July 3, 1928.

1,676,023

C. HAMMER

GLASS THREAD CONTAINER

Filed May 5, 1927

Fig. 1.

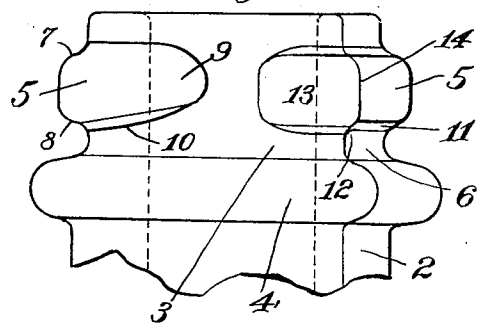


Fig. 5.

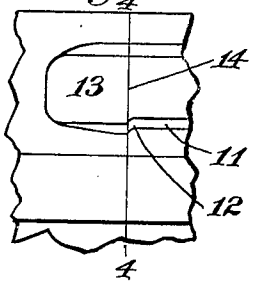


Fig. 2.

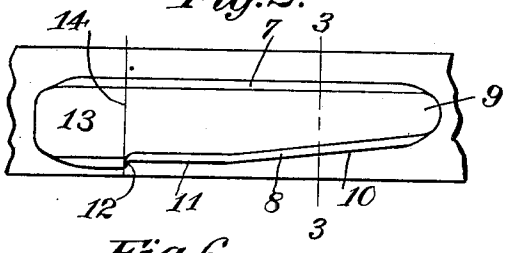


Fig. 4.

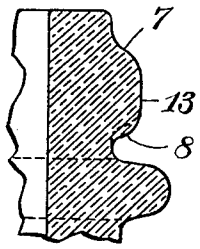


Fig. 6.

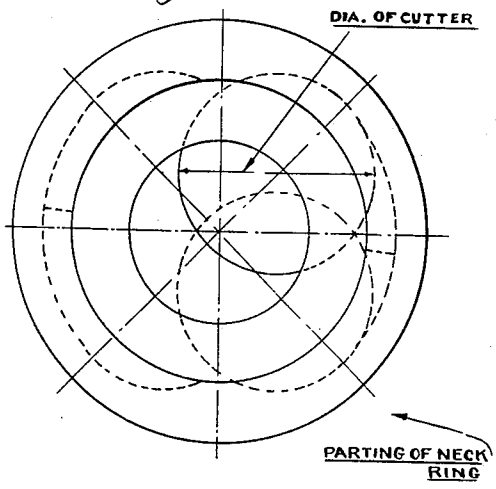


Fig. 3.

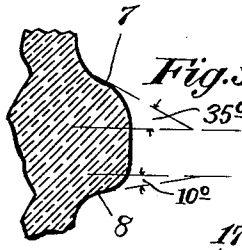
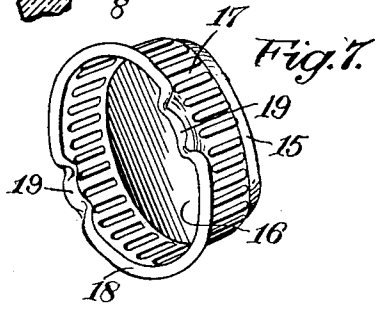


Fig. 7.



Inventor

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By his Attorney

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UNITED STATES PATENT OFFICE.

CHARLES HAMMER, OF HOLLIS COURT BOULEVARD, NEW YORK, ASSIGNOR TO AMERICAN METAL CAP COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

GLASS THREAD CONTAINER.

Application filed May 5, 1927. Serial No. 188,908.

This invention relates to glass containers adapted for use with rotary screw on and off caps or closures, the improvement having to do with the threads of such containers, the object of the invention being to provide an improved locking thread on the container so constructed that a quick and efficient sealing of the container is obtained, the turning of the cap too far thereon prevented and the sealing position of the cap maintained without liability of premature release by the riding or turning backward of the cap during shipment or otherwise.

It is common in containers of the variety referred to to provide threads or grooves of lengthwise inclined form for holding the closure or cap on the container, but these inclined threads or grooves while efficiently pulling down the cap on the top of a container nevertheless permit the cap to ride or turn back during transportation owing to jars and shocks thus prematurely releasing the cap. Furthermore, as the caps are usually applied by machinery it is not infrequent that they are rotated too far on to the container thus turning the cap off of the threads and stretching it so that it will not efficiently hold in the reuse thereof.

