

Nov. 17, 1931.

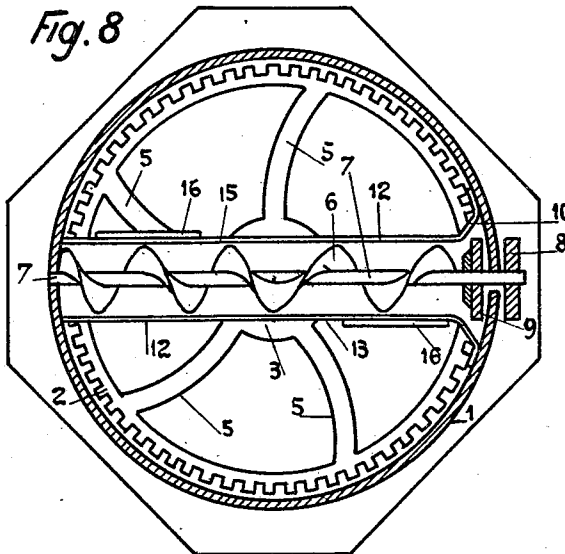
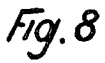
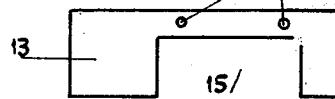
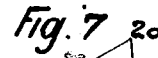
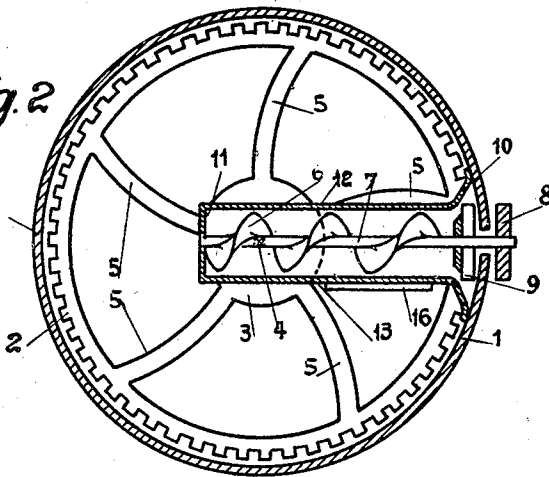
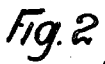
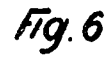
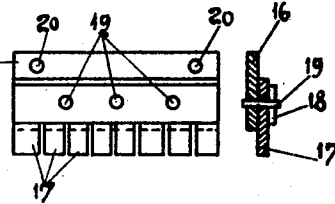
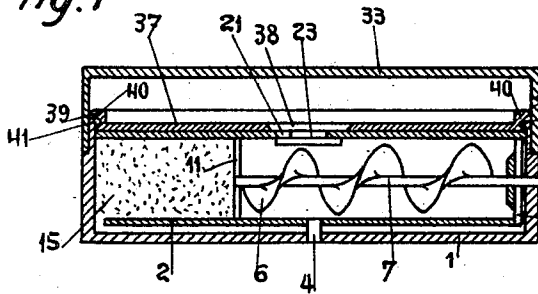
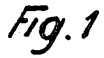
J. E. B. MAILLARD

1,832,313

DISPENSER FOR PULVERULENT AND PASTY SUBSTANCES

Filed Aug. 14, 1929

2 Sheets-Sheet 1



Inventor:
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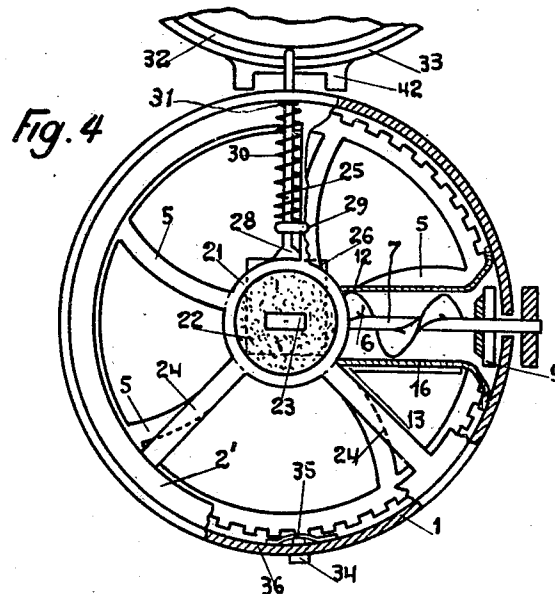
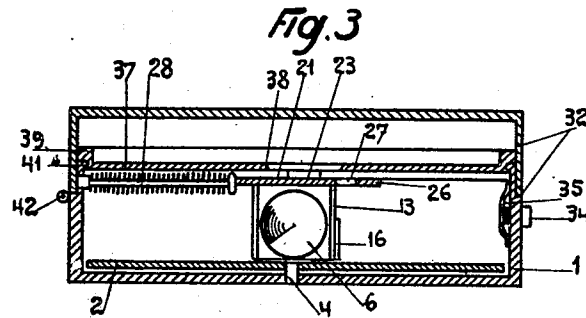
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DISPENSER FOR PULVERULENT AND PASTY SUBSTANCES

