March 17, 1925. 1,530,098

T. C. WESTER

COLLAPSIBLE TUBE AND SEALING CLIP THEREFOR

Filed Sept. 15, 1922

Fig. 1.

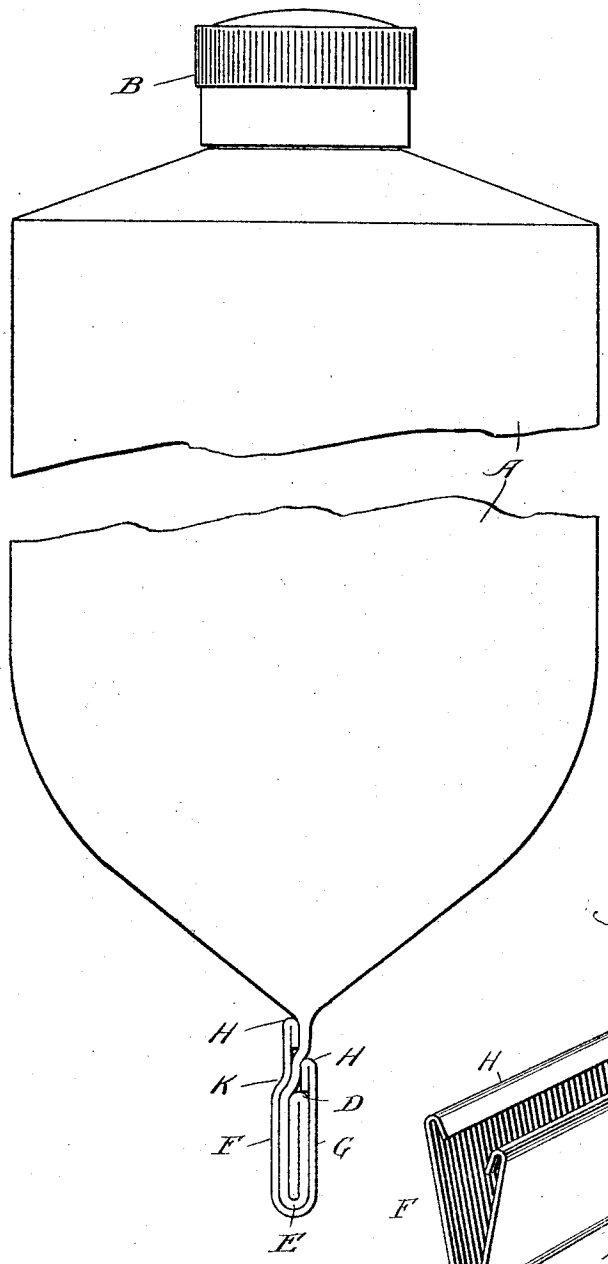


Fig. 2.

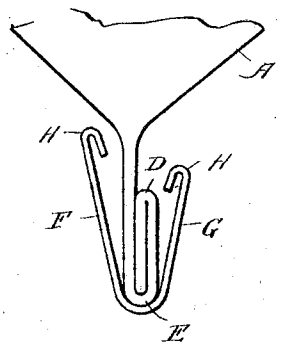


Fig. 3.

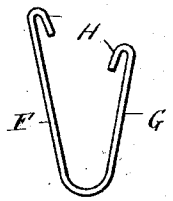
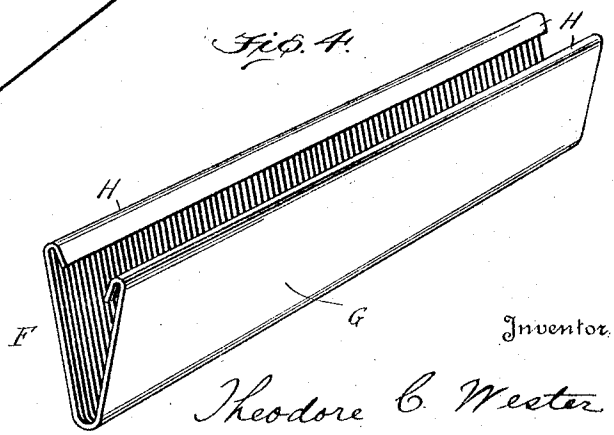


Fig. 4.



