Dec. 11, 1923. 1,476,700

M. FELDSTEIN

CONTAINER CAP

Filed Jan. 3, 1922

Fig. 1.

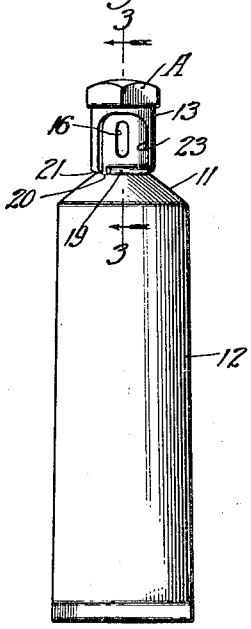


Fig. 2.

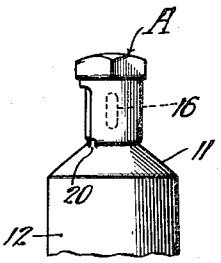


Fig. 3.

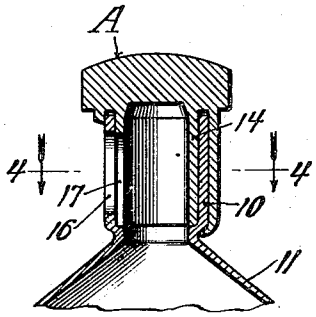


Fig. 4.

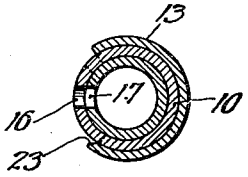


Fig. 5.

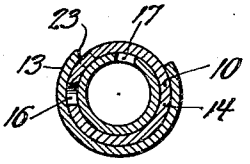


Fig. 6.

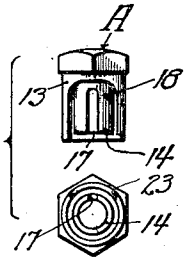


Fig. 8

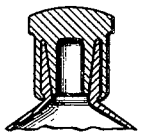
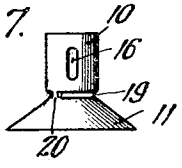


Fig. 7.



Inventor.
Max Feldstein.

By: Gabel & Mueller Attys.

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UNITED STATES PATENT OFFICE.

MAX FELDSTEIN, OF CHICAGO, ILLINOIS.

CONTAINER CAP.

Application filed January 3, 1922. Serial No. 526,671.

To all whom it may concern:

Be it known that I, MAX FELDSTEIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Container Caps, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to container caps and has to do more particularly with a self-contained cap having a secured movable cap member adapted to open and close the cap outlet by a slight manipulation of the cap member without a removal thereof. My improved cap is particularly useful on collapsible containers of the small tubular type and is especially adapted for use with pastes and creams although, of course, not limited thereto.

In the collapsible tubes now on the market containing vaseline, tooth paste, shaving cream, etc., the cap in general use is of the screw type which must be removed when the tube contents are to be pressed out and then the cap replaced. This is frequently inconvenient and also results in the frequent loss or misplacement of the cap.

Powder containers with fixed caps have been in use for some time but a powder or fluid is easily handled in that the outlet at the cap is self-cleaning in that the fluid or powder does not adhere and leaves a clean opening when the cap is closed. In using a paste or cream, however, I have found it to be difficult to secure a satisfactory and sanitary nozzle or outlet at the cap in that there is usually a slight portion adhering to the outer wall or outer orifice of the nozzle.

To overcome these various difficulties I have provided a tubular self-contained cap having an outlet or nozzle adapted to be fully closed when the cap is locked and wherein an exposed part around the nozzle opening or outlet is cleaned and covered when the cap is turned so as to leave a clean surface exposed when the cap is opened again.

For a better understanding of my invention, reference is to be had to the accompanying drawing in which—

Fig. 1 is a side elevation of a collapsible tubular container with my improved cap, having its nozzle or outlet open;

Fig. 2 is a view similar to Fig. 1 but with the cap closed;

Fig. 3 is a vertical section along the line 3—3 of Fig. 1;

Fig. 4 is a transverse section through the cap along the line 4—4 of Fig. 3;

Fig. 5 is a section similar to Fig. 4 but with the cap rotated into its closed position;

Fig. 6 is a side and bottom view of the outer cap member;

Fig. 7 is a detail view of the container neck with the cap removed, and

Fig. 8 shows a modified form of cap having tapered walls instead of straight walls as in the other form.

Referring now more in detail to the preferred form of my invention as disclosed herein, it comprises cap and neck members, the latter being preferably a cylindrical element 10 which is a continuation of the shoulder portion 11, all preferably cast as an integral member to which the usual soft metal collapsible container 12 is secured in a suitable manner. The cap member A comprises preferably an outer cylindrical wall 13 and an inner cylindrical wall 14 between which is an annular recess 15 for receiving the neck member 10. This neck member 10 preferably is of a sliding fit in the recess 15 so as to provide a joint sufficiently tight to prevent escape of the contents, but permitting a free movement of the cap to open and close the nozzle outlet 16 in the wall of the neck 10.

The inner cylinder 14 of the cap has a slot 17 adapted to register with the slot 16 of the neck so as to permit an emission of the paste when the tube 12 is compressed. The outer wall 13 of the cap has an opening 18 preferably large enough to clear the outlet 16 sufficiently to permit a free flow of the paste without touching the outer wall when the cap is open and also sufficiently large to permit applying a brush or similar device to the nozzle outlet whereby the paste pressed out from the tube may be readily removed without interference by the outer wall. Also this cap opening is preferably large enough to clear the ribbon of paste sufficiently to prevent retaining a portion thereof when the cap is turned to close the tube. I find that the objection to having this outer opening retaining any of the paste is that it would be exposed and liable

to collect dust or dirt. Also, this portion, in some pastes, would harden and interfere with the free emission of the contents causing rupture of the tube or a sudden popping of the paste so that more is emitted than desired. When the tube is used the next time this exposed part would be the first to be used and the hardened part the first portion on the brush. By preventing such exposure I eliminate this objection.

