

(No Model.)

J. C. MICHAEL.
POWDER HOLDING AND DELIVERING DEVICE.

No. 519,387.

Patented May 8, 1894.

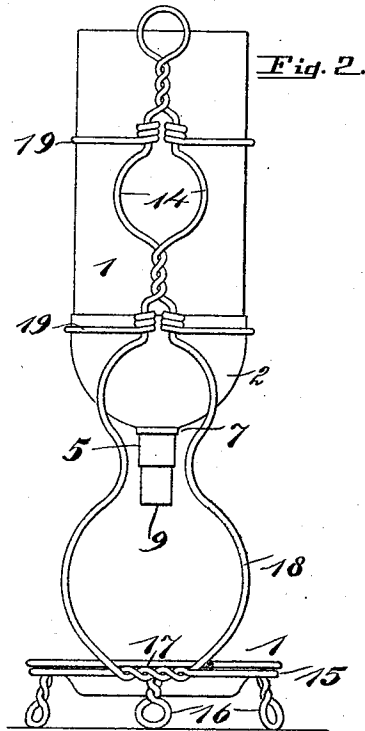
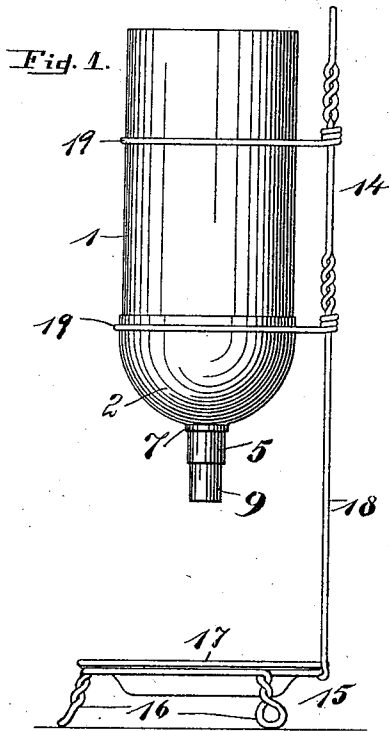


Fig. 3.

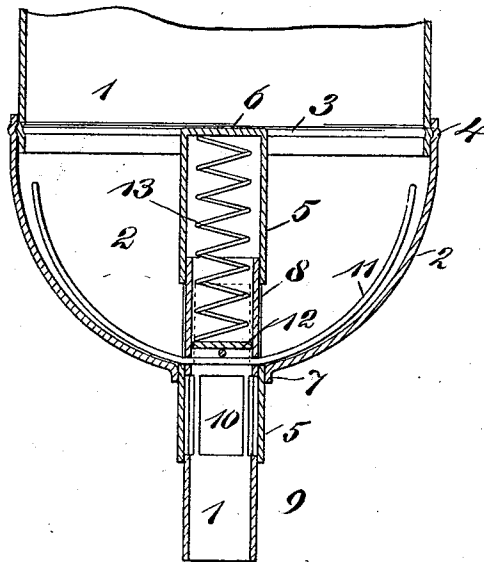


Fig. 4.

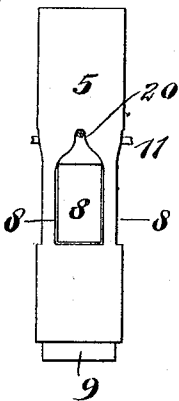
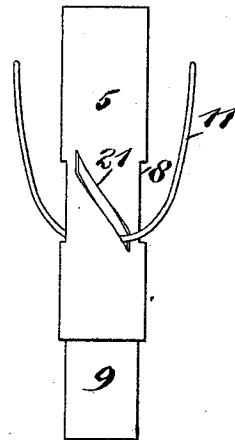


Fig. 5.



WITNESSES:
Clarence L. Davis
H. L. Marsh

INVENTOR
Jacob C. Michael
BY
E. M. Marble
ATTORNEY

UNITED STATES PATENT OFFICE.

JACOB C. MICHAEL, OF NEW YORK, N. Y.

POWDER HOLDING AND DELIVERING DEVICE.

SPECIFICATION forming part of Letters Patent No. 519,387, dated May 8, 1894.

Application filed July 14, 1892. Serial No. 439,987. (No model.)

To all whom it may concern:

Be it known that I, JACOB C. MICHAEL, a citizen of the United States, and a resident of the city and county of New York, in the State of New York, have invented certain new and useful Improvements in Powder Holding and Delivering Devices, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide a receptacle for holding all kinds of powders, of which small quantities are desired to be used from time to time, from which the same may be easily and without trouble delivered in such quantities as desired; and although useful for many other purposes, the same is designed and more particularly adapted for holding tooth powders, and delivering the same upon the brush in fit quantities for use.