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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE TUBE AND SEALING CLIP THEREFOR.

Application filed September 15, 1922. Serial No. 583,373.

To all whom it may concern:

Be it known that I, THEODORE C. WESTER, a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in Collapsible Tubes and Sealing Clips Therefor; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to containers formed of soft metal and commonly designated as collapsible tubes. Such containers are usually provided with a cap for closing the discharge opening and are adapted to be filled through the end opposite the discharge opening, the filling end being then sealed by a clip or similar permanent closure which may, if desired, be adapted to have the end of the tube coiled or wrapped about it as the content is discharged.

The object of this invention is to provide an improved closure for the filling end of collapsible tubes which closure shall be cheap, light and form a tight, permanent seal such as will both prevent the opening up of the tube or escape of the content when pressure is applied for discharging and also avoid the breaking of the wall of the tube in proximity to the seal.

In the drawings,—

Figure 1 is an elevation on an exaggerated scale of a tube illustrating the present invention, the body portion of the tube being broken away.

Fig. 2 is a view showing the filling end of the tube and clip of Fig. 1 before the clip is closed thereon.

Fig. 3 is an end elevation of the clip.

Fig. 4 is a perspective view of the clip.

The body of the tube A and the removable cap or closure B are of usual material and construction and after filling, the bottom end is temporarily closed by flattening the wall and folding the flattened extremity, preferably as shown in Figs. 1 and 2. This preferred fold, which however is only one of several ways in which the fold may be made, has two reverse bends at D and E, respectively, and it is usually, but not necessarily, of a certain width proportioned to the width of the clip as will presently appear.

The clip is formed of relatively thin sheet metal capable of taking and retaining a permanent set and is of a length which substantially corresponds to the width of the flattened tube. One side F of the clip is made wider than the other side G and the edge of each side is preferably beaded by turning the margin inwardly as at H. The beads are preferably simple reverse bends of the metal and they are so proportioned that when the two sides of the clip are brought together the edge of the narrower side will lie below the bead on the wider side with the result that when clamped on the end of the tube the wall of the latter will be deflected over the narrower side to form an effective seal.

When the fold of the end of the tube is as shown in the drawings it is adapted to lie in the clip below the bead on the narrow side, thus the body of the tube is deflected over the fold and over the narrow side of the clip. Where the wider side of the clip is given a bend such as at K, so as to force the body of the tube in tightly over the fold as well as over the beaded edge of the narrow side, still greater security against being forced open by internal pressure is afforded.

The beads on the edges of the clip not only constitute the means for bending the flattened tube transversely, but they form rounded surfaces to protect the wall of the tube from puncture or sharp bending either when the clip is applied or during use. Furthermore, much lighter metal may be employed because of the additional strength and stiffness imparted by the folded or beaded edges.

When applied as shown in Fig. 2 and clamped down to the form shown in Fig. 1 there is no danger of the clip being either pulled or pushed off by any force which would not destroy the tube and there is a complete and effective sealing without puncturing or weakening the wall of the tube.

What I claim is:

1. A collapsible tube having its filling end flattened and folded transversely and a non-resilient sheet metal clip clamped thereon and having one side wider than the other, both sides being formed with inwardly bent edge beads and the beaded edge of the narrower side being below the bead on the wider side whereby the body of the tube is deflected transversely by the bead over the fold of the tube and beaded edge of the narrow side of the clip.

2. A clip for sealing the flattened and

folded filling end of a collapsible tube comprising a non-resilient sheet metal body bent to embrace the end of the tube and having one wide and one narrow side each with an internal marginal bead, the beaded edge of the narrower side lying below the bead on the wider side when the clip is closed for sealing the tube and the fold of the tube lying in the clip below the bead of the narrow side.

3. A clip for closing the flattened and folded end of a collapsible tube comprising a non-resilient unperforated sheet metal body bent to embrace the end of the tube and having one wide and one narrow side, the margins of both said sides being bent inwardly on themselves to form rounded edges and inwardly projecting beads, the bead on the narrower side lying below the bead on the wider side when the clip is closed for sealing the tube the body of the tube being deflected transversely over the narrower side of the clip, thereby forming an effective seal.

THEODORE C. WESTER.