E. E. FORD.

COLLAPSIBLE TUBE.

APPLICATION FILED APR. 13, 1917.

1,278,901. Patented Sept. 17, 1918.

Fig. 2.

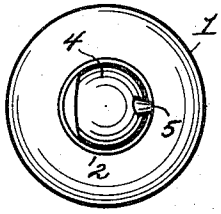
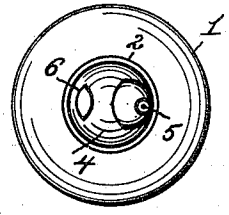


Fig. 4.



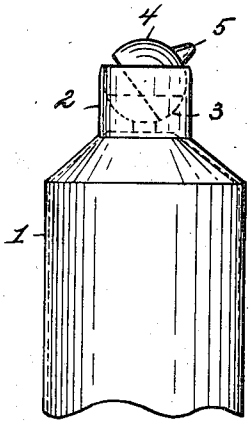


Fig. 1.

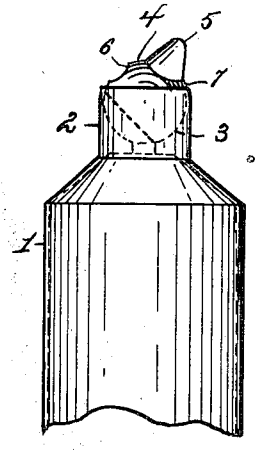


Fig. 3.

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COLLAPSIBLE TUBE.

1,278,901. Specification of Letters Patent. Patented Sept. 17, 1918.

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To all whom it may concern:

Be it known that I, ELIOT E. FORD, a citizen of the United States, residing in the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Collapsible Tubes, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to numerals of reference marked thereon, forming a part of this specification.

My invention relates to collapsible tubes for plastic materials or liquids, such as paint, ointment, oil, paste, powder and the like, where the material contained in the tube may be pressed out of an opening at one end.

The primary object of my invention is to provide a simple, efficient and inexpensive swiveled spherical closure in lieu of the commonly used screw-top, which firstly, can readily be secured into a spherical seat, formed in the neck of the contracted outlet of the tube, and secondly, owing to the construction of the swiveled spherical closure, serves the purpose of at all times, when the tube is not in use, to keep the discharge end thereof closed, and when it is desired to force the contents of the tube toward and out of the discharge end thereof, it only becomes necessary to swivel the spherical closure on the spherical seat in any direction, thereby permitting the contents of the tube to be forced out, and at the same time, when the closure is returned to its normal position, to wipe the remaining particles of material from the neck thereof.

Hitherto, in the construction of collapsible tubes and containers of the kind to which my invention relates, it has been customary to cover the contracted outlet with a screw cap, which when removed, was often lost, and thus permitting the contents of the tube to flow around and about the neck of the tube, presenting an unsightly appearance and an unsanitary condition.

It is well known that in talcum powder cans provided with a cover or top known commercially as "revolving sifter top," the powder during transit or manipulation, will work its way through the perforations in the top of the can, therefore presenting an unsightly apperance. In cans of that type, it is customary to secure a revoluble cover or top provided with perforations designed to register with corresponding perforations in the top of the can, so that when said perforations in the revoluble top and can register, powder may be shaken from the can, and when the perforations do not register, the can is locked to prevent the removal of the powder therefrom. It also quite frequently happens that before shipment, the cover or top of the can, instead of being properly locked, is so left that the perforations in the top of the can and cover register, thereby permitting the powder, through the handling of the cans, to sift through said perforations. In order to overcome these difficulties, and to furnish a positive closure for the top of the box, I employ a revoluble spherical closure secured upon a spherical seat formed in the neck of the contracted outlet of the tube.

With this end in view, my invention consists in certain novelties of construction and arrangements of parts, as herein set forth and pointed out in the claims. While the preferred form of my invention is illustrated in the accompanying drawings, yet it is to be understood that minor detail changes may be made without departing from the scope thereof.

In the accompanying drawings,

Figure 1 represents a fragmentary side elevation of my invention, the lower part of the tube being broken away.

Fig. 2 represents a plan view of the same.

