No. 804,259. PATENTED NOV. 14, 1905.

F. W. NORRIS.

APPARATUS FOR HOLDING AND DELIVERING POWDERS.

APPLICATION FILED NOV. 12, 1904.

Fig. 1

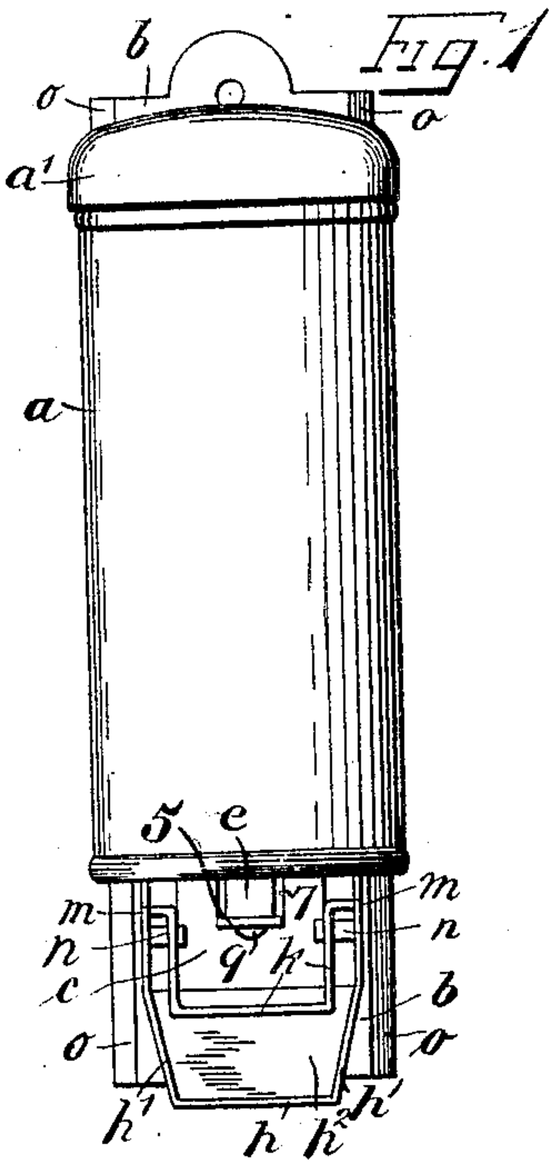


Fig. 2

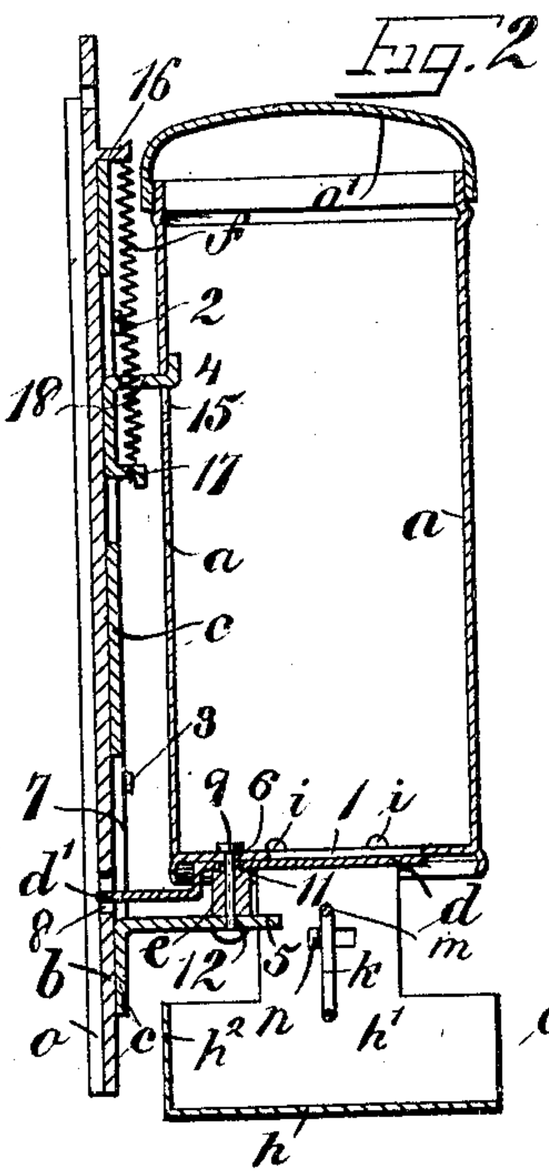