In order to securely hold the cap in place I preferably provide an annular groove 19 at the base of the neck 10, said groove having a stop or lug portion 20 to limit the movement of the cap, said lug being preferably an integral part of the casting. The lower edge 21 of the outer wall of the cap is then crimped into the groove 19 as shown in Figs. 1, 2 and 3. As the cap A is rotated from one position to the other its movement is limited by the engagement between the lug or stop 20 and the edges of the outer wall, the cap being cut away at 22 to permit a sufficient rotary movement of the cap to fully close the nozzle outlet 16 and also cover the exposed portion around the outlet as shown in Fig. 1.

It will also be noted that the closing edge 23 of the cap opening is cut back so that when the cap is rotated from its open position of Figs. 1 and 4 to its closed position as shown in Figs. 2 and 5, any slight residue of paste on the exposed part of the neck around the slot 16 is gathered up and retained beneath the under cut edge.

In operating my improved cap in connection with a collapsible tube of the character shown in the drawing, and such as is ordinarily used for creams, pastes, vaseline, etc., the cap is moved from its closed position of Fig. 2 to its open position of Fig 1 by a slight rotation of the cap. The movement of the cap is limited by the engagement between the left stop edge on the cap opening and the lug 20. The tube 12 is now compressed thereby forcing a ribbon of paste out of the nozzle outlet 16. If this is a tooth paste the ribbon of paste is placed upon the brush and broken away by drawing the brush across the opening. This usually leaves a slight amount of the paste adhering around the edges of the outlet as well as in the outlet itself. To leave such a portion exposed while the tube is put away for further use, would, of course, be unsanitary. This is particularly objectionable because this exposed part would be the first part pressed out and put upon the brush the next time the paste was used. Therefore, in closing up the cap after its use, it is rotated by a slight twist from its open position of Figs. 1 and 4 to its closed position of Figs. 2 and 5. The preliminary part of this closing movement causes the nozzle inner opening 17 to close the nozzle opening 16 in the neck of the cap. This leaves a small portion of the paste in the recess of the slot 16. The continued closing movement of the cap causes the advancing edge 23 thereof to gather up any residue of paste left around the nozzle opening on the exposed portion as shown in Fig. 1 and this residue is left beneath the under cut edge 23. At the same time this movement cleans the exposed portion around the nozzle opening so that when the cap is again turned back to open the nozzle the exposed portion is left clean so that when the tube is compressed to force out some of the paste the brush may take this up without gathering any of the residue left by the previous use.

From the above it will be apparent that I have provided a non-separable, sanitary cap member, particularly effective when used with pastes, creams, or anything of a viscous nature although not limited thereto. Also I contemplate using my invention in other ways than that shown herein and understand that changes and modifications will readily occur to those skilled in the art. Therefore, I do not desire to be limited to the exact structure shown and described, but aim to cover all that which comes within the spirit and scope of the appended claims.

What I claim as new and desire to secure by United States Letters Patent is:

1. A container cap of the character described comprising movably cooperating neck and cap elements having registrable wall outlets, one of said elements being a cylindrical wall member and the other having inner and outer walls closely engaging the single wall member.

2. A container cap of the character described comprising rotatably co-operating neck and cap elements having registrable wall outlets, one of said elements having concentric walls and the other an intermediately disposed closely engaged wall to close and open the wall outlets.

3. A container cap of the character described comprising a cylindrical neck having a wall outlet, and a movable cap having inner and outer cylindrical closures engaging the inner and outer walls of the neck and having wall openings to expose and close the neck outlet.

4. A container cap of the character described comprising a cylindrical neck having a wall outlet, and a rotatable cap having inner and outer cylindrical closures engaging the inner and outer walls of the neck and having wall openings to expose and close the neck outlet.

5. A container cap of the character described comprising movably cooperating neck and cap elements having registrable wall outlets, one of said elements being a

cylindrical wall member and the other having inner and outer walls closely engaging the single wall member, and means for holding the neck and cap against separation.

6. A container cap of the character described comprising a cylindrical neck having a wall outlet, a movable cap having inner and outer cylindrical closures engaging the inner and outer walls of the neck and having wall openings to expose and close the neck outlet, and means for holding the neck and cap against separation.

7. A container cap of the character described comprising a cylindrical neck having a wall outlet, a rotatable cap having inner and outer cylindrical closures engaging the inner and outer walls of the neck and having wall openings to expose and close the neck outlet, and means for holding the neck and cap against separation.

8. A container cap for use with collapsible containers of viscous matter comprising relatively movable neck and cap elements having registrable nozzle openings, the cap opening being sufficiently larger than the neck opening to permit ready access to the emitted matter without interference by the cap opening, and said cap being sufficiently movable to close the nozzle opening and cover the exposed portion around the nozzle opening of the neck.

9. A container cap of the character described comprising, a cylindrical neck having a wall outlet, a cap having concentric walls engaging the inner and outer surfaces of the neck and having a wall opening to register with and also close the neck opening, the opening of the inner wall of the cap being smaller than the outer wall opening so as to close the neck opening preliminary to closure by the outer cap wall.

In witness whereof, I hereunto subscribe my name this 21st day of December, A. D 1921.

MAX FELDSTEIN.