The object of the present improvement therefore is to avoid these and other disadvantages and provide a container thread so constructed that it will limit the forward turning of the cap when it is applied and at the same time prevent the premature backing off of the cap and also provide a form of thread that has the proper and gradual inclination thereby to insure a quick and easy application of the cap to the container.

In the drawings accompanying and forming part of this specification, Fig. 1 illustrates a side view of the upper part of a container showing the present improvement; Fig. 2 is a plan view of a thread; Figs. 3 and 4 are cross sectional views of the thread taken on lines 3—3 and 4—4 of Figs. 2 and 5; Fig. 5 is a detail view of one end of the thread; Fig. 6 is a plan view illustrating the manner in which the neck ring or mold is cut and by means of which neck ring the neck of the glass container is molded for use with a 17 millimeter cap, and Fig. 7 is a perspective view of a cap which may be used on this container.

Similar characters of reference indicate corresponding parts in the several views.

Before explaining in detail the present improvement and mode of operation thereof, I desire to have it understood that the invention is not limited to the details of construction and arrangement of parts which are illustrated in the accompanying drawings, since the invention is capable of other embodiments, and that the phraseology which I employ is for the purpose of description and not of limitation.

This improved thread while adapted for various kinds of containers to which rotary screw caps can be applied, nevertheless is particularly adapted for use on glass containers of which one form thereof is shown in the drawings comprising a body 2 having a neck portion 3 preferably provided with a shoulder 4. The locking projections or threads 5 are shown herein as of the divided variety and of which there may be any desired number but in the present instance two thereof are shown. Each of these threads 5 is spaced from the shoulder by a groove 6 merging into the shoulder. Each thread has a tapered top and bottom face so that in cross section it may be said to be of substantially frusto conical form being shown with a greater degree of angularity at its top as at 7 than at its bottom as at 8. In practice the angle of the thread for the form of container shown at the top is about 35° and at the bottom is about 10°. Each thread is inclined downwardly or in the direction of its length on its under face or side from its upper or entering end 9 for the major portion of its length as at 10, this inclined face terminating in a straight face 11 which in turn terminates in a stop face 12 formed by the end 13 of the projection located at the forward side of the seam. Where two of these threads are provided, the straight face 11 and stop face 12 join each other at the seam 14 of the container while the end 13 carrying the stop face is preferably spaced from the shoulder. This particular formation of the thread end facilitates the removal of the container when made of glass from the mold.

Any of the usual forms of caps may be used with this container such as the well-known Amerseal cap in which the cap 15

comprises a top 16 and a depending flange or skirt 17 having a beaded lower edge 18 having combined therewith a plurality of arc-shaped lugs 19 inset with curved inner faces substantially corresponding to the container neck adapted to engage the threads of the container as the cap is rotated into position. As this takes place, the lugs of the cap engage the inclined under face of the threads thereby pulling the cap down as it is gradually rotated on to the container. When the cap lugs reach the straight faces 11 the premature backward rotation of the caps due to jars or shocks is prevented while the further turning forward of the cap is prevented by the stop face located at the seam of the jar, the seam itself together with that portion of the projection extending in front of the seam forming the stop face.

While the straight portion of the thread is of slightly increased diameter thereby reinforcing it, nevertheless it will be observed that three sides of the thread are of curved form, the top and bottom faces being tapered in cross section so that the crown of the thread is of less width than its base, the taper of the top face being shown greater than that of the bottom face so that the latter has less angularity, while the bottom or under face is lengthwise inclined for a considerable portion of its length whereby the cap will be efficiently drawn down to properly seal the container and has a straight face for a short portion of its length whereby the cap is prevented from riding backward prematurely and a stop face at the forward end of the straight face to limit the turning on of the cap.

It is to be understood that by describing in detail herein any particular form, structure or arrangement, it is not intended to limit the invention beyond the terms of the several claims or the requirements of the prior art.

Having thus explained the nature of my said invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, I claim:

1. A container having a thread provided with a lengthwise extending inclined under face terminating in a straight face merging into a stop face, said thread having a tapered and curved top and bottom face, the latter having less angularity than the former.