Fig. 4

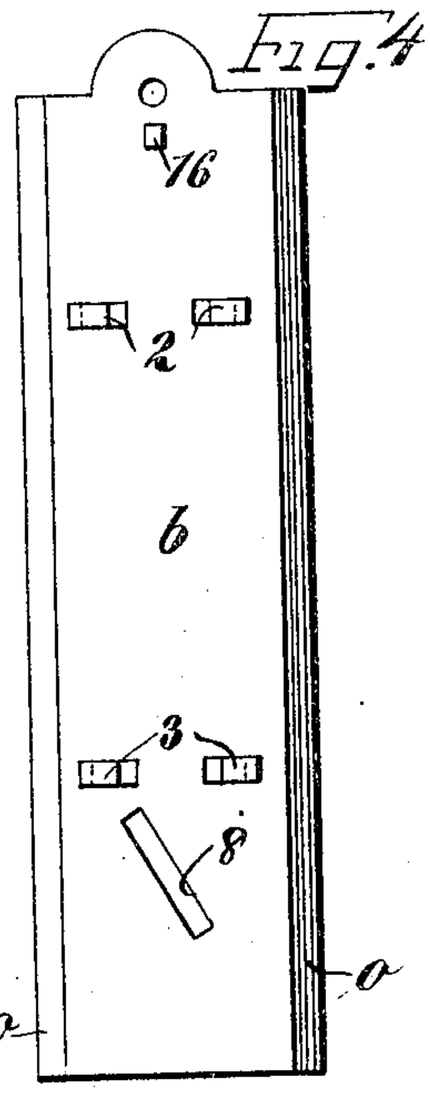


Fig. 6

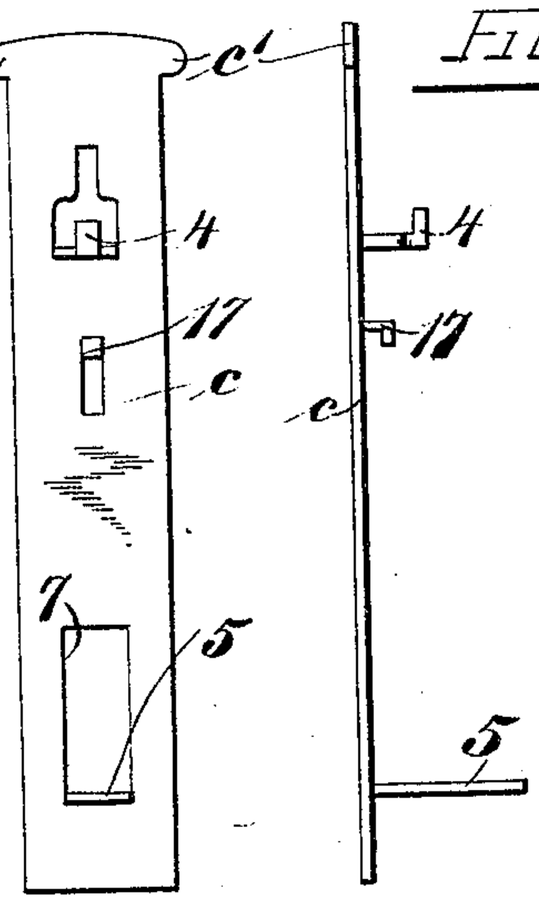


Fig. 7

Fig. 5

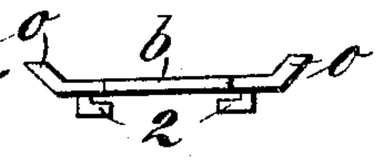
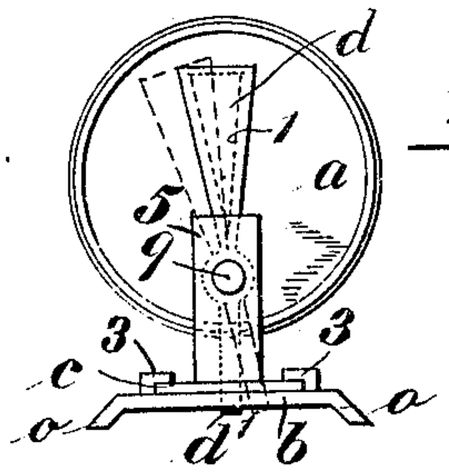


Fig. 3



WITNESSES

Leopold Leer.

