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H. A. JAVINS

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SOAP DISPENSER

Filed Sept. 25, 1928

Fig. 1

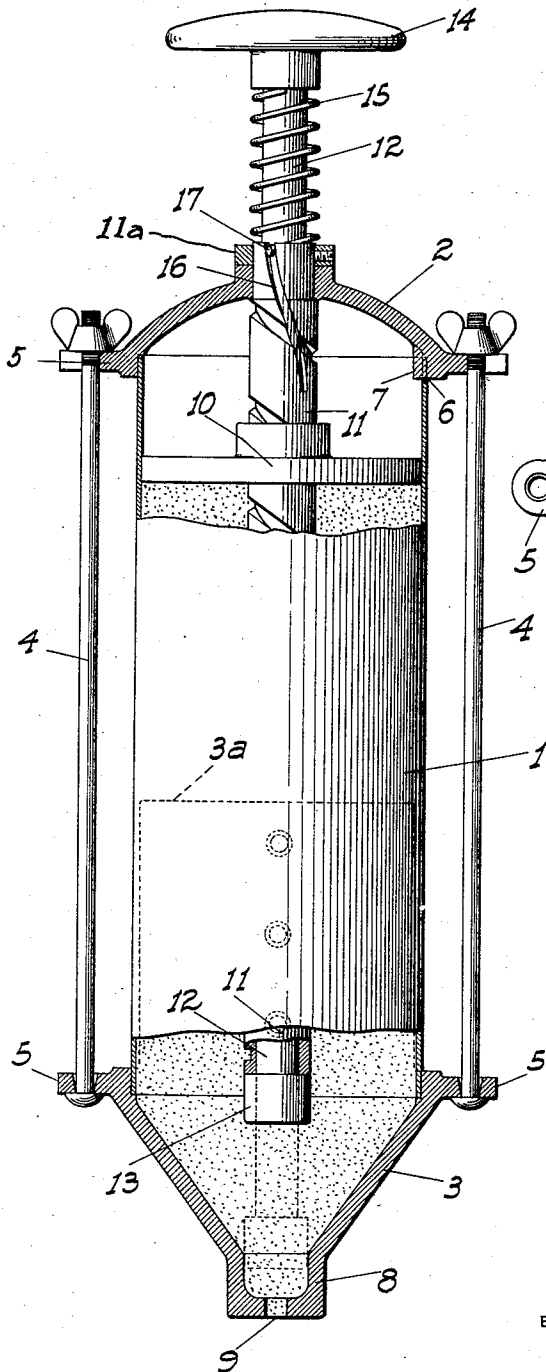


Fig. 2

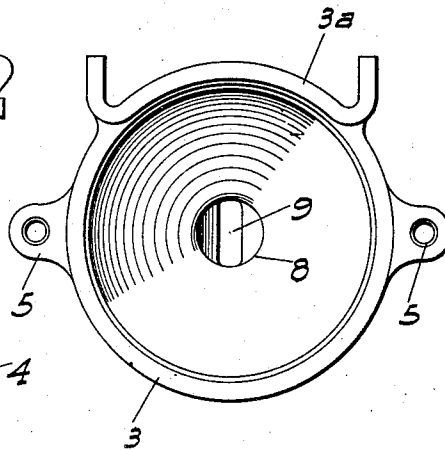
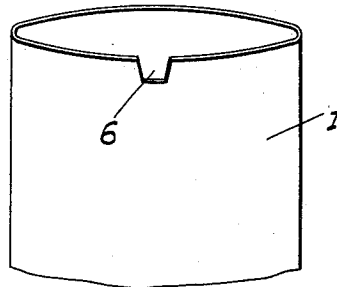


Fig. 3



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SOAP DISPENSER

Application filed September 25, 1928. Serial No. 308,149.

This invention relates to devices for mechanically dispensing semi-solid hand and similar soaps, and particularly to a dispenser to be used in connection with the tubular containers in which certain of such soaps are now marketed.

The principal object of my invention is to provide a dispenser of this general character so constructed that a predetermined quantity of soap will be dispensed with each complete movement of the operating handle, in such a manner that pressure will be exerted simultaneously on top of the mass of soap and toward the bottom of the same near the discharge nozzle as well; and so that the mass of soap will be automatically fed down toward said discharge nozzle with each movement of the handle through the same distance at and in a constant plane relative to the body of the dispenser. This arrangement not only insures the positive feeding of the soap toward the nozzle so that the operator will be assured of a supply whenever he manipulates the handle; but by reason of the pressure being imparted to the soap at vertically spaced points in its mass simultaneously, avoids the necessity of exerting the very heavy pressure on the handle which would otherwise be necessary to force the soap down and which is practically impossible to accomplish with soaps of certain consistencies.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a front elevation of my improved dispenser partly in section.

Fig. 2 is a top plan view of the bottom cap and discharge nozzle member.

Fig. 3 is a fragmentary perspective of the top portion of a special soap container.

Referring now more particularly to the characters of reference on the drawings, the

numeral 1 denotes a tubular soap container, preferably of standard size, and open on top and bottom. This container is adapted to detachably fit in and be engaged by the top and bottom caps 2 and 3 respectively of my dispensing device.