2. A seamed glass container having a shoulder and a plurality of threads spaced from the shoulder by an annular groove merging into said shoulder, each of said threads having a lengthwise extending inclined under face terminating in a straight face merging into a stop face at the seam of the container and each of said threads having a top and bottom face depthwise inclined, one having greater angularity than the other.

3. A container having a thread provided at its top and bottom with depthwise inclined faces, said top face having greater angularity than the bottom face, and a lengthwise extending inclined under face terminating in a straight face.

4. A container having a thread provided at its top and bottom with depthwise inclined faces, said top face having an angularity of about 35° and said bottom face having an angularity of about 10°, and a lengthwise extending inclined under face terminating in a straight face.

5. A glass container having a thread provided with depthwise inclined top and bottom faces, said top face having an angularity of about 35° and said bottom face having an angularity of about 10° and a lengthwise extending inclined under face terminating in a straight face merging into a stop face.

6. A seamed glass container having a thread provided with depthwise inclined top and bottom faces, one having greater angularity than the other, and having a lengthwise extending inclined under face terminating in a straight face merging at the seam of the container into a stop face.

7. A seamed glass container having a thread provided with depthwise inclined top and bottom faces, said top face having greater angularity than the bottom face, and having a lengthwise extending inclined under face terminating in a straight face merging at the seam of the container into a stop face.

8. A seamed glass container having a thread provided with depthwise inclined top and bottom faces, said top face having an angularity of about 35° and said bottom face having an angularity of about 10°, and having a lengthwise extending inclined under face terminating in a straight face merging at the seam of the container into a stop face.

9. The combination with a seamed glass container having a shoulder and a plurality of threads spaced from the shoulder by an annular groove merging into said shoulder, each of said threads having depthwise inclined top and bottom faces, the angle of the bottom face being less than that of the top face and having a lengthwise inclined under face terminating in a straight face merging into a stop face at the seam of the container, of a cap having a depending skirt provided with a strengthened or beaded lower edge having arc-shaped inset lugs with the curvature of their inner faces substantially corresponding with the curva-

ture of the container at the under side of the threads.

10. A container having a thread, the under face of which depthwise thereof has an angularity of about ten degrees.

11. A container having a thread, the under face of which depthwise thereof has an angularity of about ten degrees, said under face being inclined in the direction of its length and terminating in a straight face.

12. A container having a thread, the under face of which depthwise thereof has an angularity of about ten degrees, said under face being inclined in the direction of its length and terminating in a straight face of less length than said inclined face.

13. A container having a thread, the under face of which depthwise thereof has an angularity of about ten degrees, said under face being inclined in the direction of its length and terminating in a straight face, said straight face terminating in a stop face.

14. A container having a thread, the top and bottom faces depthwise thereof having different degrees of angularity, with said bottom face inclined in the direction of its length and terminating in a straight face.

15. A container having a thread, the top and bottom faces depthwise thereof having different degrees of angularity, said bottom face being inclined in the direction of its length and terminating in a straight face, said straight face terminating in a stop face.

16. A seamed glass container having a thread provided with a curved crown of less width than its base and having a lengthwise inclined under face terminating in a straight face of less length than said inclined face, said straight face terminating at the seam of the container in a stop face, the top and bottom faces of said thread having different degrees of angularity depthwise of the thread.

17. A glass container having a thread, said thread having a curved crown of less width than its base and having a lengthwise-extending inclined under face terminating in a straight face of less length than said inclined face.

18. A glass container having a thread, said thread having a curved crown of less width than its base and having a lengthwise extending inclined under face terminating in a straight face of less length than said inclined face, said straight face terminating in a stop face.

19. A container having a shoulder below the top of the container and having intermediate such top and shoulder and spaced from both the top and the shoulder a thread having a curved crown of less width than its base and depthwise tapered top and bottom faces merging into the crown, said bottom face having an inclined under face in the direction of its length terminating in a straight face in the direction of its length.

20. A container having a shoulder below the top of the container and having intermediate such top and shoulder and spaced from both the top and the shoulder a thread having a curved crown of less width than its base and depthwise tapered top and bottom faces merging into the crown, said bottom face having an inclined under face in the direction of its length terminating in a straight face in the direction of its length, said straight face terminating in a stop face.

Signed at 1822-3-4 Park Row Building, N. Y. city, N. Y., this 2nd day of May, 1927.

CHARLES HAMMER.