

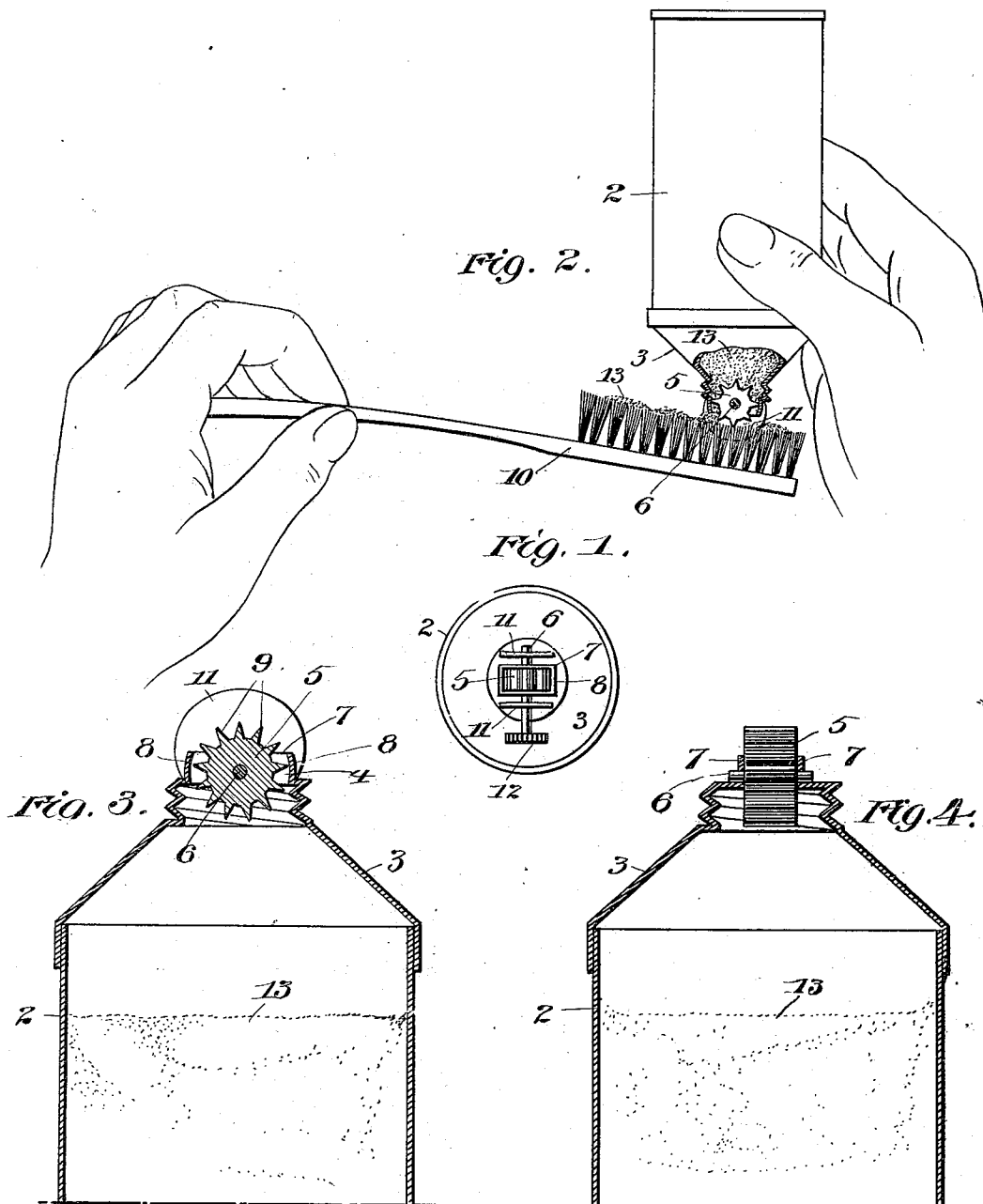
No. 622,285.

Patented Apr. 4, 1899.

J. F. SPRAIN.
POWDER DISTRIBUTING CAN.

(Application filed May 9, 1898.)

(No Model.)