This invention consists broadly, of a suitably supported box or receptacle, provided at its lower end with a tube, open at the bottom, which projects into the interior thereof, within which tube is a second tube of slightly smaller diameter adapted to move easily in the first tube, also open at the bottom, and provided with openings in its sides, adapted to register with similar openings in the sides of the first tube, in communication with the interior of the receptacle, when the inner tube is moved by pressure from beneath; and also further consists in providing a suitable stand of peculiar construction, to be used in supporting such powder receptacle, from which one receptacle when empty may be removed, and a full one substituted therefor.

Said invention is fully disclosed in the following specification, of which the accompanying drawings form a part, wherein similar numerals of reference designate like or equivalent parts wherever found throughout the several views, and in which—

Figure 1, designates a side view of my improved powder-holding and delivering receptacle in position in my improved support therefor; Fig. 2, a rear view of the same; Fig. 3, a view in central longitudinal section of the lower portion of such receptacle, showing the construction of the delivering mechanism; and Figs. 4 and 5, views in detail, of modi-

fied forms of certain portions of the delivering mechanism, shown in Fig. 3.

Referring to the drawings:—The numeral 1, designates a box or receptacle of any suitable material, preferably of thin sheet metal, and of any desired shape, but preferably substantially cylindrical, as shown. This box or receptacle 1, is closed at the upper end by a suitable top piece, preferably secured firmly thereto in any convenient manner, and at the other by a bottom 2, which is preferably of substantially the inverted shape shown. The box 1, and bottom 2, are each preferably provided with corresponding beads 3 and 4, which fit into one another when the bottom is forced upon the box, in such manner as to hold such box and bottom firmly together, and prevent the same from being taken apart, except by the use of great force or appropriate tools.

Firmly secured in a hole formed in the center of the dome shaped bottom 2, preferably by being made slightly larger than the hole, and sprung into place therein in the manner common in the manufacture of sheet metal goods, is a tube 5, preferably formed of the same thin sheet metal as the box 1 and bottom 2. This tube 5, projects into the interior of the box 1, for a short distance, preferably to about the depth of the dome shaped bottom, 2, as shown; and the same is open at the outer end, and preferably closed at its inner end by a cover 6, formed integral therewith, or secured firmly thereto in any desired manner. In order to hold the tube 5, firmly in place in the bottom 2, and prevent wobbling of the same, the central hole of such bottom 2, when first formed therein, is preferably made much smaller than the tube 5, and is then enlarged by forcing outward the surplus metal so as to form a flange 7, surrounding the hole, until the same is of sufficient size to allow the tube 5, to be forced into position therein.

Formed in the side walls of the tube 5, just within the dome of the bottom 2, and extending upward along the tube from the inner side of the bottom to about one third of the height of such tube, are one or more holes or openings 8, preferably of substantially rectangular shape, as shown; and sliding easily

up and down in said tube 5, is an inner tube 9, of such size as to fit snugly therein, and still be capable of movement. This tube 9, is open at the outer end, and also preferably at the inner end as well, and is provided with holes or openings 10, formed in the side walls thereof, of substantially the same shape, size and number, as the openings 8, in the tube 5, which openings 10, are adapted to register with the openings 8 only when the tube 9, is raised from its normal position by being pushed back into the tube 5, as far as it will go; the openings 8, being normally closed by the upper portion of the side walls of the tube 9, as shown in Fig. 3. The tube 9, is of substantially the same length as the tube 5, and is held in place therein, and prevented from falling completely out of such tube 5, when the device is in position with the bottom 2, downward, by any convenient means, preferably by wires 11, which pass through holes formed in such tube 9, just above the openings 10, and also through the openings 8, in the tube 5. These wires 11, are preferably curved upward, and extend nearly to the circumference of the bottom 2, with the interior of the dome of which they are nearly in contact throughout their entire length, as shown, and the same act as agitators to throw down the powder to the openings 8, when the device is operated, as will be more fully explained hereinafter.

Within the tube 9, and resting either on a metallic button 12, supported by the wires 11, or on such wires themselves, is preferably placed a spiral spring 13, the upper end of which bears against the end 6, of the tube 5, in such manner that the tube 9, is kept normally forced out of the tube 5, as far as the wires 11, will allow the same to go, whereby the openings 8, are normally kept closed by the upper portion of the walls of the tube 9, as hereinbefore stated.

