

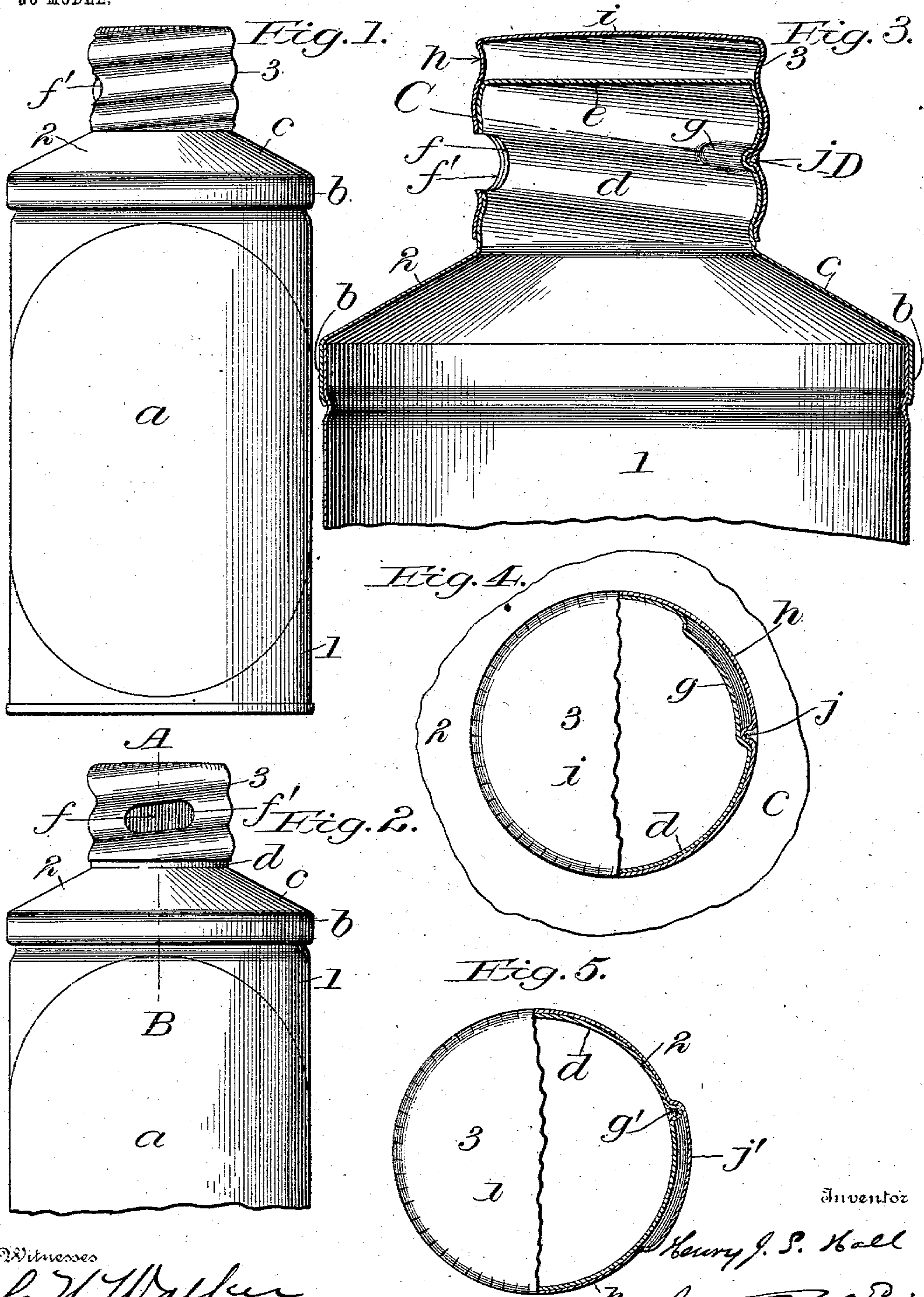
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H. J. S. HALL.
SCREW CAP CLOSURE.

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NO MODEL.



Witnesses
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SCREW-CAP CLOSURE.

SPECIFICATION forming part of Letters Patent No. 730,367, dated June 9, 1903.

Application filed April 7, 1903. Serial No. 151,519. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. S. HALL, a citizen of the United States of America, and a resident of the borough of Manhattan, New York city, in the State of New York, have invented a new and useful Improvement in Screw-Cap Closures, of which the following is a specification.

This invention relates, primarily, to the closures of receptacles used as original packages for tooth-powder and adapted for conveniently discharging the contents upon the tooth-brush and to be tightly closed, so as to be free from liability to the accidental escape of the powder in traveling-bags and the like. Another characteristic aimed at in such receptacles is that the movable part of the closure shall be inseparably attached, so that it cannot be accidentally lost or misplaced, and as an aid in preventing the refilling of the box.

The present invention is an improvement on my screw-cap closure patented the 19th of August, 1902, by United States Letters Patent No. 707,320; and its distinguishing objects are to adapt an externally-applied and inseparable screw-cap to be more tightly fitted, to provide for opening the outlet and for closing the same with less movement of the cap than in the case of said patented closure, and at the same time to render available a more readily-formed and more permanent stop and retaining device free from liability to excessive strain.

