

Feb. 6, 1968

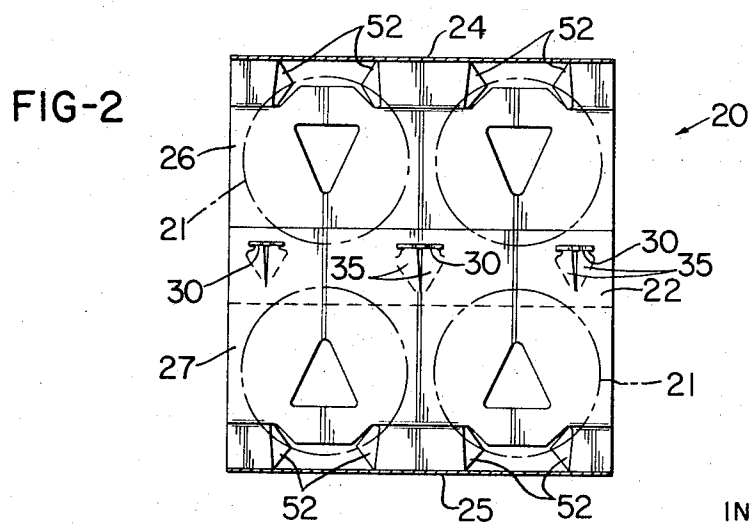
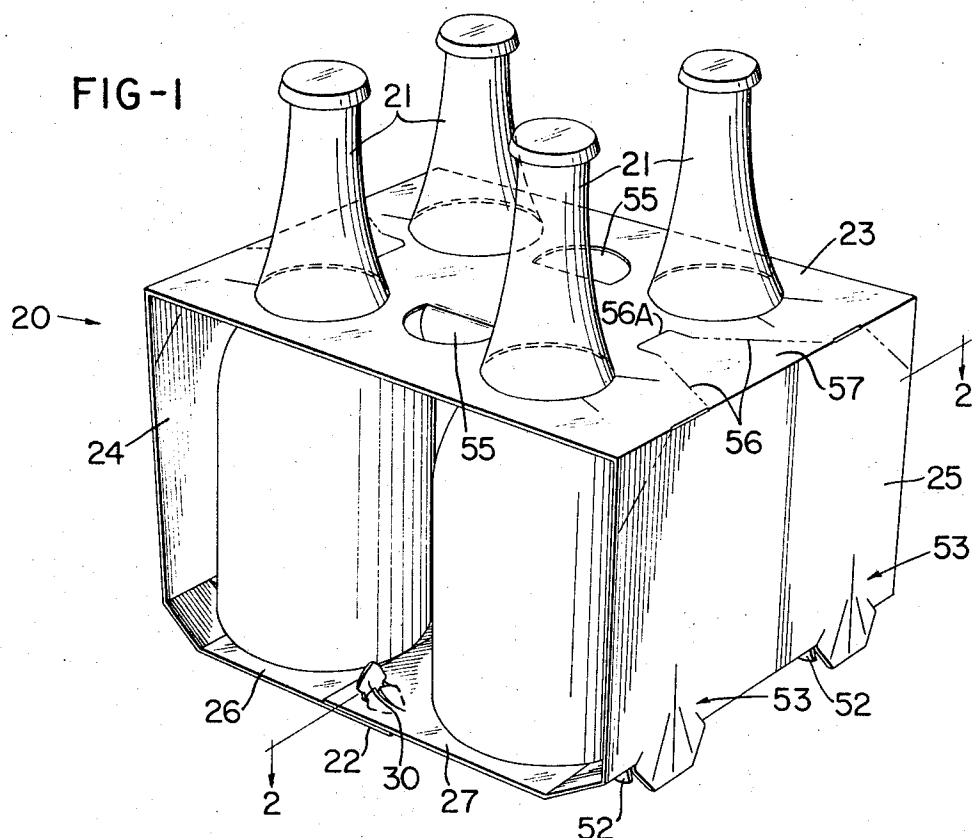
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FASTENING MEANS FOR CONTAINER MEANS AND BLANKS THEREFOR

