No. 621,780. Patented Mar. 28, 1899.

W. H. ATKINSON.

POWDER BOX.

(Application filed Sept. 22, 1897.)

(No Model.)

Fig. 1.

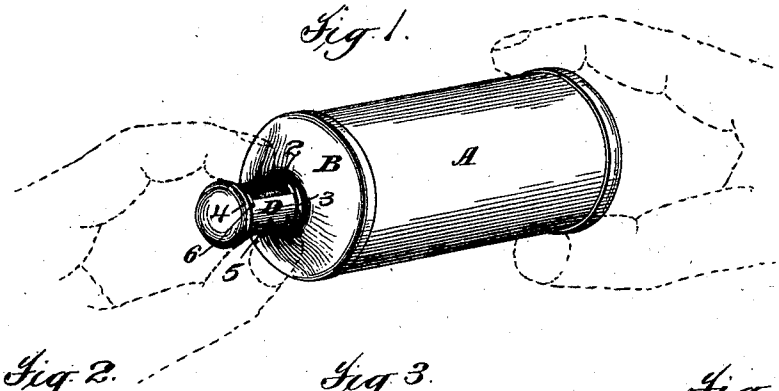


Fig. 2.

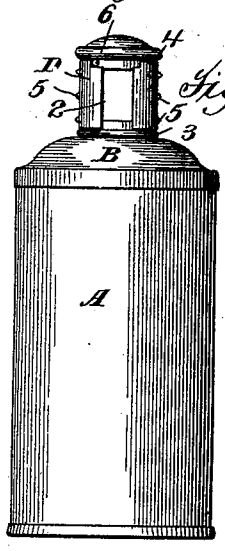


Fig. 2.

Fig. 3.

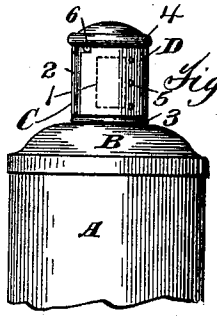


Fig. 3.

Fig. 4.

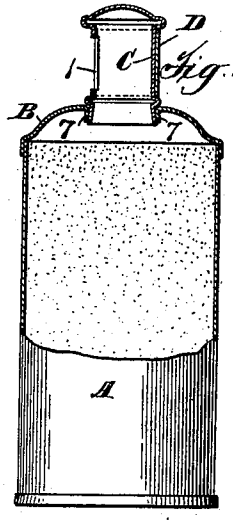


Fig. 4.

Fig. 5.

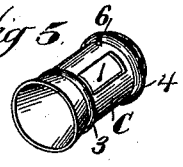
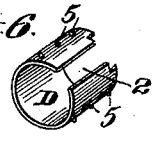


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM H. ATKINSON, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, DANIEL M. SOMERS, JOSEPH L. SOMERS, GUY A. SOMERS, AND ELMER E. SOMERS, OF SAME PLACE.

POWDER-BOX.

SPECIFICATION forming part of Letters Patent No. 621,780, dated March 28, 1899.

Application filed September 22, 1897. Serial No. 652,531. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. ATKINSON, a citizen of the United States, residing at New York, (Brooklyn,) county of Kings, and State of New York, have invented certain new and useful Improvements in Powder-Boxes, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to provide an improved powder-box of that class in which the powder is discharged from the box as desired through one or more openings in a discharge-tube, the especial object of the invention being to provide a simple, cheap, and durable construction for this purpose in which the box shall be convenient of use and the escape of powder prevented, except as desired, through the opening in the discharge-tube.

For a full understanding of the invention a detailed description of a construction embodying all the features of the invention in their preferred form will now be given in connection with the accompanying drawings, forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is a perspective view showing the position of the box in opening the same. Fig. 2 is a side view of the box open. Fig. 3 is a similar view of the box closed. Fig. 4 is a central vertical section of the box, taken through the discharge-opening and showing the box open, as in Fig. 2. Fig. 5 is a perspective view of the discharge-tube as it appears after expansion of the lower end. Fig. 6 is a perspective view of the spring-sleeve.

Referring to said drawings, A is the box, which is shown as of a construction suitable for tooth-powder and is preferably cylindrical, as shown, but which may be of any other suitable form, and B is the cover closing the top of the box and secured thereto in any suitable manner. In the top of the cover B is inserted the cylindrical discharge-tube C, which is open to the box at its inner end and closed at its outer end and which is provided with one or more discharge-openings 1 on the side, thus forming a side discharge-tube. The discharge-opening 1 is shown as consisting of a single opening and oblong, as is preferable in the case of boxes used for tooth-powder; but it will be understood that the number of discharge-openings may be increased as desired, in accordance with the use to which the box is to be put. If the box is to be used for face or similar powders where a sprinkling action is desired, the discharge portion of the tube C may be perforated with a large number of small discharge-openings.

The discharge opening or openings 1 are opened and closed by the rotation upon the discharge-tube C of a spring-sleeve D, inclosing the tube and provided with the opening 2, which is brought into registry with the discharge-opening 1 in the discharge-tube C when powder is to be discharged. This spring-sleeve D is preferably formed by rolling the piece of metal forming the sleeve upon a mandrel of smaller size than the discharge-tube C and then springing the sleeve into position upon the tube C. The space between the edges of the spring-sleeve preferably form the discharge-opening 2 through the sleeve, as shown, although a separate opening may be provided for this purpose, and the tube C is preferably of the form shown, provided with a small knurl 3 below the sleeve D and the cap-knurl 4 above the sleeve D. With this preferred construction the spring-sleeve is held in position longitudinally of the discharge-tube by the two knurls 3 4 and is applied to the discharge-tube by springing it over the small knurl 3 and pushing it into place over said knurl and longitudinally of the discharge-tube. The spring-sleeve should fit quite tightly upon the discharge-tube to prevent leakage of the fine powder between the tube and sleeve and to prevent the opening of the box by accidental rotation of the sleeve upon the tube.

