

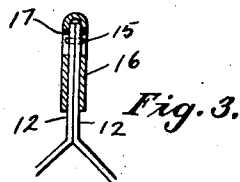
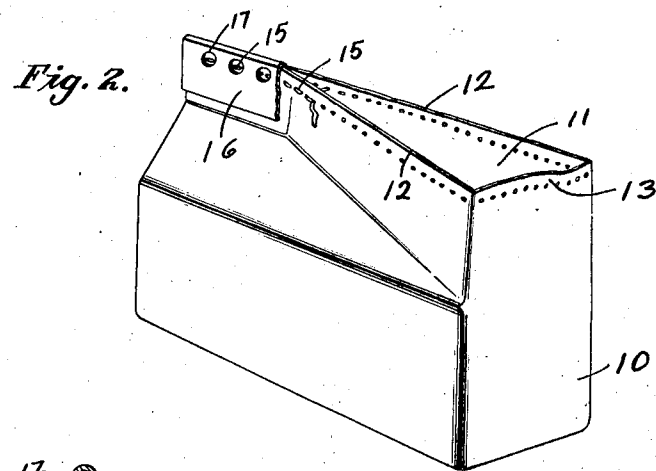
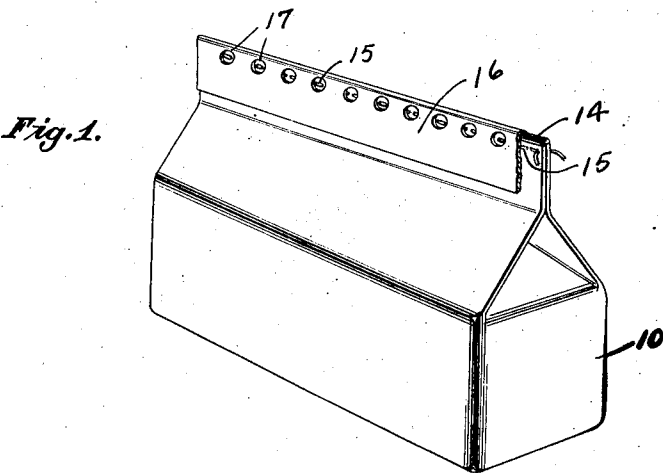
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METHOD AND MEANS FOR SEALING CONTAINERS

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METHOD AND MEANS FOR SEALING CONTAINERS

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This invention relates to method and means for sealing the access opening of containers, and more particularly to method and means of this character adapted to render the container tamper proof.

The distribution and sale of practically all products in bulk, whether small articles or materials in either solid or liquid form, has become practically obsolete. Nearly all products are now prepared by the manufacturer in comparatively small quantities in individual containers. This can be done at the factory by machinery, at much greater economy of time and expense than by the old method of having the retailer measure and pack the products. A further advantage of the individual container is that the retail purchaser expects to receive the product just as it was prepared by the manufacturer, without any change by the distributor or retailer.

However, the great majority of containers now on the market are subject to tampering by unscrupulous retailers, for the purpose of pilfering or adulterating the contents. For instance, this problem has become acute in the distribution of milk. Many styles of fiber covers with wire or metal clamps have been used on glass milk bottles to assure the customers that they are obtaining the original contents of the container. It is nevertheless quite possible with the various forms now in use, to remove the cap and pour off the cream and substitute an adulterant. Even where the milk is delivered in moisture-proof fiber containers in which the access opening is pinched together with a metal clamp, this clamp can be pried apart and resealed without leaving any evidence of the tampering, and hence the customer does not have the absolute security afforded by the present invention. Of course, milk is only one example of the practically infinite number of products which are distributed in individual containers, and are subject to the same problem of tampering.

It is therefore the object of the present invention to provide method and means for sealing containers, whereby the same cannot be opened to remove or substitute all or

part of the contents, without leaving conspicuous evidence of the change.

Another object of the invention is to provide a container of the class described, which will be simple and inexpensive in construction as well as simple in operation, and of proper design and construction to withstand handling in transportation and distribution.

Other objects and features of novelty will be apparent from a perusal of the following specification, and an inspection of the accompanying drawings in which:

Fig. 1 illustrates a detail perspective view of the invention comprising a container of flexible material, formed at the top so that the sides fold flat together and provided with a sealing means according to one preferred embodiment of my invention.

Fig. 2 is a view somewhat similar to Fig. 1, but showing the container after it has been opened by the consumer for legitimate removal of the contents.

Fig. 3 is a cross section through the sealing means employed in Figs. 1 and 2.

Referring more particularly to the drawings for a detailed description of the illustrated embodiment of the invention, the container is indicated generally by the reference character 10. The material thereof is preferably waterproof, particularly where the product is a liquid, but where the product is a dry solid or small articles, this refinement may be unnecessary. Practically any packaging material may be used, such as rubber, cloth, or metal foil, and various kinds of fiber, although the preferred material is paper, inasmuch as paper is at present the most practical packaging material. When paper is used, it may be waterproofed in original manufacture of the material, or it may be waterproofed by the manufacturer of the container, in the process of construction thereof.