Filed April 15, 1966

3 Sheets-Sheet 1



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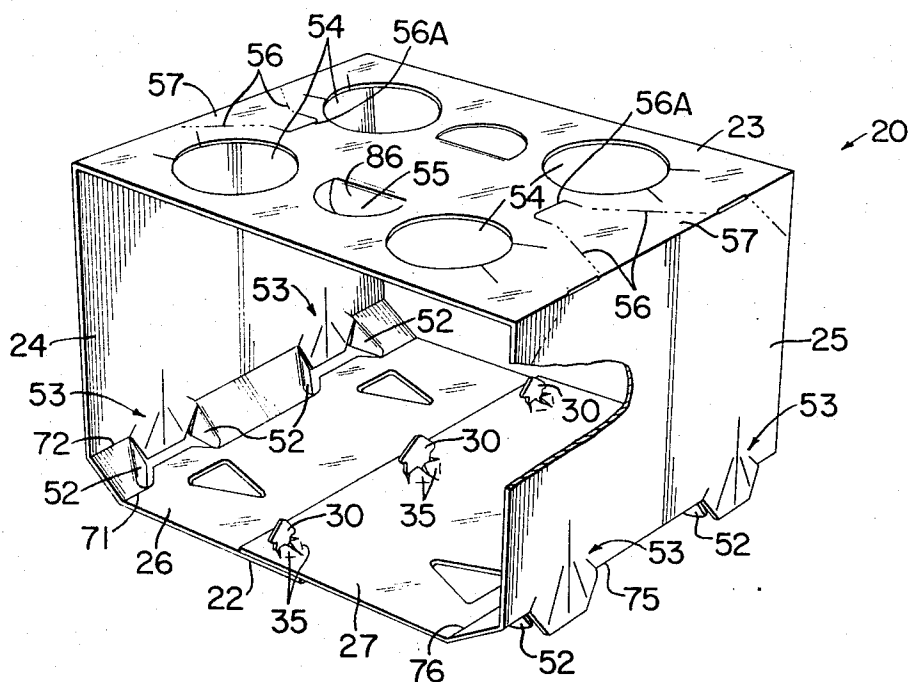
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FASTENING MEANS FOR CONTAINER MEANS AND BLANKS THEREFOR

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FIG-3



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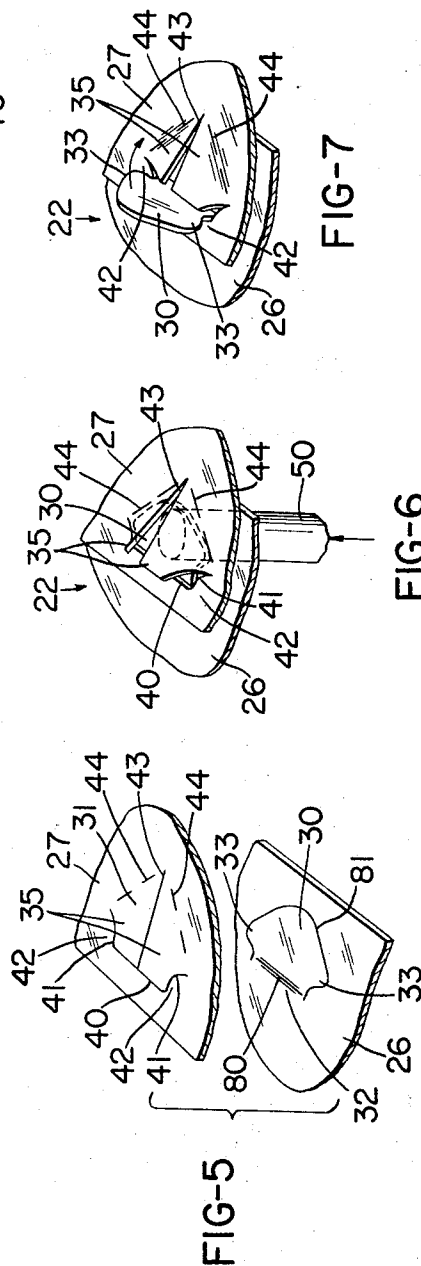
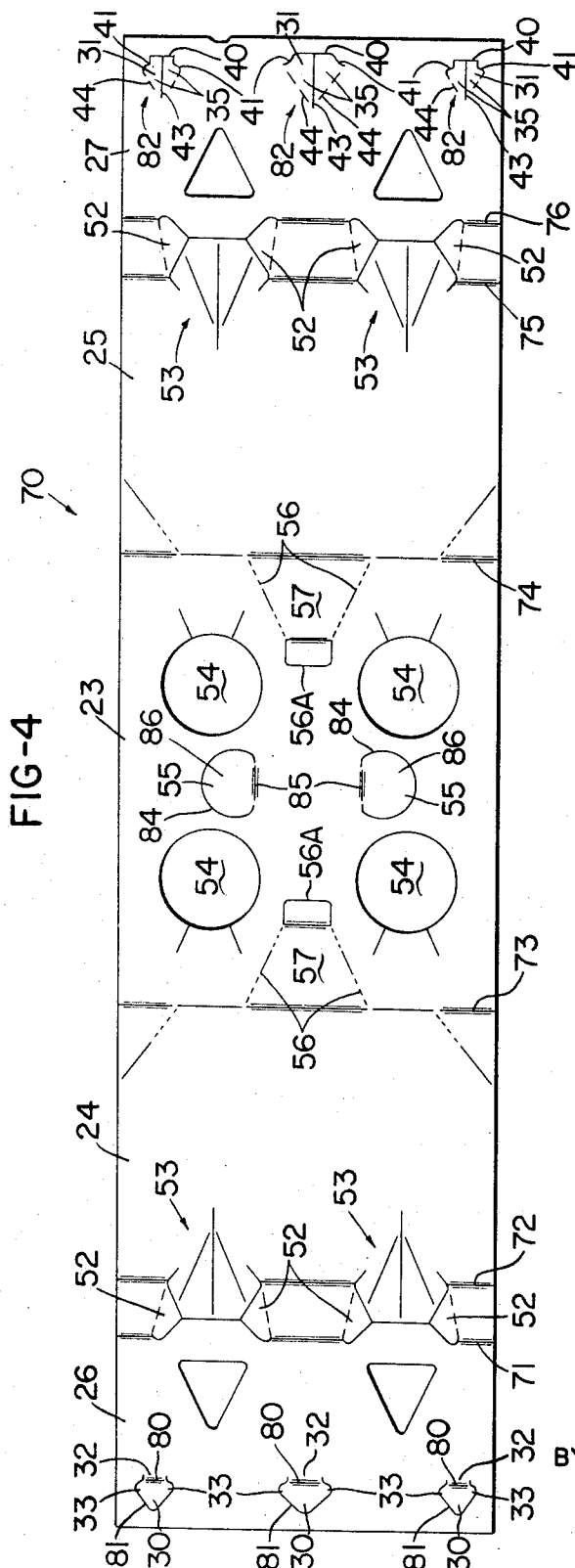
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FASTENING MEANS FOR CONTAINER MEANS AND BLANKS THEREFOR