Chas. A. Smith

INVENTOR

Frank W. Norris.

Harold Serrell

PER

ATTY

UNITED STATES PATENT OFFICE.

FRANK W. NORRIS, OF NEW YORK, N. Y.

APPARATUS FOR HOLDING AND DELIVERING POWDERS.

No. 804,259. Specification of Letters Patent. Patented Nov. 14, 1905.

Application filed November 12, 1904. Serial No. 232 403.

To all whom it may concern:

Be it known that I, FRANK W. NORRIS, a citizen of the United States, residing in the borough of Brooklyn, Kings county, city and State of New York, have invented an Improvement in Apparatus for Holding and Delivering Powders, of which the following is a specification.

The object of my invention is to provide an apparatus for holding and delivering powders of any kind; but it is particularly adapted for holding tooth-powders and delivering the same upon a brush in suitable quantities.

The invention consists, broadly, of a box or receptacle for holding powders provided with a removable cover of any desired character, a back plate adapted to hang upon a wall or any convenient place and having lugs upon its front side with their ends bent over toward each other, forming a slideway, a slide-plate movably held within the embrace of said lugs against the back plate, there being arms extending from said slide-plate and having their ends connected with the powder-receptacle to support the same.

It further consists in providing an opening in the bottom of the box for the discharge of the powder and a shutter to close such opening when the parts are in a normal position, but which is thrown aside to uncover said opening when the apparatus is operated.

It further consists in suspending a tray from the bottom of the powder-receptacle for catching and holding any overdischarge of the powder, and there is a wire support within such tray upon which the moistened brush may rest out of contact with the tray when the powder is being applied.

I also provide means for returning the parts to an initial position after each operation.

In the accompanying drawings, Figure 1 is a front elevation of my device. Fig. 2 is a side elevation of the same in section. Fig. 3 is an inverted plan view with the tray removed, the dotted lines showing the opening in the bottom of the receptacle and also the shutter as partly operated. Fig. 4 is a front view of the back plate detached. Fig. 5 is an end view of the same. Fig. 6 is a front view of the slide-plate detached, and Fig. 7 is a side view of the same.

The box or powder-receptacle *a* is preferably of sheet metal and is provided with a cover *a'* and an opening 1 in its bottom, which opening is preferably V-shaped, as shown, and smaller than the area of the bristles on a tooth-brush. The back plate *b*, of metal or suitable material, has upon its front side two pairs of oppositely-placed lugs 2 2 and 3 3, which are made integral with the back plate *b* or are rigidly secured thereto and have their ends bent over toward each other, as shown.

The slide-plate *c* is movably held against the front surface of the back plate *b* by the lugs 2 2 and 3 3. This slide-plate *c* has two arms 4 and 5 projecting from its front side, their ends being connected with the receptacle *a* to support the same. These arms 4 and 5 are preferably cut out of the material forming the slide-plate *c* and bent at right angles thereto, as shown; but they may be rigidly attached to the slide-plate in any desired manner.

A shutter *d* is pivoted at 6 to and beneath the bottom of the receptacle *a*, and its blade is preferably of a shape corresponding to the opening 1 in the bottom of the receptacle and slightly larger than said opening, so that when the parts are in a normal position the shutter entirely closes the opening 1 in the bottom of the receptacle. This shutter has a rearwardly-extending arm *d'*, the end of which passes through an elongated opening 7 in the slide-plate *c* and enters an inclined slot 8 in the back plate *b*, in which when the apparatus is operated it has an inclined downward and upward movement.