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UNITED STATES PATENT OFFICE

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DISPENSER FOR PULVERULENT AND PASTY SUBSTANCES

Application filed August 14, 1929, Serial No. 385,766, and in France August 14, 1928.

This invention relates to a dispenser or distributor suitable for pulverulent and pasty products of all kinds such as face powder, rouge, soaps in powder or paste, tooth powders, talc and other materials.

Apparatus constructed for this purpose usually comprises a receptacle from which the product issues, a perforated top on the receptacle and a spring-pressed piston for discharging the product. Charging the apparatus is a rather complicated matter, and in the case of rice powder for example, a certain amount slips round behind the piston. Moreover, in the case of powder puff boxes the powder tends to collect towards the periphery of the box and to be scattered by the powder-puff.

If the powder issues in excess, it is practically impossible to return it to the interior of the box. The powder issues through the perforations in a finely divided condition, and its adhesion to the powder puff is reduced, so that some of it drops off onto the clothing.

One of the objects of the present invention is to obviate these inconveniences.

By way of example, constructional forms of distributor embodying the foregoing and other features of the invention are illustrated in the accompanying drawings.

Fig. 1 represents a powder box in vertical section.

Fig. 2 is a sectional plan of the bottom of the container showing the large pinion and worm conveyor.

Fig. 3 is a vertical section across the worm, showing the manner in which the discharge orifice for the product is closed.

Fig. 4 is a sectional plan of the open box, the movable tray being removed for the sake of clearness.

Fig. 5 is a front elevation and section of a retaining plate for the powder.

Fig. 6 is a front elevation of the front wall for the worm conveyor casing.

Fig. 7 is a front elevation of the rear wall of said casing.

Fig. 8 is a plan of the lower portion of a powder box, with the large pinion and worm conveyor extending right across the diam-

eter of the box and having oppositely wound vanes.

The illustrative embodiment of the invention shown in Figs. 1 to 7 comprises a case or box provided with a lower compartment 1, in the bottom of which turns a gear wheel 2 having a hub 3 and pivot pin 4, the spokes 5 of said wheel being curved with the concave side facing the direction of rotation. A worm conveyor 6, is mounted on a shaft 7, Figs. 1 and 2, said shaft also carrying a knob 8 for actuating the conveyor and a pinion 9 meshing with and transmitting movement to the aforesaid wheel 2 when the shaft is rotated by means of the knob 8.

The inner end of the shaft 7 is journaled in a plate 11 forming the inner end wall of a container or casing 10 enclosing the worm conveyor 6. One side wall 12 of the casing 10 is cut away at 14, see Fig. 6, to enable the spokes 5 to feed the powder in the compartment 1 to the conveyor within the casing. The opposite side wall 13 of said casing is provided with a cut away portion 15, see Fig. 7, in front of which is disposed a retaining plate 16. There is sufficient clearance below the plates 11, 13 and 16 to allow the spokes 5 of the wheel 2 to pass. Said plate 16 is secured by screws 20 to the side plate 13 and to said plate 16 are secured flexible strips or teeth 17 of spring steel or rubber for example, said flexible strips being held in position between said plate 16 and a counter plate 18 by screws 19. The flexible strips or teeth 17 extend downwardly into the path of movement of the spokes 5 of the wheel 2, said strips or teeth yielding to give passage to said spokes but tending to prevent passage of the powder which is thus retained in proximity to the worm conveyor which is thus always assured a supply of powder to be fed or conveyed thereby.

Directly above the worm conveyor 6 in the center of the compartment 1, is a small platform 21 which may conveniently be faced with smooth velvet or leather 22 and which is provided with a discharge port 23 through which the powder can be discharged by operation of the conveyor. The platform 21 is supported and attached to

the body of the container 1 by arms 24, 25 of a spider 2', see Fig. 4. A closure is provided for the discharge port 23, said closure herein comprising a sliding plate 26 provided with an opening 27 and carried by a rod 28 which slides in a guide 29 on an arm 25, the free end of said rod projecting outwardly through the container wall.

