

May 8, 1928.

P. A. REUTTER

1,668,658

POWDER BOX

Filed Aug. 27, 1926

Fig. 1

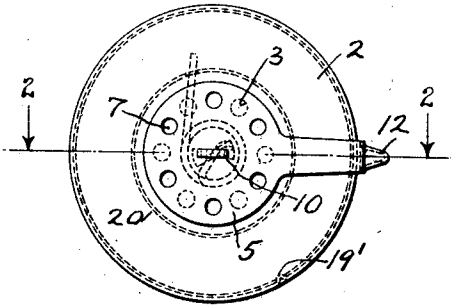


Fig. 2

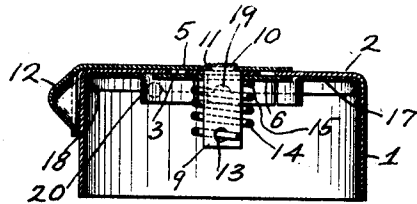


Fig. 3

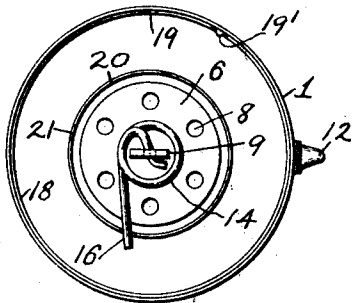


Fig. 4

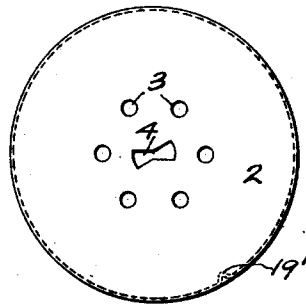


Fig. 5

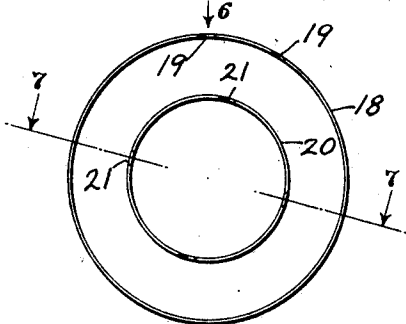
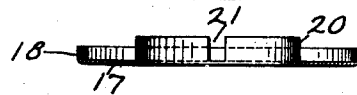


Fig. 6



Fig. 7



INVENTOR

Philip A. Reutter

BY HIS

Philip, Logan & King
ATTORNEYS

UNITED STATES PATENT OFFICE.

PHILIP A. REUTTER, OF WATERBURY, CONNECTICUT, ASSIGNOR TO SCOVILL MANUFACTURING COMPANY, OF WATERBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT.

POWDER BOX.

Application filed August 27, 1926. Serial No. 131,380.

This invention relates to certain improvements in powder containers, and particularly in the dispensing top of such containers.

In certain classes of powder containers such as those, for instance, which are used for dispensing powder containing poisonous or harmful substances, it is desirable that the parts of the container be so constructed and arranged that the dispensing orifice is automatically closed after use and held closed when in non-use so as to prevent accidental discharge of the contents of the container. This automatic closing, furthermore, acts to prevent accidental loss of the contents of any sort of material in powdered form which may be carried in the container.

It is the special object of the present invention to provide an improved dispensing top or cover for such containers in which the dispensing orifice is automatically closed after use, the construction being simple and of few parts so that it can be readily assembled and will be cheap to produce commercially.

With this and other objects not specifically referred to in view, the invention consists in certain novel parts, arrangements and combinations which will be described in connection with the accompanying drawings and the novel features pointed out in the claims hereunto annexed.

In these drawings,—

Figure 1 is a top plan view of the improved closure;

Figure 2 is a vertical central sectional view taken on the line 2—2 of Fig. 1.

Figure 3 is a view looking toward the under side of the closure shown in Fig. 1;

Figure 4 is a plan view of the top of the closure cap;

Figure 5 is a bottom plan view of the abutment plate for holding the spring;

Figure 6 is an end view of the same looking in the direction of arrow 6 of Fig. 5, and

Figure 7 is a detail sectional view taken on the line 7—7 of Fig. 5.

Referring now to these drawings, the closure will include a shell or casing which may be secured to a container, as a can or tin, in any suitable manner, the shell shown being arranged to have a friction fit with the walls of the container, and the

shell being provided with a flange or skirt 1 and with a top 2 provided with distributing openings 3 and a slot 4, hereinafter referred to. In order to prevent leakage of powder through the distributing openings 3 in the top, there is provided a pair of thin flat plates 5, 6, these plates being provided with distributing orifices 7, 8, which are moved simultaneously so as to register with the distributing orifices 3 in the top, so that the contents of the container may be dispensed through these openings.

