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2,985,353

MAILING CONTAINER

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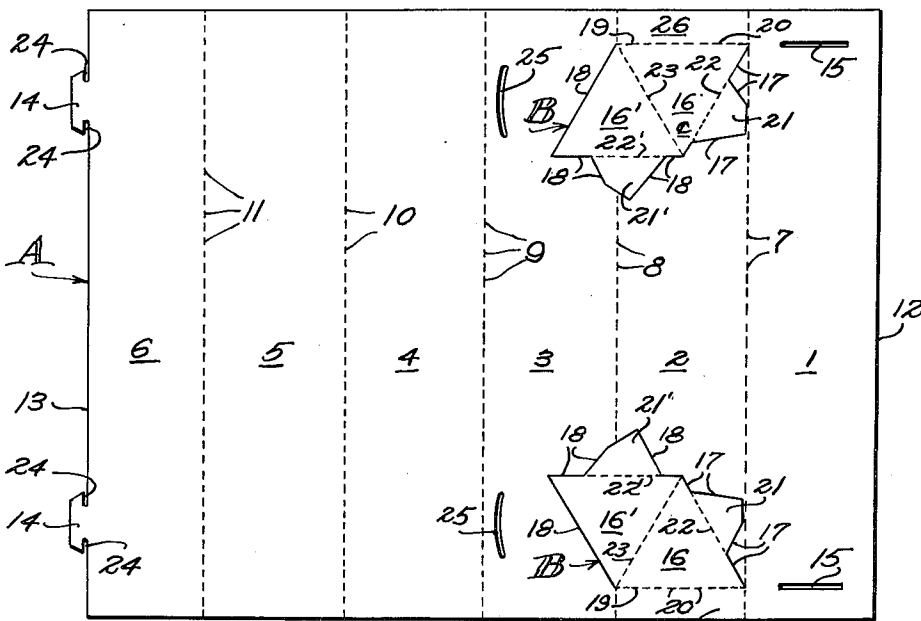


Fig. 1.

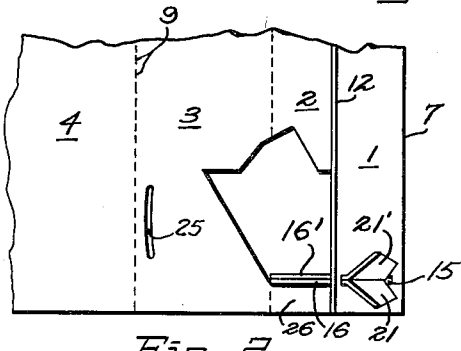


Fig. 2.

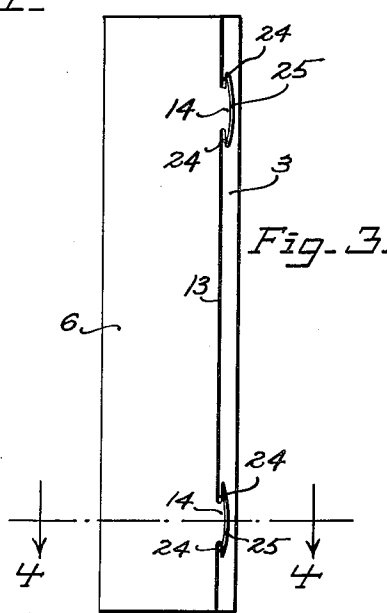


Fig. 3.

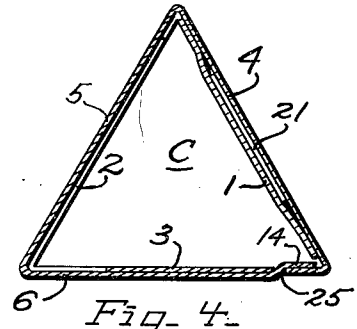


Fig. 4.

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MAILING CONTAINER

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The present invention provides an improved mailing container or mailing tube for transporting or mailing of papers of various types, such as blueprints, calendars, maps or other documents in normally flat association or in rolled tubular form, wherein the container is characterized by enhanced rigidity for increased protection of the contents of the container against damage by lateral crushing, and also which are protected by end closures for the container which are integral with the container structure.

An object of the present invention is to provide a mailing tube-like container which is formed from an integral one-piece blank which is sectionalized by suitable parallel scorings defining a plurality of fold lines enabling the container to be formed into a triangular cross-sectional shape which enhances lateral rigidity of the container, all sides of which are reinforced by a plurality of thicknesses of the blank and adjacent to both ends of the container by strengthening closures which snugly and bracingly interfit with the sides of the container and are positively interlocked therewith.

A further object of the invention is to provide an improved interlock between the outside (end) section of the container and an adjacent underlying side which prevents in a positive manner an accidental opening of the container with possible accidental release of the contents of the container.