WITNESSES:

Frank S. Owen
Samuel M. Chesnut

INVENTOR

John F. Sprain
BY
Forbes & Forbes
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN FREDERICK SPRAIN, OF NEW YORK, N. Y.

POWDER-DISTRIBUTING CAN.

SPECIFICATION forming part of Letters Patent No. 622,285, dated April 4, 1899.

Application filed May 9, 1898. Serial No. 680,103. (No model.)

To all whom it may concern:

Be it known that I, JOHN FREDERICK SPRAIN, a citizen of the United States, residing in the borough of Brooklyn, New York city, county of Kings, and State of New York, have invented certain new and useful Improvements in Powder-Distributing Cans, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to boxes or cans for distributing powdered material so that the same may be placed or distributed in suitably small quantities at a particular point, and is especially applicable to tooth-powder cans.

The principal object of the invention is to provide a simple and efficient form of the device; and to this end the invention consists in the various novel and peculiar arrangements and combinations of the several parts of my device, all as hereinafter fully described and then pointed out in the claims.

I have illustrated types of my invention in the accompanying drawings, wherein—

Figure 1 is a plan view of my improved device shown with the protecting-cap omitted, as is the case in all the figures. Fig. 2 shows the application of the device when used for tooth-powder, the view showing an ordinary tooth-brush held in one hand, while the receptacle containing the powder is held in the other with the bottom up and the ejector-wheel in contact with the brush. In this view the cover of the receptacle, in which is mounted the toothed ejector-wheel, is partly broken away in order to show the interior thereof. Fig. 3 is an enlarged view in section on a vertical plane extending centrally through the can and at right angles to the axis of the ejector-wheel. Fig. 4 is a sectional view taken on a plane extending vertically and centrally through the can parallel with the axis of the ejector-wheel. In this form the guide projections and the hand-operated device for the shaft of the ejector-wheel are dispensed with.

Referring to the drawings, in which like numbers of reference indicate like parts throughout, 2 is a cylindrically-shaped box or

can having a detachable top 3, which is removably secured to the box for the purpose of filling the same. The top 3 is shaped like a truncated cone, with the convex surface lying to the outside, and it is provided with a central opening 4 of sufficient size to receive a toothed wheel 5, which is provided with a shaft 6, mounted across the opening 4, so that the periphery of the wheel projects within the can or box to engage the contents thereof. The shaft 6 is mounted in suitable projections 7, which may be formed from the body of the cover 3 as the same is struck up into shape. Toward each end of the opening or slot 4 in the cover is arranged a guard 8, which extends a sufficient distance around the wheel to a little more than span the distance between the points of adjacent teeth 9 of the wheel, so as to provide an effective seal to prevent the powder from accidentally leaking out around a tooth. These guards are preferably curved on an arc which is struck from the center of the wheel. In the construction shown the curved guards 8 and the projections 7 are together made in the form of a continuous flange that extends around the opening 4, through which the wheel projects, so that this part is virtually a spout out of which about one-quarter of the toothed wheel projects.

The spaces between the teeth 9 of the wheel 5 constitute recesses or pockets, which when the wheel is turned serve to convey the powdered contents of the box from the interior thereof to the exterior, from where it is ejected. When the box or can is turned bottom up, the powdered material fills all of the cavities or pockets of the wheel lying within the receptacle, and as the wheel is turned the filled pockets move out and discharge their contents toward one side of the wheel, while the empty pockets move in at the other side and become filled, and in this way a constant supply is maintained for the ejector-wheel.

My improved device is particularly applicable to tooth-powder boxes or bottles for emptying a desired quantity of tooth-powder on a tooth-brush, and in order to center the ejector-wheel over the brush, which is shown at 10 in the drawings, I provide suitable guide projections 11 11 at opposite sides of the wheel. These guide projections, moreover,

serve to prevent the brush from slipping laterally away from the ejector, or vice versa, and thus prevent the powder being wasted and at the same time keep it from falling upon the clothes of the user or soiling the surroundings.

