Oct. 19, 1937. J. A. ORIHEL 2,096,259

TOOTH POWDER DISPENSER

Filed Jan. 13, 1937

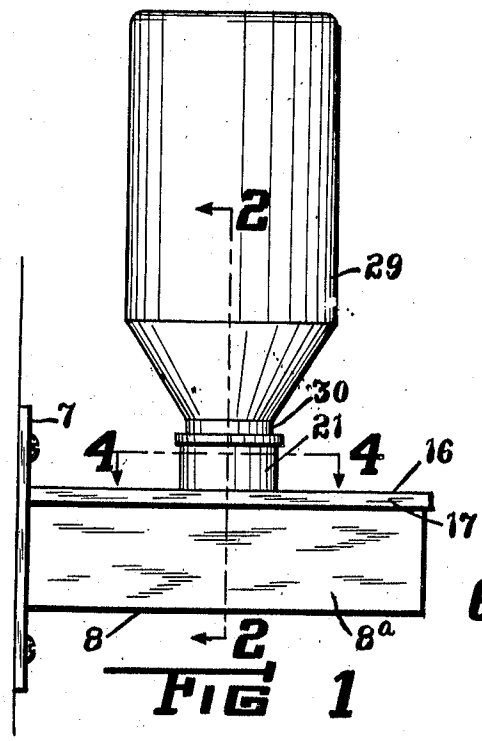

FIG 1

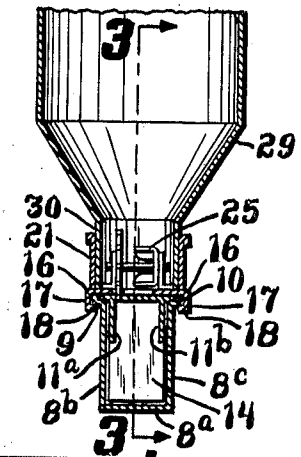

FIG 2

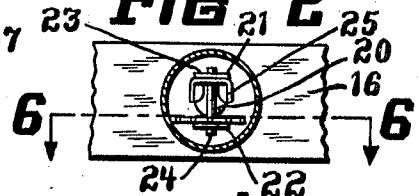

FIG 4

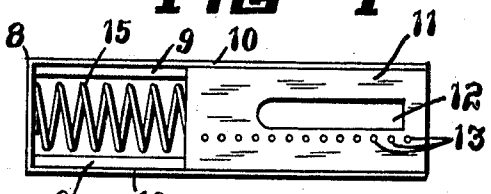

FIG 5

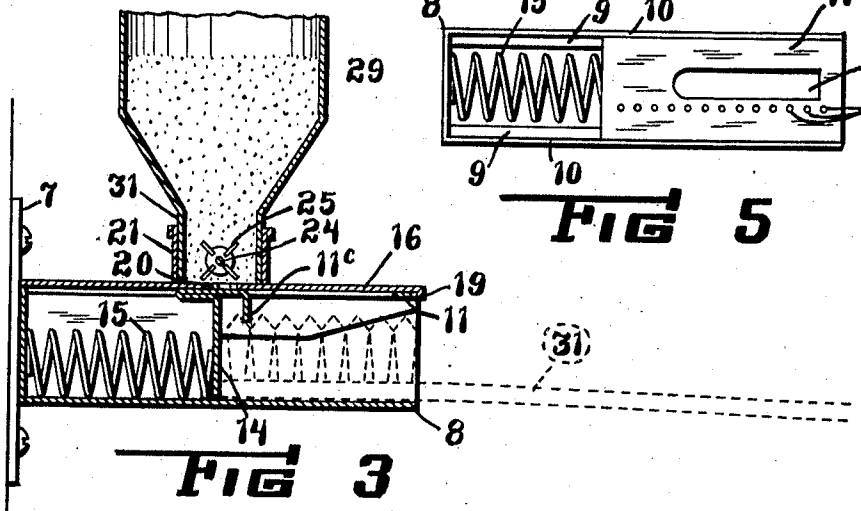

FIG 3

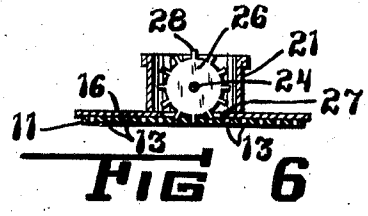

FIG 6

JOSEPH A ORIHEL

INVENTOR

BY F.E. Thomas

ATTORNEY

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TOOTH POWDER DISPENSER

Joseph A. Orihel, Akron, Ohio

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5 Claims. (Cl. 221—62)

This invention relates to improvements in tooth powder dispensers.