The bottom cap is formed with an upstanding bracket plate 3^a so that it may be attached to a wall or other vertical supporting surface.

The container and the caps are detachably clamped together by vertical screw rods 4 extending between the caps and mounted on radial ears 5 projecting from the sides of the cap. To prevent the user from possibly inserting the soap container of a manufacturer other than that put out by the lessors of the dispenser, the container is preferably notched in its top rim as shown at 6 to engage a lug 7 projecting inwardly from the top cap. A container without a notch therefore, cannot fit the top cap and the parts could not be properly clamped together in the necessary working relationship.

The bottom cap 3 slopes inwardly from the top to a relatively small discharge cup 8 having a nozzle opening 9 at the bottom, which opening is preferably of narrow rectangular form. A plunger 10 of a size to fit snugly in the container is threaded onto a screw shaft 11 which is journaled against longitudinal movement in the cap 2 by reason of a shoulder on the shaft below the cap, and a collar 11^a on said shaft above the cap. This screw shaft is tubular and an operating rod 12 passing entirely through the same, terminating at its lower end in a head or primary plunger 13 of a size to fit the cup 8. On its upper end some distance above the cap, is an operating knob or the like 14. A compression spring 15 between the knob and the cap holds the knob and rod raised so that the head 13 is normally held against the bottom of the screw shaft. The rod is both turnable and slidable in the shaft, and the latter has a spiral slot 16 extending downwardly from its top a distance equal to the possible vertical movement of the rod, the latter having a pin 17 constantly engaging the slot.

The length of the screw shaft is substantially the same as that of the container or so

that the lower end of said shaft and the head 13 are normally adjacent the top of the bottom cap. The position of the cup relative to the head when the rod is fully retracted, and the full length stroke of the rod are so proportioned, that when said rod is fully depressed, the head 13 will be engaged with the cup.

In operation when a full container has been mounted in place, the plunger 10 is first depressed into the container so that its contents are depressed sufficiently to fill the bottom cap. As the knob 14 is then depressed, the head 13 will be depressed also, causing a certain amount of soap to be discharged through the opening 9 in the form of a ribbon.

At the same time the movement of the pin 17 down the spiral slot 16 causes the screw shaft 11 to be rotated somewhat. The direction of cut of the slot relative to that of the threads is such that with such rotation, the plunger will be depressed in the container, the frictional engagement of the plunger with the soap and the pressure of the threads of the shaft thereon, prevent said plunger from any tendency to merely turn with the shaft. The pitch of the threads is so proportioned that the plunger will be depressed just sufficient to compensate for the amount of soap discharged through the nozzle. Downward pressure is thus exerted simultaneously on the mass of soap both at top and bottom, greatly facilitating the discharge movement thereof. Also the movement of the head 13 forms a temporary hole in the soap toward the bottom, which hole is of course filled in during a subsequent stroke and before the head 13 reaches the bottom of its stroke.

This arrangement keeps the mass of soap more or less agitated with every discharge movement thereof, and tends to prevent the same from hardening and caking. Upon releasing the knob the spring acts to raise the rod, which then turns somewhat as the pin 17 moves through the slot 16, without rotating the screw shaft, which remains stationary with the plunger constantly engaging the top of the soap body.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A dispenser including top and bottom caps arranged to hold a tubular container therebetween, a discharge opening in the bot-

tom cap, a plunger to fit the container above the material therein, a primary plunger below said first named plunger, and alined with the discharge opening, means for moving the primary plunger toward the opening to cause material to be discharged therefrom, and means whereby at the same time the upper plunger will, if both plungers are held against rotation, be moved toward said opening a distance constantly proportionate to the movement of the primary plunger with each discharging movement of the latter.

2. A dispenser including top and bottom caps arranged to hold a tubular container therebetween, a discharge opening in the bottom cap, a plunger to fit the container above the material therein, a primary plunger below said first named plunger, and alined with the discharge opening, and an operating mechanism for simultaneously depressing both plungers different but constantly proportionate amounts if both plungers are held against rotation.

3. A dispenser including top and bottom caps arranged to hold a tubular container therebetween, a discharge opening in the bottom cap, a plunger to fit the container above the material therein, a primary plunger below said first named plunger, and alined with the discharge opening, and an operating mechanism for simultaneously depressing both plungers, the primary plunger being of smaller size than the upper plunger, and means provided with such mechanism for causing any depressing movement of the upper plunger to always be proportionately less than that of the primary plunger.

4. A dispenser including top and bottom caps arranged to hold a tubular container therebetween, a discharge opening in the bottom cap, a plunger to fit the container above the material therein, a hollow screw shaft depending from and turnably mounted in the top cap and onto which said plunger is threaded, a depressible rod projecting entirely through the shaft to a point above the top cap, a head on the lower end of the rod forming a primary plunger alined with the discharge opening, and means functioning with the depression of the rod if said rod and the plunger are held against rotation for causing the shaft to be rotated through a certain arc and the upper plunger advanced toward the bottom cap.

5. A structure as in claim 4, in which said means comprises a pin projecting from the rod, said pin engaging a spiral slot formed in the shaft.

In testimony whereof I affix my signature.

HARRY A. JAVINS.

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