A still further object of the invention is the provision of improved locking means for the end closure which hold such closures securely in place against accidental displacement during handling of the container.

Further objects of the invention will become apparent as the description proceeds, and the features of novelty will be defined in particularity in the appended claims.

The invention will be understood more readily by reference to the accompanying drawings, in which:

Fig. 1 is a plan view of the improved blank from which the improved tubular-like container of the present invention is made, the view indicating the sections delineated by hinge score lines extending transversely across the blank, and also indicating locking means for the first two sections and for the last end section, all of which means are in flat and unengaged position.

Fig. 2 is a fragmentary plan view of a small portion of the blank of Fig. 1, showing certain of the sections, namely, the first two folded together and secured by their locking means.

Fig. 3 is an elevational view of the completely folded tubular container, the view showing the locking means on the end section in locking position.

Fig. 4 is a transverse section through the tubular container taken on the line 4—4 of Fig. 3, looking in the direction of the arrows.

One of the improved features of the instant invention is the ease in which the documentary contents of the tubular container are positioned therein, and the ease with which such contents are released, the said contents being well protected against damage during insertion,

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removal and shipment by virtue of the great rigidity of the container against lateral and end-wise compression, as well as the ease in which the container is formed and finally released for opening.

Referring now more particularly to the drawings, and first to Fig. 1, it will be seen that there is provided a generally rectilinearly-shaped blank A, divided into approximately equal sections which are numbered consecutively 1 through 6 by parallel hinge score lines 7, 8, 9, 10 and 11 that extend transversely across the blank A.

The blank A has a lead edge 12, and a follower edge 13 and is composed of a suitable material such as a stiff cardboard, or other stiff material, which however, can be cut and scored readily. While, as pointed out above, the sections are substantially of the same size, sections 4 and 5 increase somewhat in width, corresponding to the thickness of the cardboard composing the blank to permit overlapping during folding without buckling as the tubular container is being formed. Section 6, which is the follower terminal section, may be of substantially less width because of projecting locking tabs 14 which project from the follower edge 13 of section 6.

Section 1 of the blank A is provided with slots 15 adjacent to both ends of the longitudinal dimension of the section these slots being, in practice, of equal length and parallel relative to each other. The width of these slots is determined by the thickness of the material composing the blank A and by the circumference of the tubular container to be produced therefrom.

Sections 2 and 3 of the blank have an equilateral triangle B adjacent to each end, corresponding to the said slots 15 which comprise the equilateral triangles designated at 16 and 16', with two sides 17 and 18 cut out and one side 19 remaining attached to the blank, but being defined by a hinge score line 20. A locking tab 21 projects from side 17 being attached thereto by hinge scoring 22. Also a locking tab 21' projects from side 18 and is connected to its triangle 16' by hinge score line 22'. The triangle 16' is connected to companion triangle 16 by score line 23 and as the triangle B is raised perpendicular to section 2 of the blank, the triangle 16' is folded along score line 23 until it registers with triangle 16 and the locking tabs 21 and 21' enter slots 15 of section 1 as the latter section is folded over along hinge scoring 7 during formation of the container as indicated by Fig. 2 of the drawings. The triangles 16 form end closures C for the completed tubular container which is triangular in cross section.

It has been stated that the terminal section 6 has locking tabs 14 extending from the follower edge 13. The locking tabs 14 are oppositely notched, as designated at 24. These locking tabs 14 are designed to enter and interlock with slots 25 in section 3 of the blank. The slots 25 are provided symmetrically in section 3 adjacent to the hinge scoring 9. These slots 25 are convex, compelling the locking tabs or tongues 14 to conform to the arc of slots 25 on entering the slots, after which the tabs or tongues 14 resume their normal flat surface which holds and locks them beneath the edges of the arcuate slots 25 preventing accidental disengagement of the tabs 14 from interlocking engagement with the slots 25, locking being accomplished by folding the sections in succession beginning with section 1, which brings arcuate slots (section 3) and latching tongues 14, section 6 into registry, and inserting the latching tongues 14 into the slots 25.

In operation, as has been indicated above, with the blank A lying flat on a selected flat surface and with the hinge score lines facing upwardly, the triangle members 16 are raised by folding along their base hinge scorings 20, the latching elements 21 and 21' being lifted with the triangle members 16. Section 1 is folded upwardly along hinge score line 7 until the similar and symmetrically dis-