Objects of the invention are to provide a dispenser of simple, durable construction, which can be manufactured at a low cost, which may be fixed to a wall or other structure and which may be quickly and conveniently operated to deposit the proper amount of powder on a tooth brush.

Further objects are to provide a powder dispenser which will include means for detachably securing a powder receptacle in an inverted position thereon, to provide a chamber in which a brush may be inserted; to provide an opening through which the contents of said container will flow by gravity to said chamber; to provide a yieldable slide valve for normally closing said opening whereby the valve may be operated by inserting a tooth brush in said chamber and pressing the same against said valve to deposit powder from said container on said brush; to provide an agitating wheel which projects into said container with rack and gear mechanism operable by a movement of said valve to rotate said wheel.

The above objects are accomplished and additional ends are attained by the novel construction, hereinafter described and illustrated in the accompanying drawing in which there is shown an illustrative embodiment of the invention, it being understood that the invention is not confined to the exact structure illustrated and that changes and modifications may be made which come within the scope of the claims hereunto appended.

In the drawing:—

Figure 1 is a side elevational view of a powder dispenser constructed in accordance with this invention,

Figure 2 is a vertical, sectional view taken as indicated by the lines 2—2 of Figure 1,

Figure 3 is a vertical, sectional view taken as indicated by the lines 3—3 of Figure 2,

Figure 4 is a horizontal, sectional view taken as indicated by the lines 4—4 of Figure 1,

Figure 5 is a plan view of the dispenser taken with the lid removed,

Figure 6 is a fragmentary view taken in vertical section as indicated by the lines 6—6 of Figure 2.

Proceeding now to a detailed description of the invention with reference to the particular adaptation thereof disclosed in the drawing, the numeral 7 denotes a support which as shown in the drawing is in the form of a plate adapted to be attached to a wall or other structure.

The numeral 8 denotes an elongated, rectangular, box-like structure, secured to the plate 7 and projecting horizontally therefrom. The side and bottom walls of the structure 8 are preferably formed of one piece of sheet metal stamped or otherwise formed to provide a flat, bottom wall 8*a* and parallel side walls 8*b* and 8*c*. Each of said walls 8*b* and 8*c* is stamped outwardly adjacent the upper edge thereof to provide a horizontal portion 9, then upwardly in the form of a narrow flange 10. The portions 9 and the flanges 10 form a slide for the valve member 11 which is formed of a flat strip positioned with its lateral edge portions supported on the horizontal portions 9.

The strip 11 is provided with a longitudinally disposed, elongated opening 12. The strip 11 is also provided adjacent the opening 12 with a longitudinally disposed row of equally spaced openings 13. At the rear end portion of the valve, the strip 11 is reduced in width and is bent back underneath itself, then downwardly to provide a vertical wall 14, which conforms in shape to the cross sectional shape of the cavity of the structure 8 and which is loosely received therein.

The characters 11*a* and 11*b* denote side walls which project downwardly from the strip 11 and extend forwardly from the wall 14. The side walls 11*a* and 11*b* are positioned within the cavity of the structure 8 and taper from the wall 14 to the forward end of the strip 11. The numeral 11*c* denotes a tongue which projects downwardly from the strip 11 at the rearwardly presented end of the opening 12.

The numeral 15 denotes a coil spring which is positioned in the cavity of the structure 8 so as to be compressed between the rear wall thereof and the wall 14. The numeral 16 denotes an elongated lid which is positioned on the structure 8 so as to entirely close the upper side thereof.

The lid 16 is provided on each lateral side thereof with a downwardly turned portion 17 which terminates in an inwardly turned flange 18. The lid 16 is adapted to be positioned on the structure 8 with the portions 17 extending in close, spaced relation to the flanges 10 and with the flanges 18 extending under the horizontal portions 9. The lid 16 is provided at the forward end thereof with a downwardly turned lip 19 which engages the forwardly presented edge of the valve 11 to limit the forward movement thereof. The lid 16 is provided with an opening 20 which is formed therein at a point intermediate the length thereof.

The numeral 21 denotes a cylindrical socket member which is soldered or otherwise suitably

secured to the lid 16 and which is positioned around the opening 20. The numerals 22 and 23 denote brackets which project upwardly from the lid 16 and which are positioned within the socket member 21 with the brackets 22 and 23 positioned on opposite sides of the opening 20.

The numeral 24 denotes a shaft which is rotatably mounted in suitable openings in the brackets 22 and 23 so as to extend over the opening 20.

The shaft 24 is provided at a point directly above the opening 20 with a paddle wheel 25 and is provided adjacent one end thereof with a gear wheel 26, both of which are fixed thereto. The gear wheel 25 is of larger diameter than the paddle 25 and extends downwardly through a slot 27 in the lid 16 with the teeth 28 of the gear wheel 26 engaging the openings 13 in the strip 11.