In the form shown in Figs. 1, 2, and 3 one end of the shaft 6 of the ejector-wheel is provided with a milled head 12, which may be turned with the fingers in order to eject the powder 13 from the receptacle. I prefer, however, to use the ejector-wheel without a hand device for turning it, and this form I show in Fig. 4. In either of the forms when it is desired to spread the powder on a brush or the like the receptacle is turned bottom up and the wheel placed upon the brush, and either the brush is pulled across the wheel back and forth or the receptacle is moved so as to roll the wheel to and fro over the brush and in this way to distribute the powder. In making contact with the bristles of the brush the teeth of the wheel depress them slightly and spring them apart, so that the powder is pressed down in the bristles instead of being laid in heaps loosely upon the ends thereof, and the powder is therefore not so liable to fall off the brush.

To protect the ejector-wheel and keep it clean, an ordinary removable cap may be placed over it, though for the sake of clearness in the drawings I have omitted showing the cap. While I have shown but one form of toothed wheel—namely, that of a star-shaped wheel having pointed teeth—it is obvious, of course, that any well-known form of wheel may be used which will provide pockets or recesses for conveying the powder out of the receptacle; but I find that the ejector-wheel having peripheral pockets provides a very efficient form of the device and one that is simple and cheap. With the toothed wheel the teeth in passing over the object to be powdered causes the wheel to be rotated without the use of a particular device for that purpose.

In Fig. 2 I show how the device is used for placing tooth-powder on an ordinary tooth-brush 10. From this it will be seen that the brush being entered between the guide projections 11, the brush is either moved on its length in contact with the wheel or the brush is held at rest while the receptacle is moved so as to roll the wheel across the brush, and in either case the peripheral pockets of the wheel as they move out of the opening of the receptacle will deposit their contents on the brush. In this figure a quantity of powder 13 is shown as placed upon the brush, and it may be supposed that the brush is now again applied to the wheel for receiving a further quantity of the powder and that the brush is about to be moved inwardly toward the right hand.

The ejector may be used with receptacles for distributing any crushed materials—such as tooth-powder, sugar, salt, and the like.

Any suitable materials may be used for the wheel—such, for instance, as metal, wood, celluloid, or composition. The top 3, in which the ejector-wheel is mounted, may likewise be made of these materials, though it can be manufactured at very low cost from sheet metal by stamping or pressing the same into shape with the bearings for the shaft of the wheel and with the guards. The box or receptacle may likewise be made of suitable material, and in some instances I have made them out of glass or earthenware, with a metal cover carrying the ejector-wheel.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a powder-distributing can provided with a rectangular-shaped discharge-opening, a rotary toothed wheel mounted in said discharge-opening with its axis extending transversely across the same, said toothed wheel having its sides and periphery just clearing the sides of said discharge-opening and having a considerable portion of its periphery and sides projecting outwardly from said opening for readily engaging the teeth of said wheel with the surface to be powdered, substantially as and for the purpose set forth.

2. The combination of a powder-distributing can provided with a rectangular-shaped discharge-opening 4, having the flanges 7 and 8 projecting outwardly from the edges thereof, a rotary toothed wheel 5 mounted in said discharge-opening with its axis extending transversely across the same, the said flanges 8, 8, being curved to conform to the curvature of the periphery of the wheel and extending around the same for a distance greater than the distance between the points of two adjacent teeth, the sides and periphery of said wheel just clearing the flanges and projecting outwardly beyond the same a considerable distance for readily engaging the teeth of said wheel with the surface to be powdered, substantially as and for the purpose set forth.

3. The combination of a powder-distributing can provided with a rectangular-shaped discharge-opening 4, having the flanges 7 and 8 projecting outwardly from the edges thereof, a rotary toothed wheel 5 mounted in said discharge-opening with its axis extending transversely across the same, the said flanges 8, 8, being curved to conform to the curvature of the periphery of the wheel and extending around the same for a distance greater than the distance between the points of two adjacent teeth, and laterally-projecting guides 11 located upon opposite sides of said wheel, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand, this 7th day of May, 1898, in presence of the two subscribing witnesses.

JOHN FREDERICK SPRAIN.

Witnesses:

WILLIS FOWLER,
SAMUEL M. CHESNUT.