The main body of the container illustrated in Figs. 1 and 2 is in the shape of a rectangular parallelepiped, as will be suitable for a great number of products, and will be advantageous in handling and storing because it permits economy of space. However, round, spherical or cylindrical shapes

may be more advantageous for certain products, and such shapes are accordingly within the purview of the invention. Irrespective of the shape of the body portion of the container, inasmuch as it is necessarily of flexible material, the access opening indicated at 11 may be closed to form a flat seam. It will be apparent from an inspection of Fig. 2, when the access opening is rectangular the upper portion of the container will comprise sides 12 and ends 13. Both ends 13 will be tucked in as shown at 14 in Fig. 1 and the sides 12 will be brought together with the end folds 14 therebetween to form a flat seam. Obviously if desired the ends 13 may be folded outwardly instead of inwardly, in which case the single seam will comprise only two thicknesses of container material. Thus the folding may be greatly varied, so long as the edges of the container at the access opening are brought together to line contact.

After closure of the access opening, the container is secured by stitching such as illustrated at 15. The stitching is preferably through and through, from one side of the seam to the other, although any form of stitching which will secure the edges together will be satisfactory.

The container, when packed, folded and stitched as above described will be satisfactory for some articles, of such nature that pilfering is not a serious problem as the stitching alone will present some difficulty in this respect. However, its security may be greatly improved by a further feature according to my invention.

The further securing means referred to above comprises a clamp 16 of bendable material which is folded over the seam of the container so as to cover the line of stitching 15, and preferably overlies both sides thereof. A strip of metal is preferred for this purpose, although other materials, such as a preformed clamp of celluloid may be advantageously employed for some containers and materials. When an opaque clamp is used, it is preferably provided with apertures or perforations 17 arranged in alinement with the stitching 15 so that the stitching may be inspected to make sure that it is intact, without removing the clamp 16.

A particularly advantageous method of sealing articles in the container as described above is as follows:

The product is packed in a suitable container of material most advantageous for the particular product, the end fold 13 tucked in and the sides 12 brought together after which the seam may be closed to form the line of stitching 15. The waterproofing provided is preferably fusible at a comparatively low temperature, and may be inherent in the container material, or applied before

or after the stitching. The clamp 16 is heated to a temperature above the fusing temperature of the waterproofing, and is then fitted over the seam and firmly pressed against both sides thereof. The waterproofing material will melt and flow over the stitching 15, and small quantities thereof will exude through the apertures 17. The temperatures are preferably regular so as to prevent excess flow of the waterproofing material. The clamp may be allowed to cool gradually, or may be chilled if desired. In either case the waterproofing material will solidify and form a seal over the stitching as well as the perforations 17. As a variation, the waterproofing or fusible material may be applied after the clamp, or the clamp may be unheated and the sealing means heated instead. In either case the sealing material will harden over the apertures 17 and the stitching 15, so that any tampering will result in rupture of the sealing material thus leaving conspicuous evidence of the pilfering. It should be noted that as a still further variation the clamp 16 may be omitted and the line of stitching 15 covered with the sealing material. Furthermore, the stitched container without the clamp may be heated only in the region of the stitching so as to fuse the sealing material or the waterproofing inherent in the container material, in which case tampering with the stitching will result in rupture of the hardened sealing means. Of course the clamp 16 gives the seam rigidity and prevents rupture of the sealing means by rough handling in distribution, and practically indicates that a rupture of the sealing means is due to willful tampering.

The method and means for sealing containers as described above is susceptible to a great many variations, examples of which have been set forth as it is necessary to provide broad interpretation of the language of the following claims. It is therefore to be understood that the details set forth above are in an illustrative and not in a limiting sense and that the broad idea of the invention is not limited by the details disclosed, but includes such alterations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. The method of sealing a container which consists in treating said container with moisture-proof material, drawing the edges thereof together to a line contact, stitching the opening together at the line of contact forming a projecting seam, folding a metal strip over said projecting seam and pressing it tightly against both sides thereof, providing said strip prior to folding with

a line of visual apertures, and maintaining the apertures in alinement with the stitches.

2. The method of sealing a container which consists in treating said container with moisture-proof material, drawing the edges thereof together to a line contact, stitching the edges together at the line of contact forming a projecting seam, folding a metal strip over said projecting seam and pressing it tightly against both sides thereof, providing said strip with a line of visual apertures, and heating said strip and maintaining the apertures in alinement with the stitches during the folding step.

3. The method of sealing a foldable container, which comprises subjecting the edges which form the opening to treatment of a moisture-proofing material, pressing together the edges so treated, stitching the edges together while in this position, affixing a rigid clamp, perforations in which are adjacent to the stitches so that the stitches may be visible after clamping, the clamp being affixed across the edges before the moisture-proofing substance has hardened, to form a hermetic seal.

4. A tamper-proof container comprising a receptacle of foldable material, stitching means for closing the opening thereof, and clamping means for supporting the stitching provided with perforations allowing the line of stitches to be visible after clamping.

5. In a container seal, the combination of a stitched member, an overlapping stiff clamp provided with perforations and spaced to expose and guard the stitches in their clamped position.

In testimony whereof I affix my signature.
NEAL S. OLSEN.