PATENT OFFICE

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DISPENSER FOR PULVERULENT SUBSTANCES AND THE LIKE

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My invention has for its object a dispenser more particularly adapted to be used in connection with pulverulent substances such as talcum powder, face powder, soap and the like, and from which the dispensing of said substances is effected automatically.

The container preferably comprises a stationary cap-shaped upper portion having an apertured flat bottom, and, below this upper portion a movable frame whose center is provided with a fine-meshed wire-cloth. This movable frame is operatively connected to the cover of the container.

The substance to be dispensed is put into the container through its bottom portion from where it is pushed against the upper apertured part by a coil spring.

With this and other objects in view the invention consists in the construction, combination and arrangement of parts as will be more fully hereinafter described, illustrated in the accompanying drawings, and pointed out in the hereto appended claims.

In the drawings, illustrating by way of example several embodiments of the invention, Figure 1 is a section and Figure 2 a plan view in partial section of the container with open lid; Fig. 3 is a plan view showing the details of the bayonet-joint of the movable lower part; Fig. 4 is section of another embodiment comprising a device whereby the outlet of the powder takes place only from the central portion of the container, and in which the bottom part is provided with an up-turned threaded rim; Fig. 5 is a plan view in partial section of the container shown in Fig. 4 with open lid partially broken away and Fig. 6 is a section through its lower part; Fig. 7 is a plan view in partial section of a container with pinion driven operating mechanism; Fig. 8 is a vertical partial section through the operating mechanism shown in Fig. 7; Fig. 9 is a plan view in partial section of a container in which the distributing mechanism is operated by a hinged handle; Fig. 10 is a part vertical section of the mechanisms shown in Fig. 9; Figs. 11 and 12 are part vertical sections illustrating an operating mechanism comprising blocks mounted for sliding movement upon appropriately shaped slides.

In a preferred construction shown in Figs. 1 to 3, the container comprises a main body portion 1, a stationary cap-shaped upper part 2, and a bottom part 4, removably connected to the main body portion by means of its rolled edge 5.

Connected for free rotary movement to the bottom part 4 by means of a pivot 8, 1 provide a disc 7 carrying a coil spring 6, the upper end of which is connected to a grooved piston 9 provided with rubber packing 10. The powder or other substance to be distributed is laid out upon the upper face 11 of this piston which, under the action of the spring 6, is urged against the apertured flat bottom of part 2. Preferably the upper face of the piston is suitably roughened or covered with a suitable fabric or the like, so as to hold the powder in place and prevent its following the movement of the frame 12, and thus provide a regular and unobstructed passage of the powder through the apertures 3. As shown in Fig. 2, the inner periphery of the movable frame 12 is provided with teeth 13 while its central portion is made up of fine-meshed wire cloth 14, or the like. The frame itself is mounted for rotary movement within the groove 15 provided in the body of casing 1 so that the same shall at all times remain in close contact with the lower apertured face of the cap-shaped part 2. The hinged part 16 of the cover 17 is connected to the frame 12 by means of a lug 18 extending from the latter and through a slot 19 provided in the main body portion 1 of the container; a sliding plate 20 is provided to close the slot 19 so that no spilling of powder may occur through this opening. The lower joint of the hinge 16 is rigidly fixed to the sliding plate 20.

The cover portion 17 is recessed in its central part so as to form a receptacle 21 to hold rouge or a powder puff, or kindred articles. This receptacle is closed by the lid 22 which latter may, if desired, carry a mirror.

In a preferred embodiment the closing and opening of the lower part of the container may be effected as follows: the rolled edge 10.
5 of the bottom plate 4 is provided with notches 24 and 25 (Fig. 3) adapted to engage corresponding ears 26 and 27 upon the main body. When now rotating the bottom plate, said ears will enter the groove formed by the rolled edge 5, while the spring 23 penetrates into the cut-out 29 securely locking the bottom plate in position; to unlock the same a slight pressure is exerted upon the spring 23 and the plate is turned in the opposite direction until the notches 24 and 25 are opposite the ears 26 and 27.

In a modified construction illustrated in Figs. 4 and 5 I have shown the holes provided in the upper cap-shaped portion occupying only a restricted area in the central part thereof: In this way the powder will not be wiped off by the powder puff and spilled outside the container as often happens when the holes are divided over the full area of the bottom of the cap.