The side edges of the back plate *b* are preferably bent backward, as shown at *o*, so that when the back plate is hung against a wall there will be a space for the end of the shutter-arm working in the slot 8, so that it cannot come in contact with the wall.

I connect the receptacle *a* with the shutter *d* and with the arm 5, extending from the slide-plate *c*, by a pivot-pin 9. There is preferably a spacing-block *e* between the bottom of the receptacle *a* and the arm 5, having a reduced upper end which enters a hole 11 in the shutter *d*, so that the central part of the shutter *d* rests upon the shoulder formed on the block *e* by such reduced portion. The pivot-pin 9 is inserted from within the receptacle *a*, so that its head rests upon the upper side of the bottom of the receptacle *a*, while the pin passes through a hole 6 in the bottom of said receptacle, through the hole 11 in the shutter *d*, through a central hole in the spacing-block *e*, and through a hole 12 in the free end of the arm 5, after which the end of the pin is spread to prevent withdrawal.

It is obvious that the end of the arm 4 extending from the slide-plate *c* may be permanently attached to the receptacle *a* in any desired manner; but I prefer to bend up the end of the arm, as shown, and to provide a slot 15 in the receptacle for its reception, so that in assembling the parts the bent-over end of the arm 4 is first inserted in the slot 15 in the receptacle *a*, after which the receptacle is connected with the arm 5 and the shutter *d* in the manner before described.

When the arm 5 is not cut out of the material forming the slide-plate *c*, but is a separate piece and permanently fastened thereto, I cut out a portion of the slide-plate *c* to form the elongated opening 7, so that the shutter-arm *d'* may pass therethrough.

I provide a spring *f* for holding the parts in a normal position and for returning the parts thereto after each operation. One end of this spring *f* is secured to a lug 16 on the back plate *b* near its top, and the other end of the spring is secured to a catch 17 on the slide-plate *c*. There is a hole 18 in the arm 4, through which this spring *f* passes.

The slide-plate *c* is provided at its top with ears *c'*, which limit its downward movement by coming into contact with the lugs 2 2 on the back plate *b*, and its upward movement is limited by the lug 16 on said back plate.

Suspended beneath the receptacle *a* is a tray *h*, which may be of sheet metal or any suitable material. It is open at the top and front, with sides *h'* and back h^2. The sides are preferably reduced in width at the center a certain distance from the bottom and extended upwardly, with their ends attached to the bottom of the receptacle *a* by rivets *i*, as shown, or in any suitable manner. I prefer to make these side extensions integral with the tray; but it will be readily seen that they may be separate suspending-strips secured to the sides of the tray.

A brush-support *k*, formed of a single wire bent to conform generally to the interior shape of the tray, is suspended within the tray by its ends, which are bent outwardly and passed through holes *m* in the side extensions of the tray. This brush-support extends to within a suitable distance from the bottom of the tray, so that the back of the brush may be held upon it while the powder is being applied, and the moistened brush is thus kept from contact with either the sides or bottom of the tray, and the tray being closed except at the top and front any overdischarge of powder will be caught and held by it, thus preventing waste of powder. This brush-support can be swung forward, so that unobstructed access can be had to the tray for removing any surplus powder and for cleansing the tray and support.

In order to prevent a backward movement of the wire or brush-support *k* when the brush is laid upon it, I provide stops *n* on the inner side of each side extension of the tray. These stops *n* are preferably formed by cutting out a strip in each side extension of the tray and bending them inward, as shown.

The powder is put into the receptacle *a* at the top, the cover of course being removed while so doing.

When it is desired to use the apparatus, the back of the brush is laid upon the wire support *k* and the receptacle *a* is pushed down by hand. In so doing the shutter-arm *d'* working in the inclined slot 8 in the back plate *b* moves the shutter *d* to one side, thus uncovering the opening 1 in the bottom of the receptacle *a* and allowing the powder to fall upon the brush. The ears *c'* on the slide-plate *c* limit the downward movement by coming into contact with the lugs 2 2 on the back plate *b*, and the jar produced by this contact agitates the powder in the receptacle *a* and insures its discharge through the opening 1. When the receptacle *a* is released, the spring *f* draws up the slide-plate *c*, thus restoring the parts to their initial position.