The frame or support 14, in which the receptacle or box 1, is held in position to be operated, with the domed bottom 2, downward, as shown in Figs. 1 and 2, may be constructed of any desired material, and of any preferred form, but I prefer the one shown, wherein such frame or support is made of tinned wire twisted into the required shapes. In this form, such support consists of a bottom portion or base 15, provided preferably with short legs 16, on which the device rests, and supporting a shallow removable dish 17, adapted to receive any of the waste powder which may accidentally fall from the tube 9. Supported by this base 15, and extending upward from one side of the same, is a standard 18, of any desired form of construction, preferably of that shown, to which are secured at appropriate points, rings or clasps 19, adapted to encircle the box or receptacle 1, and hold the same firmly in position when the same has been once placed therein. These rings or clasps 19, are preferably of the form shown, the two ends thereof being attached

to different wires of the standard 17, so as to spring slightly apart to allow the box to be forced into the rings and then close together again so as to grip the same tightly.

The operation of the device is as follows:—The box or receptacle 1, having been filled with the required kind of powder, and the bottom 2, having been forced upon the same, until the beads 3 and 4, slip into one another, the same is next forced down into the rings or clasps 19, of the support 14, the dome shaped bottom 2, being downward, until such box 1, is in the position shown in Figs. 1 and 2, when the device will be ready for use. When it is desired to obtain powder from the receptacle it is only necessary to lift up the sliding tube 9, by pressing upward against the lower end of the same with the tooth brush, cloth, or whatever other article is used for applying the powder, and as soon as such tube 9, is lifted up sufficiently far for the openings 10 to register with the openings 8, powder will fall through both of such openings 8 and 10 into the tube 9, and out of the end thereof, upon the brush, rag or other implement used. If sufficient powder is not obtained at one movement, it may be lifted again and again, until the desired quantity is obtained. Ordinarily but one movement of the tube 9, is necessary, as the wires 11, rising through the powder serve to shake the same down toward the openings in the tube 5, but should the powder become caked high up the box out of reach of the wires 11, it can easily be shaken down by tapping lightly two or three times upon the upper end of the sides of the box or receptacle 1.

In order to compel the openings 8 and 10, to register accurately with one another when the tube 9, is raised, if desired, one or more of the openings 8, may be provided, as shown in Fig. 4, with a central slot 20, at the top thereof, the side lines of which merge by a gentle curve into the side lines of the opening 8, so that on the tube 9, being raised the wires 11, will be directed into such slot 20, and the openings 8, and 10, thus unerringly and accurately registered.

If desired, in order to give greater range of movement to the shaking wires or agitators 11, one of the openings 8, in the tube 5, may be omitted, and a spiral slot 21, formed in place thereof, as shown in Fig. 5. Through such slot 21, passes one of the wires 11, which is of such size as to slide easily along such slot, consequently when the tube 9, is raised or lowered a rotary movement is given to the tube 9, and to the wires 11, whereby such wires are brought into contact with the powder throughout the entire circumference of the box, and shake the same down to the point of the dome shaped cover next to the openings 8.

When all the powder in the box or receptacle 1, has been taken therefrom in the manner described, the same may be removed from the support 14, by slipping the same out of

the rings or clasps 19, and another full receptacle be substituted therefor; or if desired, the bottom 2, may be taken off, the box filled, the bottom replaced, and the same receptacle, be replaced in the rings or clasps 19; and this operation, may be repeated indefinitely.

Although I prefer to use a spring, as 13, for keeping the sliding inner tube 9, normally forced out of the tube 5, for the reason that the openings 8, are thus kept closed even when the box 1, is placed with the dome shaped bottom upright, as is frequently the case in shipping such boxes, it is evident that a weight may be substituted for such spring 13, or that in some cases both spring and weight may be omitted, and the tube 9, and wires 11, be made of sufficient weight to fall by gravity into the position shown in Fig. 3, whenever the receptacle or box 1, is placed with the bottom 2, downward.

It is evident that this improved powder receptacle may be used without the support 14, by being held in one hand during the operation of delivering powder therefrom, and that the same may be used for holding and delivering powders of all kinds; and I do not limit myself to the use of the same with the support, or for holding and delivering any particular kind of powder; neither do I limit myself to any particular form of construction, combination or arrangement of the various parts of my improved powder holding and delivering device, as it is evident that many changes and modifications, in the construction thereof, other than those named herein, may be made without departing from the scope of my invention.

Having now particularly described my said invention, its construction and operation, what I claim, and desire to secure by Letters Patent, is—

1. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube projecting upward through the bottom thereof into the same, a movable tube located within the stationary tube, and means connected with the inner tube and projecting below the bottom of the outer tube by which the inner tube may be actuated; said tubes being open at the bottom, and provided with openings which register with one another and form a communication between the interior of the receptacle and the inner tube only when the inner tube is moved from its normal position, substantially as shown and described.

2. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube projecting upward through the bottom thereof into the same, a movable tube adapted to slide up and down therein located within the stationary tube, means by which the inner tube is kept normally depressed in the outer tube, and means connected with the inner tube and projecting below the bottom of the outer tube by which the inner tube may be pushed up

into the outer tube; said tubes being open at the bottom and provided with openings which register with one another and form a communication between the interior of the receptacle and the inner tube, only when the inner tube is moved from its normal position up into the outer tube, substantially as shown and described.

3. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube closed at the top and open at the bottom projecting upward through the bottom of the receptacle into the same, a movable tube open at the bottom located within the stationary tube, and means connected with the inner tube and projecting below the bottom of the outer tube by which the inner tube may be moved from its normal position, said tubes being provided with openings which register with one another and form a communication between the interiors of the inner tube and of the receptacle only when the inner tube is moved from its normal position, substantially as shown and described.

4. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube open at the bottom and closed at the top, projecting upward through the bottom of the receptacle into the same, a movable tube open at the bottom located within the stationary tube, means by which such inner tube is kept normally depressed in the outer tube and means connected with the inner tube and projecting below the bottom of the outer tube by which the inner tube may be moved from its normal position; said tubes being provided with openings which register with one another and form a communication between the interiors of the inner tube and the receptacle only when the inner tube is moved from its normal position, substantially as shown and described.

5. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube projecting upward through the bottom thereof into the same, a movable tube located within the stationary tube, agitating wires attached to the movable tube and projecting into the receptacle, and means for actuating the movable tube; said tubes being open at the outer end, and provided with openings which register with one another and form a communication between the interior of the receptacle and the inner tube only when the inner tube is moved from its normal position, substantially as shown and described.

6. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube projecting upward through the bottom thereof into the same, a movable tube located within the stationary tube, means for agitating the powder in the receptacle operated by the movement of the inner tube, and means for

actuating the inner or movable tube; said tubes being open at the outer end, and provided with openings which register with one another and form a communication between the interior of the receptacle and the inner tube only when the inner tube is moved from its normal position, substantially as shown and described.

7. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a sliding tube provided with openings in the sides thereof extending upward through the bottom of the receptacle into the same, such openings being normally out of communication with the interior of the receptacle, but adapted to be brought into communication therewith when the tube is forced into the receptacle, and means connected with such movable tube, and projecting below the bottom of the receptacle by which the same may be moved from its normal position, substantially as shown and described.

8. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube projecting into the same, a movable tube adapted to slide up and down therein located within the stationary tube, agitating wires attached to the movable tube and projecting into the receptacle, means for imparting a rotary motion to the inner tube and the agitating wires as such tube is moved in and out of the stationary tube, and means for moving the inner tube up and down in the stationary tube, substantially as shown and described.

9. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube projecting upward through the bottom thereof into the same, open at the bottom and provided with an opening or openings in the side walls thereof, a movable tube adapted to slide up and down therein located within the stationary tube likewise open at the bottom and provided with like openings in the side walls thereof, agitating wires attached to the movable tube and projecting into the receptacle, means for imparting a rotary motion to the inner tube and the agitating wires as such inner tube is moved in and out of the stationary tube, and means operated from beneath

the receptacle for moving the inner tube up and down in the outer tube, the construction being such that the openings in the side walls of the stationary and movable tubes register with one another only when the inner tube is moved from its normal position, substantially as shown and described.

10. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube projecting upward through the bottom thereof into the same, and a normally depressed movable tube adapted to slide easily up and down therein located within the stationary tube, and having a portion of the lower end thereof projecting below the lower end of the stationary tube in such manner that upward pressure exerted thereon will force the movable tube up into the outer tube; said outer tube being closed at the top and both being open at the bottom, and provided with openings which register with one another and form a communication between the interiors of the inner tube and the receptacle only when the inner tube is pushed back into the outer tube, substantially as shown and described.

11. In a powder holding and delivering device, the combination with a receptacle for holding the powder, of a stationary tube closed at the top and open at the bottom projecting upward through the bottom of the receptacle into the same, a movable tube open at the bottom, adapted to slide up and down therein located within the stationary tube, a spring by which the inner tube is normally forced toward the outer end of the stationary tube, and a projection of the inner tube extending below the outer tube by which the inner tube may be forced back into the outer; said tubes being provided with openings which register with one another and form a communication between the interior of the receptacle and the inner tube, only when the inner tube is moved from its normal position, substantially as shown and described.

Signed at the city and county of New York, in the State of New York, this 8th day of June, A. D. 1892.

JACOB C. MICHAEL.

Witnesses:

E. O. EWING,

C. L. DAVIS.