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3 Sheets-Sheet 3



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FASTENING MEANS FOR CONTAINER MEANS AND BLANKS THEREFOR

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ABSTRACT OF THE DISCLOSURE

This disclosure relates to a container construction having overlapping walls thereof locked together by a locking tab of one wall being pushed through an opening in the other wall and being held at an angle relative thereto by retaining tab means of the other wall whereby locking ears of the locking tab prevent the walls from being pulled relative to each other, the retaining tab means comprising a pair of retaining tabs each having its hinged end angularly disposed relative to the locking tab and to the other retaining tab and engaging the locking tab at spaced apart points to assure the holding of the locking tab at an angle relative to the overlapping walls.

This invention pertains to fastening means and more particularly to improved fastening means for container means and to improved blanks for making such fastening means and container means using such fastening means or the like.

Container means such as paperboard carriers in current use for carrying beverage cans or the like employ fastening means to hold them together which have marginal strength. This marginal strength results in many carriers coming apart, thereby damaging and creating problems in handling and marketing the cans previously carried within the damaged carrier.

Accordingly, it is a feature of this invention to provide an improved fastening means for container means or the like which is of high structural strength thereby holding such container means together and precluding damage to the contents thereof.

Another feature of this invention is to provide an improved fastening means of the character mentioned which is of simple and economical construction.

Another feature of this invention is to provide an improved fastening means for container means which is easily fastened manually as well as through the use of conventional automatic fastening equipment.

Another feature of this invention is to provide improved container means having such improved fastening means which can be constructed, with only minor tooling modifications, using standard presently available machinery.

Another feature of this invention is to provide improved fastening means for fastening and holding together a carrier for beverage containers which supports the beverage containers therein against movement likely to cause damage thereto.

Another feature of this invention is to provide an improved fastening means for container means comprising fastening tab means having an arrowhead-shaped configuration arranged in one of a pair of overlapped wall means for cooperation with retaining means in another of such pair of wall means in which such retaining means is similar in general outline to the fastening tab means and the retaining means provides improved fastening strength with minimum weakening of such other wall means.

