June 19, 1928. 1,673,827

S. M. HURTT ET AL

DISPENSER FOR SOAP AND OTHER MATERIALS

Filed Sept. 13, 1922

FIG. 3.

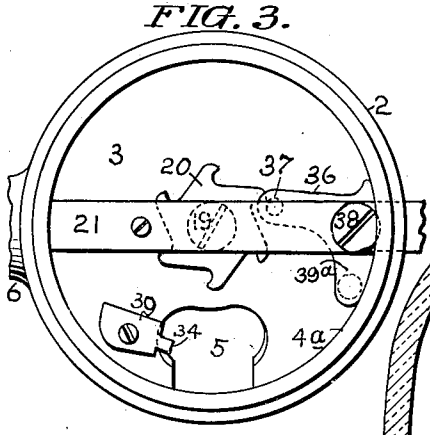


FIG. 1.

FIG. 4.

FIG. 2.

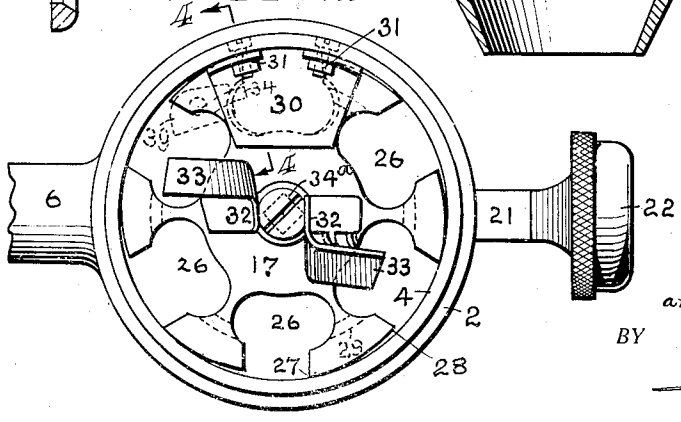
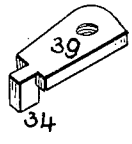


FIG. 5.



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UNITED STATES PATENT OFFICE.

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DISPENSER FOR SOAP AND OTHER MATERIALS.

Application filed September 13, 1922. Serial No. 587,899.

The object of our invention is to provide an effective and durable dispenser mechanism for dispensing soap or other substances in powdered form and in measured quantities upon the manual operation of a movable part thereof.

Our object is further to eliminate springs and devices of uncertain action in those parts of the machine which directly operate upon the materials being dispensed.

A further object is to provide the metal operative parts and main frame carrying them with a glass or other transparent vessel acting as a container for holding the materials which are to be fed to the measuring and discharging means.

As an additional object, we provide a rotatable device for acting upon the material within the container in such manner that it tends to lift and thereby loosen it to prevent packing and consequent retarding of the free movement to the measuring and discharging means which is necessary to a successful use of our invention.

With the above and other objects in view, the nature of which will be more fully understood from the description hereinafter, the invention consists in the novel construction of dispenser for soap and other materials, as hereinafter more fully described and defined in the claims.

Referring to the drawing: Fig. 1 is a vertical section through our improved dispensing machine; Fig. 2 is a plan view of the same with the container removed; Fig. 3 is an inverted or under view with the discharge nozzle removed and with portions broken away; Fig. 4 is a vertical section through the machine at the discharging portion thereof taken on line 4—4 of Fig. 2; and Fig. 5 is a perspective view of a detail of the discharging means.

2 is a circular body part or main frame, having a transverse diaphragm 3 and a lateral bracket 6 flanged at its outer end as at 7, by which the machine as a whole may be secured to the wall or other place of support. 9 is a conical discharge nozzle screwed upon and extending downward from the lower side of the circular body 2. The materials to be dispensed are contained in a glass vessel 12 fitted at its bottom with a metallic ring 10 which is detachably screwed at 11 upon the upper part of the circular body. The glass vessel 12 may be permanently secured to the ring 10 by cement 16. The upper and open end of the glass vessel 12 may be provided with a cap or closure 13 which may also be of glass and form a ground joint 14 with the vessel neck to keep out dampness from the contents of the machine.

17 is a measuring disk resting upon the diaphragm 3 and centered by having a hub 18 fitting a central bearing aperture in the diaphragm. This disk has secured upon the lower part of its hub 18 a ratchet wheel 20, said wheel being in the compartment below the diaphragm and held to the hub by the screw 19. The body 2 is provided with a horizontal push bar 21 provided at the outer end with a push head 22 upon which the pressure of the hand is applied. The other end of the bar is acted upon by a spring 23 arranged within a chamber 24 in the bracket 6 and confined therein by the plug 25. This spring 23 normally brings the parts to the condition shown in Fig. 1. Pivoted to the push bar 21 at 38 is a T shaped pawl 36 (Fig. 3) having on one arm a pin 37 engaging the ratchet wheel 20 and having the other arm 39^a shaped to extend to opposite sides of the pivot 38, to fit against the inner wall 4^a of the circular body 2 to bring the pawl into engaging position when the push bar 21 is in out position, as shown, thereby dispensing with springs other than the main spring 23. Each reciprocation of the bar 21 rotates the ratchet wheel 20 through an arc between two adjacent teeth and this intermittent action causes the measuring disk 17 to be correspondingly moved. This disk 17 has six measuring spaces 26 arranged circumferentially and open to the perimeter of the disk leaving T shaped radiating portions which travel close to the inner wall 4 of the body frame 2. The forward edge 27 of these T shaped parts is shaped to substantially scrape the wall 4 and the perimeter or outer surface is slightly eccentric as at 28 (Fig. 2) to provide clearance and prevent binding. 5 is an aperture in the dia-