I claim as my invention—

1. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a delivery-orifice in its bottom, of a shutter normally closing said orifice, means for moving said shutter to uncover said orifice when the receptacle is depressed, and means for returning the parts to a normal position.

2. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a delivery-orifice in its bottom, of a shutter normally closing said orifice, means for moving said shutter to uncover said orifice when the receptacle is depressed, means for preventing waste of powder, and means for returning the parts to a normal position when the pressure on the receptacle is released.

3. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a delivery-orifice in its bottom, of a shutter normally closing said orifice, means for moving said shutter to uncover said orifice when the receptacle is depressed, a tray suspended from the bottom of the receptacle for catching and holding any overdischarge of powder, and means for returning the parts to a normal position when the pressure on the receptacle is released.

4. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a delivery-orifice in its bottom, of a shutter normally closing said orifice, means for moving said shutter to uncover said orifice when the receptacle is depressed, a tray suspended from the bottom of the receptacle for catching and holding any overdischarge of powder, a brush-support within and across said tray, and means for returning the parts to a normal

position when the pressure on the receptacle is removed.

5. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a discharge-opening in its bottom, a shutter pivoted to the bottom of the receptacle and normally closing the said opening, means for moving the said shutter to one side to uncover said opening when the receptacle is depressed, and means for returning the parts to a normal position when the pressure upon the receptacle is removed.

6. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a discharge-opening in its bottom, a shutter pivoted to the bottom of the receptacle and normally covering said opening, means for moving said shutter to one side to uncover said opening when the receptacle is depressed, a tray suspended from the bottom of the receptacle for catching and holding any overdischarge of powder, a brush-support within and across said tray, and means for returning the parts to a normal position when the pressure on the receptacle is removed.

7. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a discharge-opening in its bottom, a back plate adapted to be hung upon a wall, pairs of surface lugs upon said back plate, there being an inclined slot in its lower part, a slide-plate held within the lugs upon the back plate, arms upon said slide-plate connected with the receptacle and supporting the same, a shutter pivoted to the bottom of the receptacle and normally covering the opening therein, and an arm extending through an elongated slot in the slide-plate and entering the inclined slot in the back plate whereby when the receptacle is depressed the shutter is moved to one side thus uncovering the opening in the bottom of the receptacle, and a spring for supporting and returning the parts to a normal position when the pressure upon the receptacle is released, substantially as described.

8. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a discharge-opening in its bottom, a back plate adapted to be hung upon a wall, pairs of surface lugs upon said back plate there being an inclined slot in its lower part, a slide-plate held within the lugs upon the back plate and having an elongated slot in its lower part, arms upon said slide-plate connected with the receptacle and supporting the same, a shutter pivoted to the bottom of the receptacle and normally covering the opening in the same and an arm extending through the elongated slot in the slide-plate and entering the inclined slot in the back plate whereby when the receptacle is depressed, the shutter is moved to one side thus uncovering the opening in the bottom of the receptacle, a tray suspended from the bottom of the receptacle for catching and holding any overdischarge of powder, and a spring for supporting and returning the parts to a normal position when the pressure on the receptacle is released, substantially as described.

9. In an apparatus for holding and delivering powder, the combination with a longitudinally-movable receptacle having a discharge-opening in its bottom, a back plate adapted to be hung upon a wall, pairs of surface lugs upon said back plate there being an inclined slot in its lower part, a slide-plate held within the lugs upon the back plate and having an elongated slot in its lower part, arms upon said slide-plate extending to and connected with the receptacle and supporting the same, a shutter pivoted to the bottom of the receptacle and normally covering the opening in the same and having an arm extending through the elongated slot in the slide-plate and entering the inclined slot in the back plate whereby when the receptacle is depressed the shutter is moved to one side thus uncovering the opening in the bottom of the receptacle, a tray suspended from the bottom of the receptacle for catching and holding any overdischarge of powder, a brush-support within and across said tray, and a spring for supporting and returning the parts to a normal position when the pressure upon the receptacle is removed, substantially as described.

Signed by me this 24th day of October, 1904.

F. W. NORRIS.

Witnesses:
GEO. T. PINCKNEY,
BERTHA M. ALLEN.