While the spring-sleeve D may be used with a smooth surface, I preferably roughen the sleeve or provide it with a series of projections 5, as shown, which may be formed by striking up the metal, by which projections the sleeve may more readily be held by the fingers in opening and closing the box. The spring-sleeve may be free to rotate entirely about the discharge-tube; but I preferably employ a stop 6 on the tube, engaging the sleeve to limit its movement beyond a

certain point, while at the same time permitting the sleeve to rotate sufficiently to secure the full opening and efficient closing of the discharge-opening 1. This stop is preferably arranged as shown, so as to stop the sleeve in proper position both in opening and closing the box.

The discharge-tube C may be secured to the cover B in any suitable manner; but the construction shown is simple, cheap, and efficient and in itself forms a specific feature of the invention. It is desirable that the knurl 3 below the spring-sleeve D and over which the latter is sprung should project but slightly, so as to secure its proper spring-pressure about the discharge-tube, and with the small knurl desired the inner end of the discharge-tube cannot well be rolled upon the inner surface of the cover, so as to secure the firm-holding and powder-tight joint desired. I avoid this difficulty and secure an efficient and durable construction by spinning the opening in the cover inward or eyeleting it to form the flange 7, projecting inwardly of the box and longitudinally of the discharge-tube, through which the inner end of the discharge-tube C is passed, and then spreading or expanding the inner end of the discharge-tube and flange 7 slightly, as shown, which may readily be done. I have found that a strong powder-tight joint may thus be formed with the knurl 3 of the small projection desired.

My invention provides a very cheap and durable construction of powder-box by which the escape of powder is efficiently prevented except through the discharge-opening, as desired, and the box is very convenient in use. A very desirable feature is that the discharge-opening 1 may readily and with certainty be brought on the upper side of the box in opening, so that the accidental dropping of the powder from the discharge-tube in opening is avoided. This result is secured in the most convenient and natural manner of handling the box in opening, which consists in holding the spring-sleeve D by the fingers of the left hand with the opening 2 upward and the box in a horizontal position, rotating the box by the right hand until the opening 1 is brought opposite the opening 2, as shown in Fig. 1, the powder then being discharged through the openings 1 2 by moving the box into the desired position by the right hand.

It will be understood that my invention is not to be limited to the exact construction shown, but that many modifications may be made therein without departing from the invention.

What I claim is—

1. A powder-box having a side discharge-tube and a spring-sleeve thereon provided with a discharge-opening and adapted to be rotated on said tube to open and close the box and to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve, substantially as described.

2. A powder-box having a side discharge-tube and a spring-sleeve thereon partially inclosing the tube and forming a discharge-opening between its edges, said sleeve being adapted to be rotated on said tube to open and close the box and to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve, substantially as described.

3. A powder-box having a side discharge-tube, a spring-sleeve thereon having a discharge-opening and adapted to be rotated on said tube to open and close the box and to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve, and a stop limiting the movement of the sleeve, substantially as described.

4. A powder-box having a side discharge-tube, a spring-sleeve thereon having a discharge-opening and adapted to be rotated on said tube to open and close the box and to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve, and means for stopping the sleeve in the positions of opening and closing the box, substantially as described.

5. A powder-box having a side discharge-tube, a spring-sleeve thereon provided with a discharge-opening and adapted to be rotated on said tube to open and close the box and to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve, and projections on the sleeve for holding the latter by the fingers, substantially as described.

6. A powder-box having a side discharge-tube having circumferential projecting portions or knurls on opposite sides of the discharge-opening, and a spring-sleeve on said tube between said knurls provided with a discharge-opening and adapted to be rotated on said tube to open and close the box and to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve, substantially as described.

7. A powder-box having an opening formed with a flange turned inwardly of the box and longitudinally of a side discharge-tube passing through said opening, said side discharge-tube having its inner end passed through said opening and expanded into said flange, a circumferential projecting portion or knurl bearing against the outside of the box, and a spring-sleeve on said tube outside said knurl provided with a discharge-opening adapted to be rotated on said tube to open and close the box and to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve, substantially as described.

8. A powder-box having a discharge-tube provided with a discharge-opening, and a spring-sleeve thereon provided with a discharge-opening and adapted to be rotated on said tube to open and close the box and to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve, substantially as described.

9. The combination with side discharge-tube C having knurls 3, 4 and discharge-opening 1, of spring-sleeve D between said knurls having opening 2 and adapted to form a tight closure between the sleeve and the tube by the spring-pressure of the sleeve, substantially as described.

10. The combination with side discharge-tube C having discharge-opening 1, of spring-sleeve D on said tube having opening 2 and adapted to form a tight closure between the sleeve and the tube by the spring-pressure of the sleeve and stop 6, substantially as described.

11. The combination with a box provided with an opening having flange 7 projecting inwardly of the box and longitudinally of a discharge-tube passing through said opening, of said tube having discharge-opening 1 and knurl 3 outside the box and having its inner end entering the box through said opening and expanded into said flange, and spring-sleeve D on said tube outside said knurl having opening 2 and adapted to form a tight closure between the sleeve and tube by the spring-pressure of the sleeve.

12. The combination with side discharge-tube C having discharge-opening 1, of spring-sleeve D on said tube having opening 2 and projections 5 and adapted to form a tight closure between the sleeve and the tube by the spring-pressure of the sleeve, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM H. ATKINSON.

Witnesses:

GEORGE F. MILLER, Jr.,

ELMER E. SOMERS.