phragm 3 and is radially positioned so that the measuring spaces 26 successively come into alinement with it when discharging their contents into the nozzle 9 below. A covering plate 30 is secured at 31 to the side wall of the frame 2 and is positioned close to the top of the disk 17 and being in alinement with the aperture 5 in the diaphragm 3, acts as a cut off to the material 15 above the disk when the spaces 26 of the latter come into alinement with the aperture 5. In this manner only the contents of the spaces 26 are successively dropped or discharged.

As some substances in a finely divided condition readily pack and hence would not freely and positively insure their discharge from the spaces 26, we provide a simple means for disturbing the material so that it readily drops by gravity. This means consists of a finger 34 extending from a plate 39 fastened to the under surface of the diaphragm 3, said finger projecting slightly above the upper surface of the diaphragm and in line with a curved groove 29 on the under surfaces of the T shaped portions of the disk. It will be understood that as the disk rotates, the material in the space 26 is moved into contact with the finger 34 and is thereby ruptured to such an extent that its weakened under portion permits the entire mass to fall by gravity and thereby insure a positive discharge.

A bent U shaped frame 32 is bolted at 34a firmly to the top of the disk 17 and rotates with it. This frame extends upward into the vessel 12 and is provided on each arm with a series of flat blades 33 whose surfaces are inclined like a propeller and tend to lift the material 15 in the glass vessel 12, thus preventing the tendency to pack. These blades 33 also droop at their outer ends so that the lifting effort is also at various places vertically considered. In this manner the material is kept in a light powdered condition capable of readily feeding downward into the spaces 26 of the measuring disk 17, but without objectionable packing and clogging of the machine.

While our invention is more particularly intended for dispensing powdered soap in lavatories, it may be employed for dispensing any other material in powdered or finely granulated condition, and we in no wise restrict ourselves to the use to which it may be put.

It will now be apparent that we have devised a novel and useful construction which embodies the features of advantage enumerated as desirable, and while we have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that we do not restrict ourselves to the details, as the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention.

Having now described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a dispensing machine for materials in subdivided condition, a circular frame having a vessel at its upper part and a discharge outlet at its lower part and a diaphragm intermediate of them provided with a discharge orifice, a rotatable disk within the circular frame above the diaphragm and having a plurality of measuring spaces adjacent to its perimeter, manually operable means for imparting an intermittent step by step motion to the disk, to bring the spaces therein successively over the orifice in the diaphragm, a stationary plate above the disk in alinement with the orifice in the diaphragm, and an upwardly extending projecting part extending above the upper surface of the diaphragm and positioned in alinement with the orifice in said diaphragm against which the materials conveyed by the spaces in the disk are brought into contact for releasing it.

2. The invention according to claim 1, wherein further the underside of the disk is provided with grooves extending circumferentially from space to space and into which the upwardly extending finger projects.

3. The invention according to claim 1, wherein further the disk is provided with T shaped portions extending radially between the measuring spaces, each having its forward edge beveled to provide a cutting edge close to the inner wall of the circular frame and its outer surface or perimeter made eccentric to provide a clearance to the rear of the cutting edge.

4. The invention according to claim 1, wherein further the means for imparting an intermittent movement to the disk consists of a ratchet wheel below the diaphragm, a push rod, a spring to move the rod in one direction, and a pawl pivoted to the push rod and having one arm adapted to engage the teeth of the ratchet wheel and another arm extending to opposite sides of the pivot and engaging the inner wall of the circular frame to act as a stop for the push rod and to position the pawl for engagement with the ratchet wheel.

5. In a dispensing machine for materials in sub-divided condition, a circular frame having a vessel at its upper part and a discharge outlet at its lower part, and a diaphragm intermediate of them provided with a discharge orifice, a rotatable disk within the circular frame above the diaphragm and provided with T shaped portions extending radially about the perimeter of the disk and forming measuring spaces between them opening radially between the T shaped por-

tions, the latter each having its forward edge bevelled to provide a cutting edge close to the inner wall of the circular frame and its outer surface or perimeter made eccentric to provide a clearance to the rear of the cutting edge, and manually operable means for imparting an intermittent step by step motion to the disk to bring the spaces therein successively over the orifice in the diaphragm.

In testimony of which invention, I hereunto set my hand.

SPENCER M. HURTT.

In testimony of which invention, I hereunto set my hand.

JOHN C. NUGENT.