posed slots 15 in section 1 register with the latching elements 21 and 21' and the latter are entered into the slots 15 and are secured in place by bending them over the sides of the slots (Fig. 2), thereby securing the triangles 16 and 16' in upright position to form end closures for the completed tubular container. The document or other items to be shipped in the tubular container then are laid on the open blank between the raised triangles 16 and 16', and the container is completed by rolling or folding the successive sections on one another as is indicated by Figs. 3 and 4 until the terminal section 6 overlies section 3 of the blank and the tabs 14 register with slots 25. These slots 25 in section 3 of the blank are convexly arcuate and so force the tabs 14 to conform to the arcuate contour of the slots until they are passed through the slots whereupon the inherent resiliency of the material composing the tabs causes the latter to flatten as soon as they have passed through the arcuate slots 25 to secure the terminal section 6 in position against accidental displacement. The contents of the triangular container are completely housed therein and the container is braced laterally both by the reinforcement of superposed layers of material (Fig. 4), but also by the equilateral triangular end closures 16 and 16' which close snugly the ends of the tubular housing and are held by the interlocking elements 21 and 21' and the slots 15 of section 1. The interlock between the locking tongues 14 on terminal section 6 and slots 25 on section 3, while preventing accidental displacement of the section 6 and hence preventing accidental unwrapping of the tubular container, nevertheless may be broken manually to enable unwrapping of the container and consequent access to the contents thereof.

From the foregoing description it will be seen that the present invention provides an improved rigidly reinforced container for transporting without damage to contents thereof such as documents, maps, blueprints, calendars and the like, the container being characterized by closed ends which protect the contents of the container from edgewise damage, as well as enclosing the said contents, the triangular tubular container being characterized further by rigid lateral reinforcement provided by a plurality of overlying layers of rigid material of which the tubular container is composed. As is apparent from the drawings, the container when in its open condition is substantially a flat, rectangular piece of stiff cardboard, plastic, or other suitable material, designed and die-cut in such manner as when the container is formed from the flat, one-piece blank, the blank becomes a triangular shaped container of convenience and durability. An advantage of the present invention not to be found in the conventional mailing tube is the quick easy and safe manner in which the contents become enfolded in the box-like container as it is being constructed. The removal of the contents from the improved tubular container is effected easily and quickly. The improved container eliminates the tendency toward damaging the contents common to the inserting and removing the contents from mailing tubes.

As will be seen from the drawing and understood from the foregoing description, the rectangular blank is divided into six undetached sections all of nearly identical dimensions. The first section contains the slots 15 at both ends of the longitudinal dimension, of equal length and centrally positioned between the transverse width of the section. The width of these slots 25 is determined by the thickness of the material used in the making of the container.

The second section of the blank has the two equal equilateral triangles 16 and 16' cut therefrom, the two triangles having two sides cut out and one attached. This attached side 19 runs transversely along a line parallel to the respective slots in section 1. When such triangles 16 and 16' are in a registering position, the projections 21 and 21' from the sides of the triangles facing

the slots engages them, and by oppositely pressing these projections flatly against the first section, locks the two sections together. The same procedure is effected at both ends.

After this locking is accomplished, the contents of the container are laid on the floor of the second section and the two joined sections are rolled over into the third, the third is rolled onto the fourth section, and so on until the six sections together constitute three sides of a triangular container.

Complemental male and female fastening devices provided respectively on sections 6 and 3 hold and lock the parts together in the triangular form as shown.

The triangular end closure members 16 are set in from the opposite edges of the blank a distance equal to that of the slots 15 with which each attached base 19 along score line 20 corresponds, so that when the triangular members are folded upwardly along the base fold score lines, the resulting projecting flanges 26 of the tubular container walls define protecting means for preventing impacts against the end closure members 16 which might tend to cause damage thereto and to the contents of the tubular container.

What is claimed is:

1. A mailing container formed from a blank comprising an elongate tube having interior and exterior wall portions providing at least a partial two-ply construction and adapted to be held in its tubular condition, an interior wall portion having a slot at each end thereof and extending transversely of the length of the tube, closure members at each end of the tube and of substantially the same shape and size as the tube cross-section, said members being connected along a portion of their peripheries to a wall portion of the tube and a projecting tab on each closure member disposed through one of said slots in the interior wall portion and folded down and secured between an interior wall portion and an exterior wall portion, said closure members being struck from an interior wall portion.

2. A mailing container according to claim 1 wherein each closure member is folded in double to provide a double ply, and at least the outer ply of each double ply closure member has a projecting tab.

3. A blank for forming a mailing container comprising a rectangular sheet of material having a plurality of score lines defining a plurality of panels of substantially equal width, closure forming members formed of portions of a panel defined near one side of said blank by score lines and each attached to a panel along a fold line, each closure forming member being of substantially the same size and shape, locking tabs projecting from each closure forming member, and a slot immediately adjacent the panel in which the fold line of each closure forming member is formed and in alignment therewith to accommodate the tabs on said closure forming members, there being at least three panels in addition to the panel in which the slot is disposed and the panel from which the closure forming members are formed.

4. A blank according to claim 3 wherein each closure forming member is formed of portions of two adjacent panels and has two sections of substantially the same size and shape joined along a fold line.

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