will permit. Further rotation of the spout in said direction then rotates the collar 14 and piston rod as a unit, causing the piston to rise in the receptacle and force material therefrom into the tubular rod at its

upper end, and thence down the rod and out through opening 12 and past the nozzle and spout.

Residue or excess material issuing from the nozzle has a tendency to cling on the outside and become contaminated. To obviate this undesirable condition, the spout, after a dispensing movement, is turned to close seat 16 against nozzle taper 11. This not only seals the material outlet 12 against contact with the air, but presents a smooth lower surface on the lower end of the spout which may be easily and quickly wiped clean of all material which may be adhered thereto.

Having thus described my invention in detail, what I claim as new and desire to secure by Letters Patent is:

1. A dispenser of the character described having in combination a supporting member provided with a socket portion having an axial bore therein, a container removably mounted in said socket, a tubular rod having an end portion thereof rotatively mounted in said bore, said end portion having a reduced threaded extension provided with a discharge orifice at its extremity, the other end of said rod being in communication with the interior of said container, an internally threaded stop collar removably engaging the threaded reduced extension of said rod, means for preventing relative rotation of said rod and said collar, a feeding member located within the container and having threaded engagement with said rod, and means for imparting rotating movements to said collar, so as to correspondingly rotate said rod and thereby impart axial movements to said feeding member.

2. A dispenser of the character described having in combination a supporting member provided with a socket portion having an axial bore therein, a container removably mounted in said socket, a tubular rod having an end portion thereof rotatively mounted in said bore, said end portion having a discharge orifice therein at its extremity, the other end of said rod being in communication with the interior of said container, a stop collar detachably but non-rotatively secured to the rotatively mounted end portion of said rod at a position outside of said support, a feeding member located within the container and having threaded engagement with said rod, a closure for said discharge orifice rotatively mounted on said rod, and means coupling said closure with said collar, so that rotation of the closure will impart rotative movements to the collar and corresponding movements to said rod and thereby impart axial movement to said feeding member.

3. A dispenser of the character described having in combination a supporting member provided with a socket portion having an axial bore therein, a container removably mounted in said socket, a tubular rod having an end portion thereof rotatively mounted in said bore, said end portion having a discharge orifice therein at its extremity, the other end of said rod being in communication with the interior of said container, a stop collar detachably but non-rotatively secured to the rotatively mounted end portion of said rod at a position outside of said support, a feeding member located within the container and having threaded engagement with said rod, a closure for said discharge orifice rotatively mounted on said rod, and means coupling said closure with said collar, so that rotation of the closure will impart rotative movements to the collar and corresponding movements to said rod and thereby impart axial movement to said feeding member, said coupling means including means providing of limited relative rotation of said closure with respect to said collar.



4. A dispenser of the character described having in combination a supporting member provided with a socket portion having an axial bore therein, a container removably mounted in said socket, a tubular rod having an end portion thereof rotatively mounted in said bore, a feeding member located within the container and having threaded engagement with said rod, said end portion having a discharge orifice therein at its extremity, the other end of said rod being in communication with the interior of said container, a stop collar detachably but non-rotatively secured to the rotatively mounted end portion of said rod at a position outside of said support, a closure for said discharge opening having threaded engagement with the reduced threaded extension of said rod, and means coupling said closure with said collar, so that rotation of the closure will impart rotative movements to the collar and corresponding movements to said rod and thereby impart axial movement to said feeding member.

5. A dispenser of the character described having in combination a supporting member provided with a socket portion having an axial bore therein, a container removably mounted in said socket, a tubular rod having an end portion thereof rotatively mounted in said bore, said end portion having a discharge orifice therein at its extremity, the other end of said rod being in communication with the interior of said container, a stop collar detachably but non-rotatively secured to the rotatively mounted end portion of said rod at a position outside of said support, said collar having an arcuate slot therein, a feeding member located within the container and having threaded engagement with said rod, a closure for said discharge orifice adjustably mounted on said rod and having a pin projected into said arcuate slot, so that limited relative rotative movements of the collar and the closure are provided for, and rotative movement applied to the closure will be imparted to the collar at the end of said limited rotative movement in either direction.

DAVID ZANOLLI.