The improved closure, like the original patented device, may be used for any box, bottle, or jar for powders, liquids, or semisolids; but it is primarily designed for tooth-powder boxes, as aforesaid, and is hereinafter so described.

A sheet of drawings accompanies this specification as part thereof.

Figures 1 and 2 are front views of a tooth-powder box provided with the improved closure, showing the same respectively closed and opened. Fig. 3 represents a magnified longitudinal section on the line A B of Fig. 2. Fig. 4 represents a top view, partly in section, on the line C D of Fig. 3; and Fig. 5 is a like view illustrating a modification.

Like reference letters and numbers indicate like parts in all the figures.

A tooth-powder box having the improved closure is intended and adapted to consist,

including its closure, of three parts—namely, a body 1, which may be of any suitable material, as sheet metal, paper, wood, or glass; a die-formed cover 2, of suitable sheet metal, as ductile tin-plate or brass, and a die-formed cap 3 of the same material as the cover 2.

The body 1 is provided in any approved way with the customary label *a*, indicating the front of the box, and is fitted at a tooth-powder factory, for example. The cover 2, carrying the cap 3, is then applied and by means of a depending marginal flange *b* or its equivalent is or may be inseparably attached to the body 1. The other features of the cover 2 are a top portion *c*, of any preferred shape, a screw-threaded nozzle *d*, a preferably-closed upper end *e*, an outlet-opening *f* in the front of the nozzle at a convenient height above the top portion *c*, and a stop *g* at a convenient point, preferably at the back of the nozzle.

The cap 3 is constructed with screw-threaded side walls *h*, fitted to the nozzle *d*, a closed upper end *i*, and a stop *j*, together with an outlet-opening *f'*, so shaped and located as to register with the outlet-opening *f* in the nozzle when the latter is fully open, as in Fig. 2.

The stops *g* and *j* are in common indented in the sheet metal of the closure, one of them, preferably the nozzle-stop *g*, being elongated to the necessary extent in the direction of the screw-thread to permit the movement of the screw-cap necessary to open and close the outlet. Stops of this form are readily made at the factory and are practically permanent, owing to the rigidity of the indented sheet metal. The screw-cap is consequently rendered inseparable after the stops are formed.

Owing to the permanence of the retaining device formed by the stops *g* and *j* in the improved closure, the closed upper end *e* is not considered essential, as without this it is only possible to refill the box through the outlet-openings *f* and *f'*, which effectually prevents the reuse of the box by pharmacists or small manufacturers. The closed upper end is preferred, however, owing to the assistance it affords against the leakage of the contents when the outlet is closed. The improved screw-cap is at the same time adapted to be more tightly fitted to the nozzle than hereto-

fore, so as to render the closure powder-tight, with or without a closed upper nozzle end, and a very short rotary movement of the cap is sufficient to fully open the outlet, while
 5 the size of the outlet may be graduated with nicety by opening it to a greater or less extent. Whether fully or partially open the outlet is always in one place with reference to the label *a* of the box, and the discharge
 10 of the powder upon the tooth-brush without waste is thus facilitated.

The modification illustrated by Fig. 5 consists in elongating the cap-stop *j'* instead of the nozzle-stop *g'*. With either arrangement
 15 the stops perform no function whatever, except as stops to limit the movement of the cap and to render it inseparable. The strain due to closing the box powder-tight and to opening the outlet is borne wholly by the
 20 screw-thread of the cap and nozzle and is exerted equally around the entire circumference of the cap.

The term "front" is herein used for the side or edge where the outlet is formed.

25 The outlet-openings *f* and *f'* may be of any preferred size or shape, and other like modifications will suggest themselves to those skilled in the art.

Having thus described said improvement, I
 30 claim as my invention and desire to patent under this specification—

1. An improved screw-cap closure formed by a screw-threaded nozzle constructed with an outlet in its front and provided with an indented stop, and an externally-applied screw-
 35 cap having an outlet-opening adapted to be alined with said outlet-opening in the nozzle to fully or partially open the latter, and constructed with an indented stop which interlocks with the stop carried by the nozzle
 40

and permanently secures said cap against removal, one of said stops being elongated in the direction of the screw-thread.

2. An improved screw-cap closure formed by a screw-threaded nozzle of sheet metal constructed with an outlet-opening in its front and provided with a stop at its back, and an externally-applied screw-cap of sheet metal having an outlet-opening adapted to be alined with said outlet-opening of the nozzle to fully
 45 open the latter, and constructed with a stop which matches the stop carried by the nozzle, said stops being indented in the respective parts and permanently interlocked with each other to limit the opening and closing movements of the cap and to prevent its removal,
 50 and one of said stops being elongated in the direction of the screw-thread.

3. The combination with the body of a tooth-powder box of a screw-cap closure comprising a cover, inseparably attached to said body, having a screw-threaded nozzle constructed with a closed upper end and an outlet-opening in its front, and a screw-cap, inclosing said upper end and constructed with
 60 an outlet-opening adapted to be alined with said outlet-opening in the nozzle, said nozzle and said cap being provided respectively with stops indented therein, permanently interlocked with each other, and arranged to limit
 65 the opening and closing movements of the cap, and to prevent its removal, one of said stops being elongated in the direction of the screw-thread, substantially as hereinbefore specified.
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Witnesses:

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