The lid or cover 33 is hinged at 42, see Fig. 3, to the lower container 1. When the box is closed a spiral spring 30, which encircles the rod 28 between the guide 29 and a shoulder 31 on said rod, see Fig. 4, tends to push said rod toward the left, viewing Fig. 3, the end of the rod thus pressing against the inside of the rim 32 of the lid 33. The lid is fastened in closed position by a spring catch 35 controlled by a push knob 34, the free end 36 of the spring catch 35 engaging in a recess in the rim 32 and in this position, the discharge port 23 is closed by the solid portion of the sliding plate 26.

On pressure being applied to the knob 34, the catch 35 recedes and releases the lid 33, which opens automatically in response to the pressure exerted by the end of the rod 28 on the rim 32 of the lid, under action of the spring 30. The rod 28 and attached sliding plate 26 are thus moved to the left, viewing Fig. 3, and the discharge port or opening 27 in said sliding plate 26 then registers with the discharge opening 23 in the platform 21, thus permitting the powder in the casing 10 to escape on being subjected to the thrust of the worm conveyor 6.

A removable disk 37, which rests upon the platform 21 is provided with a central opening 38 preferably of a slightly smaller diameter than that of said platform, said opening 38 registering with the opening 23 in said platform. Said disk 37 is provided with a raised rim 39 to constitute a tray to receive a puff or compact pad. Said tray is easily removable to enable the apparatus to be charged, it being for this purpose provided at its perimeter 39 with a groove 40 adapted to snap over a small bead 41 on the inner edge of the container 1.

In Fig. 8, the worm conveyor 6 is shown as extending throughout the full diameter of the container 1. The vanes of the conveyor at opposite sides of the center of the shaft 7 are oppositely wound, the construction and arrangement being such that as the conveyor is rotated the two worms will feed the powder from opposite directions to the central discharge port 23. The conveyor casing 10 also extends throughout the full width of the container and is provided with duplicates of the construction shown in Figs. 5, 6 and 7, as will be readily understood by those skilled in the art without further description.

In operation the disk 37 having been removed, the compartment 1 charged with powder and the disk replaced, the lid 33 will be

closed and will be held closed by the snap fastener 35. By pressing upon the knob 34 the catch 35 will be released and under action of the spring-pressed rod 28 the lid 33 will be raised and simultaneously the port 27 in the plate 26 will be brought into registration with the discharge port 23 and the central opening in the disk 37. If now the knob 8 be turned in a clockwise direction, viewing said knob from the right of Figs. 1 and 8, the shaft 7 through the pinion 9 and gear teeth on the wheel 2, will cause said wheel to rotate in a clockwise direction, viewing Figs. 2 and 8, and the arms 5 will feed the powder in the container 1 to the worm 6 in the casing 10, the flexible teeth 17 retaining the powder within the casing within reach of the conveyor while permitting the spokes 5 to pass freely. Rotation of the knob 8 also produces rotation of the worm 6 which thus feeds the powder from the container 1 and discharges it to the discharge port 23, where it is available for use by means of the puff or pad resting on the disk 37 or in any other suitable manner.

It will be understood that the several embodiments are given merely by way of example, and that they may be varied without departing from the scope of the invention. It will also be understood that any suitable materials for example metals, wood, plastic materials and cardboard, may be employed in making the various parts described.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:

1. In dispensing apparatus, in combination, a compartment for the material to be dispensed, said compartment communicating with a discharge port; worm feeding means to feed material from different parts of said compartment to said discharge port; means to feed material in said compartment to said worm feeding means; operating means for said two feeding means; a closure for said discharge port, movable to open and close said port; a cover for said compartment movable to open and closed position; and actuating means for said closure operable by opening and closing said cover, to open and close said discharge port.

2. In dispensing apparatus, in combination, a compartment for the material to be dispensed, said compartment communicating with a discharge port; worm feeding means to feed material from different parts of said compartment to said discharge port; means to feed material in said compartment to said worm feeding means; and means to retain material fed to said worm feeding means within feeding reach of the latter.

3. In dispensing apparatus, in combination, a compartment for the material to be dispensed, said compartment communicating

with a discharge port; worm feeding means, comprising oppositely wound worms respectively at opposite sides of said port in operative relation thereto to feed therethrough material in said compartment; and operating means for said worm feeding means.

4. In dispensing apparatus, in combination, a compartment for the material to be dispensed, said compartment communicating with a discharge port; worm feeding means, comprising oppositely wound worms respectively at opposite sides of said port in operative relation thereto to feed therethrough material in said compartment; and means to feed material in said compartment to said worm feeding means.