Fig. 3 represents a fragmentary side elevation of a modified form of my invention; and

Fig. 4 represents a plan view of the same.

Similar numerals of reference refer to like parts throughout the specification and drawings.

In the drawings, 1 represents an ordinary collapsible tube, such as is used for containing plastic pastes, oils, paints, and the like, and which may be made of any suitable flexible rolled sheet metal, having the usual contracted outlet at one end, which in its preferred form, consists of a tubular neck 2, the interior of the neck being provided with a spherical seat 3, upon which is revolubly mounted the spherical closure 4, and which is secured thereto by crowding the metal

adjacent to the edge of the neck against the spherical closure, thereby revolubly securing the closure in the neck of the tube, to prevent accidental separation of the same.

A suitable finger piece 5 is formed on the top of the spherical closure 4 by means of which it is manipulated. The closure is preferably made from suitable sheet metal, having a shape which lends itself readily to manufacture by the use of suitable dies.

The spherical closure 4 is further provided with an aperture 6, through which the contents of the tube 1 may be discharged when said aperture is exposed beyond the neck of the tube, as clearly indicated in Figs. 3 and 4 of the drawings, and which when the closure is in its normal position, is concealed within the neck of the tube, thereby preventing any of the contents of the tube from being discharged.

The employment of an aperture in the closure causes the contents of the tube to be discharged in a circular stream corresponding to the aperture 6 shown in Fig. 4, whereas, the employment of the closure illustrated in Figs. 1 and 2 of the drawings, where the aperture is omitted, causes the contents of the tube to be discharged in a ribbon-like stream, of a shape corresponding to the opening disclosed between the neck of the tube and the edge of the spherical closure, as clearly indicated in Fig. 2 of the drawings.

It will be noted that the finger piece 5 illustrated in Figs. 1 and 2 is centrally arranged upon the spherical closure 4, whereas, in Figs. 3 and 4, the finger piece 5 is located off center, in order that when the lower portion thereof engages with the neck of the tube, as indicated at 7 in the drawings, the aperture 6 will be exposed and clear the edge of the neck of the tube, and when the finger piece is moved in the opposite direction, so as to contact with the other portion of the neck, the aperture will be concealed within the neck of the tube.

Experience has demonstrated that the organization above described is a highly efficient one, and while I have shown the preferred embodiment of my present invention, I do not wish to be limited to the exact details of construction, combination and arrangement herein set forth, as obvious modifications thereof will appear to those skilled in the art, and such departures from what is herein described and claimed, I consider within the scope of my claims.

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

1. As an improved article of manufacture, a tube having a collapsible tubular body, provided with a contracted outlet at one end and an approximately semi-spherical closure having a universal movement, secured to said outlet.

2. As an improved article of manufacture, a container for pastes, powders, and the like, provided with a contracted outlet at one end and an approximately semi-spherical closure having a universal movement, secured to said outlet.

3. As an improved article of manufacture, a tube having a collapsible tubular body, provided with a contracted outlet at one end and a hollow, approximately semi-spherical closure having a universal movement, secured to said outlet, said closure provided with an aperture to permit the contents of the tube to be discharged therethrough.

4. As an improved article of manufacture, a container for pastes, powders, and the like, provided with a contracted outlet at one end and a hollow, approximately semi-spherical closure having a universal movement, secured to said outlet, said closure provided with an aperture to permit the contents of the container to be discharged therethrough.

5. As an improved article of manufacture, a container for pastes, powders, and the like, provided with a contracted outlet at one end, provided with an approximately semi-spherical seat, a hollow, approximately semi-spherical closure having a universal movement, mounted upon said seat, said hollow semi-spherical closure provided with an aperture to permit the contents of the container to be discharged therethrough.

6. As an improved article of manufacture, a container for pastes, powders, and the like, provided with a contracted outlet at one end, provided with an approximately semi-spherical seat, a hollow semi-spherical closure having a universal movement, mounted upon said seat, said spherical closure provided with an aperture to permit the contents of the container to be discharged therethrough and further provided with a finger piece for manipulating said closure.

This specification signed and witnessed this 12th day of April, 1917.

ELIOT E. FORD.

Witnesses:
FRED'K C. FISCHER,
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