In order to prevent the powder from becoming clogged beneath the plain portion of the cap 2, the movable frame 12 comprises helicoidally shaped arms or scrapers 30, 31 fixed to said frame (Fig. 5). These arms, upon rotating the device, continuously return the powder from beneath the plain towards the central aperture portion of the cap 2. Due to the particular shape of the arms it will be readily seen that, in order to return the powder to the central part, the rotation of the device can take place in one direction only. With this result in view, I preferably provide upon the outer periphery of the frame 12 a series of saw teeth 32 cooperating with a pawl 33 mounted upon the hinge 16 of the cover 17 in such a way, that, upon imparting a back and forth movement to the latter, the frame will be rotated in the desired direction. In this embodiment also, the slot 19 is closed by the sliding plate 20.

As shown in Figs. 4 and 6, the bottom plate 4, instead of being connected to the main body portion 1 by bayonet joint may be fixed thereto by either inner or outer thread connection. Figs. 7 and 8 show in detail a modified device which may be used in controlling the movement of frame 12. In this device as in the others the loose powder is held against the movable frame by means of a piston 9 (see Fig. 1) with a spring 6 and carrying disc 7. In this case the movable frame 12 carries a flat extension 18 which is enclosed within a corresponding protuberant hollow part 60 of the main body 1. This boss is so dimensioned as to allow for free back and forth movement being controlled by means of a pinion engaging in holes 100 provided upon the extension 18.

The shaft 110 carrying the pinion 140 extends through an opening 130 cut in the embossed part 69. The inner end of the shaft is carried upon a support 180, while its outer end is provided with a control knob 150 of which the inner face is hollowed out so as to embrace the shape of the protuberant part 60 and bear upon the recesses 170 formed therein. In this way the prominence of the knob is reduced to a minimum, while the free space upon its periphery 160 to be gripped by the fingers is at the same time increased.

When turning the button alternately towards the right and the left, the movable frame 12 will describe a back and forth movement and cause the powder to escape through the holes 3 of the cap-shaped part 2.

Figs. 9 and 10 show in detail a further modified control device for use on a container with a spring pressed piston and plate 7 (see Fig. 1). In the modified control device the back and forth movement of the movable frame 12 is effected by means of a handle 230 which is connected by a hinge 16 to a flat portion 18 extending from the frame 12. A slot 19 provided in the main body part 1 for the passage of the portion 18 is closed up by a sliding plate 20. When not in use, the handle 230 is folded down and securely locked against rotary movement by means of the hook 250 formed upon the outer point of the handle and engaging in this position the rolled edge 5 of the bottom plate 4.

In a further modified construction of the control device for frame 12 shown in Figure 11, the wall of the main body part is constituted by the circular parts 150, 270 and 290 which are suitably connected to the upper and lower parts respectively of the container. A handle 230 with hinges 240 is connected to the part 280, 280 which in turn is connected by a plate 300 to a bolt 340 enclosed within a circular channel formed on one side by the inclined branches 260 and 270 and on the opposite side by the wall 180. The movable frame 12 is connected in any suitable manner, preferably as here shown by riveting thereto a plate 320 and the powder is held in place against the frame by the spring pressed piston and plate 7 (see Fig. 1).

Fig. 12 shows still another form of control device in which the circular wall of the main body is formed by a hollow part 350, 360. Arranged for sliding movement within the part 350, 360, I provide a guide 39 of which an extension, protruding through a slot 37 carries, fixed upon its outer edge, the hinged handle 230. A plate 40 provides upon the opposite edge of the guide 39 extends through a slot 38 to the interior of the body portion 1 and is connected in any suitable manner to the movable frame. The powder is held in place against frame 12 by the spring pressed piston and plate 7 (see Fig. 1).

By rotating handle 230 of the device shown in Figs. 11 and 12 the powder or other substance in the container is pushed upward towards and through the holes 3 provided in the cap-shaped part 2.
It is well understood that the movable rotating or sliding frame inserted between the substance which is to be distributed, and a perforated plate, may be either round, rectangular or any other shape desired and that such plate may describe either a rotary, rectilinear, or any other desired movement.

By turning the container upside down, the spring may be dispensed with as in this case the proper weight of the powder will be sufficient to insure its passing through the holes in the cap-shaped portion of the container. Instead of wire-netting, I may use any other suitable material such as fabric, or the like. The body of the container may be made of any desired material such as wood, metal, cardboard, celluloid, hard rubber and the like.