5. In dispensing apparatus, in combination, a compartment for the material to be dispensed, said compartment communicating with a discharge port; worm feeding means, comprising oppositely wound worms respectively at opposite sides of said port in operative relation thereto to feed therethrough material in said compartment; means to feed material in said compartment to said worm feeding means; and common operating means for said worm feeding means and said means to feed material to the latter.

6. In dispensing apparatus, in combination, a compartment for the material to be dispensed, said compartment communicating with a discharge port; worm feeding means, comprising oppositely wound worms respectively at opposite sides of said port in operative relation thereto, to feed therethrough material from said compartment; means to feed material in said compartment to said worm feeding means; and means to retain material fed to said worm feeding means within feeding reach of the latter.

7. In dispensing apparatus, in combination, a compartment for the material to be dispensed, said compartment communicating with a discharge port; worm feeding means, comprising oppositely wound worms, to feed material from said compartment to said discharge port; means to feed material in said compartment to said worm feeding means; operating means for said worm feeding means and said means for feeding material thereto; a closure for said discharge port, movable to open and close said port; a cover for said compartment movable to open and closed position; and actuating means for said closure operable by opening and closing said cover, to open and close said discharge port.

8. In dispensing apparatus, in combination, a compartment for the material to be dispensed communicating with a discharge port; means to feed the material from said compartment to said discharge port; means to feed the material in said compartment to said first-named feeding means; and means to retain within reach of said first-named feeding means, material fed thereto.

9. In dispensing apparatus, in combination, a compartment for the material to be dispensed communicating with a discharge port; means comprising a worm to feed the material from said compartment to said discharge port; means to feed material in said compartment to said worm; operating means for said two feeding means; and means to retain within reach of said worm the material fed thereto.

10. Apparatus of the character described having, in combination, a container having a compartment for pulverulent material or the like, a worm conveyor in said compartment parallel to the bottom wall of said container, a casing for said worm, a discharge port opening from said casing to the exterior of said compartment, an inlet port from said compartment to said casing, feeding means for feeding pulverulent material from said compartment to said casing through said inlet port, and means including a part at the exterior of said container for simultaneously and coordinately operating said worm and feeding means.

11. Apparatus of the character described having, in combination, a flattened container having an upper wall spaced from its bottom wall in parallel relation thereto to form a compartment for pulverulent material, an elongated casing in said compartment extending parallel to said bottom wall, said casing having a port opening through said upper wall and a port opening into said compartment, a worm conveyor in said casing, and means including a part at the exterior of said container for rotating said worm.

12. Apparatus of the character described having, in combination, a flattened container having an upper wall spaced from its bottom wall in parallel relation thereto to form a compartment for pulverulent material, an elongated casing in said compartment extending parallel to said bottom wall, said casing having a port opening through said upper wall and a port opening into said compartment, a worm conveyor in said casing, rotary means in said compartment for feeding pulverulent material to said second mentioned port, and means including a part at the exterior of said casing for simultaneously and coordinately operating said worm and rotary feeding means.

13. Apparatus of the character described having, in combination, a flattened container having an upper wall spaced from its bottom wall in parallel relation thereto to form a compartment for pulverulent material, said upper wall having a central opening, a casing in said compartment extending parallel to said upper wall at opposite sides of said opening in communication with the latter, a worm in said casing oppositely pitched portions respectively at opposite sides of said opening,

a port establishing communication between said compartment and casing, and means including a part at the exterior of said casing for rotating said worm.

5 14. Apparatus of the character described having, in combination, a flattened container having an upper wall spaced from its bottom wall in parallel relation thereto to form a
10 compartment for pulverulent material, said upper wall having a central opening, a casing in said compartment extending parallel to said upper wall at opposite sides of said open-
15 ing in communication with the latter, a worm in said casing having oppositely pitched portions respectively at opposite sides of said opening, a port establishing communication
20 between said compartment and casing, means in said compartment for feeding material to said port, and means including a part at the exterior of said casing for rotating said worm.

In testimony whereof, I have signed my name to this specification.

JOSEPH EUGENE BAPTISTE MAILLARD.

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CERTIFICATE OF CORRECTION.

Patent No. 1,832,313.

Granted November 17, 1931, to

JOSEPH EUGENE BAPTISTE MAILLARD.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, line 129, claim 13, after the word "casing" insert the word having; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 22nd day of December, A. D. 1931.

(Seal)

M. J. Moore,
Acting Commissioner of Patents.

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