In the construction shown, one of these plates, as plate 6, is located below the top 2, and the other plate 5 is located above the top 2, these plates having frictional engagement with the face and under side of the top, and being held in close frictional engagement therewith so as to effectually prevent leakage of powder through the orifices when the orifices are closed. In the construction shown, these plates are mounted so as to have a rotative movement relatively to the top, this movement being simultaneous so that both plates are moved at the same time, and the parts are so constructed and arranged that they are automatically returned to closed position after use or during of periods of non-use. In the best constructions, furthermore, these plates are held under tension so as to engage the top of the container with a very close fit to prevent powder leakage.

While various constructions for effecting these objects may be adopted, in the particular construction illustrated, there is provided a shank 9 having a head 10 which passes through slots formed in the plates 5, 6 and through the slot 4 formed in the cover, the head of this shank being fastened to the top plate 5 as by burring, indicated at 11. The shank closely fits the slots of the plates 5, 6, but owing to the butterfly shape of the slot 4 can have a limited movement therein, so that by turning the shank the two plates are simultaneously turned sufficiently to open and close the distributing openings 3 in the top 2. A convenient means for operating the shank is through the top plate 5, which is formed with a finger piece 12 by which it can be readily manipulated. Secured to the shank, as by passing through

a hole 13 therein, is one end of a coil spring 14, so that when the shank is turned this spring is put under tension. This coil spring, furthermore, as shown, surrounds the shank, and a coil, as 15, of the spring bears against the under side of the plate 6 and thus forces this plate into close engagement with the under side of the top 2.

The coil spring 14 has a free end 16, and this free end is secured to an abutment, so that when pressure is taken off the operating handle 12 the recoiling of the spring against the abutment will cause the shank to rotate and move the plates to close the orifices 3 in the top of the closure. While this abutment may take various forms, in the particular construction shown, there is provided a plate 17 having a peripheral flange 18 by which it may be frictionally engaged in the top 2 of the closure. If desired, notches 19, see Fig. 5, may be provided in which engage projections 19' (Fig. 3) for securely holding the plate in place. Centrally this plate is provided with a skirt or flange 20 which has narrow recesses 21, a plurality of such recesses, as four, being provided for convenience in assembling. The free end 16 of this spring is seated in one of these recesses, and when the spring is put under compression by turning the shank, and the latter is then released, the spring causes a rotary movement of the shank in the reverse direction and a consequent closing movement of the plates.

With the construction shown and described, a very simple and efficient automatic closure has been provided, and while the invention has been shown in its preferred form, it will be understood that various changes may be made in the shape and arrangement of the parts without departing from the invention as defined in the appended claims.

What I claim is:

1. In a device of the character described, the combination of a container having a top provided with dispensing orifices, a disc above the top having dispensing orifices and in close frictional engagement with the top, a disc below the top having dispensing orifices and in close frictional engagement with the under surface of the top, a shank passing through the discs and secured to one of them, means for simultaneously rotating the discs, and a spring engaging with the shank and acting to press the discs into close frictional engagement with the top and put under tension by the rotation of the discs in one direction and acting to return the discs to closing position after they have been rotated.

2. In a device of the character described, the combination of a container having a top provided with dispensing orifices, a disc above the top having dispensing orifices and in close frictional engagement with the top, a handle formed integrally with the disc, a disc below the top having dispensing orifices and in close frictional engagement with the under surface of the top, a shank passing through the discs and secured to the upper one, a coil spring engaging the shank and acting to press the lower disc into close frictional engagement with the under surface of the top, said spring having a short free end, and an abutment plate secured below the top having a recess in which the free end of the spring engages so that the spring acts to turn the shank and return the discs to closing position.

3. In a device of the character described, the combination of a container having a top provided with dispensing orifices, a disc having dispensing orifices arranged to register therewith, a handle connected with the disc for rotating it, a shank secured to the disc, a coil spring engaging the shank having a free end, and an abutment plate secured below the top having a plurality of recesses for holding the free end of the spring.

4. In a device of the character described, the combination of a container having a top provided with dispensing orifices and a central butterfly shaped slot, a pair of discs having dispensing orifices and straight central slots arranged above and below the top, a shank passing through the slots of the discs and the slot of the top and secured to one of the discs, a handle secured to one of the discs for rotating the discs, a coiled spring having a free end and engaging the shank, and an abutment member secured below the top with which the free end of the spring engages.

5. In a device of the character described, the combination of a container having a top provided with dispensing orifices, a disc having dispensing orifices arranged to register therewith, a handle connected with the disc for rotating it, a shank secured to the disc, a coil spring engaging the shank having a free end, and an abutment plate having a peripheral flange frictionally engaging with the container walls below the top and a central flange provided with a plurality of recesses for holding the free end of the spring.

In testimony whereof, I have hereunto set my hand.

PHILIP A. REUTTER.