It is understood that various modifications and changes in the specific form and construction of the various parts can be made without departing from the scope of the following claims.

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

1. A device of the character described having, in combination, a container for pulverulent and like material having a stationary foraminous top wall, a follower piston in said container, spring means for urging said piston toward said foraminous top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container, said frame carrying a screen substantially in contact with the under side of said foraminous top wall, and oscillatory means projecting laterally from said container at one side thereof for imparting rotative movement to said frame.

2. A device of the character described having, in combination, a container for pulverulent and like material having a foraminous top wall, a follower piston in said container, spring means for urging said piston toward said foraminous top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container, said frame carrying a screen substantially in contact with the under side of said foraminous top wall, and oscillatory means projecting laterally from said container at one side thereof for imparting rotative movement to said frame.

3. A device of the character described having, in combination, a container for pulverulent and like material having a foraminous top wall, a follower piston in said container, spring means for urging said piston toward said foraminous top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container, said frame carrying a screen substantially in contact with the under side of said foraminous top wall, a lid for said container mounted thereon for oscillatory movement, and means including a pawl-and-ratchet connection between said lid and frame for imparting rotative movement to the latter from the exterior of said container.

4. A device of the character described having, in combination, a container for pulverulent and like material having a stationary foraminous top wall, a follower piston in said container, spring means for urging said piston toward said foraminous top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container, said frame carrying scraper means and a screen substantially in contact with the under side of said foraminous top wall, and oscillatory means projecting laterally from said container at one side thereof for imparting rotative movement to said frame.

5. A device of the character described having, in combination, a container for pulverulent and like material having a foraminous top wall, a follower piston in said container, spring means for urging said piston toward said foraminous top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container, said frame carrying scraper means and a screen substantially in contact with the under side of said foraminous top wall, and means including a lid for said container for imparting rotative movement to said frame from the exterior of said container.

6. A device of the character described having, in combination, a container for pulverulent and like material having a foraminous top wall, a follower piston in said container, spring means for urging said piston toward said foraminous top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container, said frame carrying scraper means and a screen substantially in contact with the under side of said foraminous top wall, a lid for said container mounted thereon for oscillatory movement and means including a pawl-and-ratchet connection between said lid and frame for imparting rotative movement to the latter from the exterior of said container.

7. A device of the character described having, in combination, a container for pulverulent and like material having a stationary top wall which is provided with a centrally situated foraminous portion, a follower piston in said container, spring means for urging said piston toward said foraminous top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container; said frame carrying a screen substantially in contact with the under side of said top wall at the foraminous portion of the latter, and also carrying scraper members for feeding material from the peripheral portion of said
top wall toward the central portion thereof upon rotation of said frame; and oscillatory means at the exterior of said container for imparting uni-directional relative movement to said frame.

8. A device of the character described having, in combination, a container for pulverulent and like material having a top wall which is provided with a centrally situated foraminous portion, a follower piston in said container, spring means for urging said piston toward said top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container; said frame carrying a screen substantially in contact with the under side of said top wall at the foraminous portion of the latter, and also carrying scraper members for feeding material from the peripheral portion of said top wall toward the central portion thereof upon rotation of said frame; and means including a lid for said container for imparting uni-directional rotation to said frame from the exterior of said container.

9. A device of the character described having in combination, a container for pulverulent and like material having a top wall which is provided with a centrally situated foraminous portion, a follower piston in said container, spring means for urging said piston toward said top wall whereby to force said pulverulent material against said wall, a frame rotatably supported in said container; said frame carrying a screen substantially in contact with the under side of said top wall at the foraminous portion of the latter, and also carrying scraper members for feeding material from the peripheral portion of said top wall toward the central portion thereof upon rotation of said frame; a lid for said container mounted thereon for oscillatory movement, and means including a pawl-and-ratchet connection between said lid and frame for imparting uni-directional rotation to said frame from the exterior of said container.

In testimony whereof, I have signed my name to this specification this 27th day of August, 1928.

CECILE MARIE LOUISE MAILLARD.
CERTIFICATE OF CORRECTION.

Patent No. 1,804,943. Granted May 12, 1931, to

CECILE MARIE LOUISE MAILLARD.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, line 4, claim 7, for the word "relative" read rotative; 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 7th day of July, A. D. 1931.

M. J. Moore,
Acting Commissioner of Patents.