The numeral 29 denotes a powder container which is provided with a neck 30 adapted to be snugly received in the socket member 21. The powder container 29 is inverted and the neck 30 positioned in the socket member 21 as shown in Figures 1, 2 and 3. It will be noted that the elongated opening 12 terminates a sufficient distance from the rear end of the strip 11 to be normally positioned forwardly of the opening 20 and that the opening 20 is normally closed by the valve 11 which is yieldably held in a forward position by the spring 15.

In use, a tooth brush 31 is inserted in the forward end of the structure 8 and is moved rearwardly against the wall 14 which, as pressure is applied, moves the member 11 rearwardly, causing the slot 12 to coincide with the opening 20 and permitting powder in the container 29 to flow downwardly through the opening 20 onto the brush 31.

As the member 11 is thus moved rearwardly, the rack formed by the openings 13 rotates the gear wheel 26 thus causing a rotary movement of the paddle wheel 25. The structure 8 is preferably formed of sufficient depth to permit the bristle portion of the conventional form of brush to be moved longitudinally beneath the opening 20 whereby powder from the container 29 is evenly distributed over the full length thereof. As the gear wheel 26 is in positive engagement with the rack 13, the paddle wheel 25 will rotate in one direction on the rearward movement of the strip 11 and will rotate in the opposite direction when the brush is removed therefrom, thus depositing a proper amount of powder on the brush.

The side walls 11*a* and 11*b* confine the powder to the upturned face of the bristle portion of the brush and the tongue 11*c* prevents the deposit of powder on the extreme end of the brush whereby the brush may be removed and used without wasting the powder thus deposited thereon.

While the invention has been illustrated and described as applied to a dispenser adapted to be attached to a wall, it will be understood that the bracket 7 may be omitted and the dispenser applied to a container 29 with the socket member 21 serving as a lid for said container.

Having thus described my invention and described a preferred form thereof what I claim as new and desire to secure by Letters Patent is:—

1. In a device of the character described, an elongated casing, means to support said casing in a horizontal position, one end of said casing being open; means to detachably secure a powder container to the upper side of said casing, the upper wall of said casing provided with an opening for discharging powder from said container to said casing; a valve for controlling said opening, said valve including a slide, means to yieldably hold said valve in a closed position, said valve adapted to be opened by inserting a tooth brush in the open end of said casing and exerting a pressure on said slide; a rotatable agitator positioned on said casing and projecting into said container and means operable by a movement of said slide for rotating said agitator.

2. In a device of the character described, an elongated casing having an open end, means associated with the upper wall of said casing for detachably securing a powder container thereon; the upper wall of said casing provided with an opening leading from said container to said casing; a slide valve controlling said opening, means yieldably holding said valve in a closed position, said valve including a slide provided with a row of openings forming a rack; a rotatable agitator mounted on said lid and projecting into said container, a gear in mesh with said rack and a driving connection between the gear and agitator.

3. In a device of the character described, an elongated casing, means to support said casing in a horizontal position, a lid for said casing, said lid provided with a socket for receiving the neck of a powder container; an opening leading from said socket to said casing, a slide forming a valve controlling said opening, yieldable means for holding said valve in a closed position, a member projecting downwardly from said slide into the cavity of said casing, said valve adapted to be opened by inserting a brush in said casing and applying sufficient pressure to said member to move the slide rearwardly, said slide having a longitudinally directed row of openings forming a rack, an agitator wheel in said socket, a gear for driving said agitator wheel, said gear operatively connected to said rack.

4. In a tooth powder dispenser, an elongated casing having an open end, a socket member on the upper side of said casing, said socket member adapted to receive the neck of a powder container to detachably hold the same in an inverted position thereon; the upper wall of said casing provided with an opening forming an outlet passage from said socket member, a rotatable agitating wheel in said socket member, a gear for driving said wheel, a rack for rotating said gear and a member projecting downwardly from said rack into said casing, said rack adapted to be moved by inserting a tooth brush in the open end of said casing and exerting a pressure on said member.

5. In a tooth powder dispenser, an open ended casing, means to support the same in a horizontal position, a socket member on the upper wall of said casing, said socket member adapted to receive the neck of a powder container to detachably hold the same in an inverted position thereon, a rotatably mounted agitating wheel in said socket member, a gear co-axially fixed to said wheel, a slide having a longitudinally disposed row of openings forming a rack, the teeth of said gear being in mesh with the openings in said rack, a member projecting downwardly from said slide into said casing and yieldable means for holding the slide in a forward position whereby a tooth brush may be inserted through the open end of said casing to move said slide and deposit powder from said container thereon.

JOSEPH A. ORIHEL.