Therefore, it is an object of this invention to provide improved fastening means and container means using

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such fastening means having one or more of the novel features of this invention as set forth above or herein-after shown or described.

Another object of this invention is to provide improved blanks for making container means having such improved fastening means or the like.

Other objects, uses, and advantages of this invention are apparent from a reading of this description, which proceeds with reference to the accompanying drawings forming a part thereof and wherein:

FIGURE 1 is a perspective view illustrating an improved container means such as a bottle carrier having the improved fastening means of this invention, and showing four bottles carried within the carrier.

FIGURE 2 is a sectional view on the line 2—2 of FIGURE 1.

FIGURE 3 is a perspective view of the carrier of FIGURE 1 with the bottles previously carried therein removed and with a part thereof broken away, and particularly illustrating the fastening means for holding the carrier together, as well as means for supporting and stabilizing the bottles to be carried therewithin.

FIGURE 4 is a plan view of the blank used to make the carrier illustrated in FIGURE 3.

FIGURE 5 is a fragmentary perspective view illustrating one of the three fastening means illustrated in FIGURE 1 placed so that locking tab means and associated retaining means thereof are aligned in spaced apart relation prior to overlapping and fastening using tool means.

FIGURE 6 is a perspective view illustrating the locking tab means and retaining means of FIGURE 5 being locked together by such tool means.

FIGURE 7 is a perspective view showing the locking tab means of FIGURE 6 fastened in locking relation and with the tool means of FIGURE 6 withdrawn.

While the various features of this invention are herein-after illustrated and described as being particularly adaptable for providing fastening means for container means such as carriers for beverage containers such as beer or carbonated beverages, for example, or the like, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof to provide improved fastening means for other articles or container means as desired.

Therefore, this invention is not to be limited to only the embodiments illustrated in the drawings because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

In the exemplary embodiment of this invention illustrated in FIGURES 1—7 an improved container means 20 having the improved fastening means of this invention is illustrated, as well as the improved blank, shown in FIGURE 4, for making such container means.

As shown in FIGURE 1, the container means or bottle carrier 20 is particularly adapted in this example of the invention for carrying a plurality of four bottles each designated by the numeral 21 therewithin. Carrier 20 has open ends and a plurality of four foldable interconnected side wall means shown in this example as a bottom wall 22, a top wall 23, and a pair of side walls 24 and 25. The improved fastening means of this invention is illustrated in this example as fastening together first and second overlapping wall means designated by the numerals 26 and 27 respectively and comprising portions of bottom wall 22. The fastening means provided in the overlapping wall means or portions 26 and 27 hold carrier 20 together so as to provide improved strength therefor and preclude the possibility of such carrier pulling apart and damaging or breaking the contents thereof, such as breaking bottles 21 in this example.

Locking tab means shown as a plurality of three locking tabs is provided in wall portion 26. The locking tabs are

each designated by the numeral 30 and are arranged spaced apart from each other as illustrated more particularly in FIGURE 3 of the drawings. Each locking tab 30 has a configuration in the shape generally of an arrowhead and is easily insertable in its associated cooperating retaining means.

Retaining means illustrated as a plurality of retaining means each designated by the numeral 31 is provided in second wall means or portion 27. Each retaining means 31 has an outer configuration which is similar to its associated locking tab means as will be apparent from the drawings. The locking tabs 30 and retaining means 31 are adapted to be locked together in corresponding aligned relation.

Each of the three locking tabs in this example of the invention has been designated by the numeral 30 and similarly each of the three cooperating retaining means has been given the numeral 31. These designations have been made even though the central locking tab 30 and associated central retaining means are illustrated larger than the structures on either side thereof. It will be appreciated that locking tabs 30 may all be identical in size or of different sizes and when cooperating with associated retaining means 31 of corresponding sizes provide the improved fastening action.

Each locking tab 30 has a central base portion designated generally by the numeral 32 and projection means wider than the base portion 32 and illustrated as a pair of laterally extending projections each designated by the numeral 33. Projections 33 extend beyond opposite side edges of base portion 32. The side edges of each locking tab 30 converge beyond lateral projections 33 to define the arrowhead shape previously mentioned.

The retaining means in wall 27 comprises a plurality of cut means some of which are arranged roughly in the shape of the letter T. Each locking tab 30 is adapted to be easily inserted through such T-shaped cut means so that it extends through wall 27 generally normal thereto. Each tab 30 is then engaged by portions of associated retaining means and locked in position. It will also be appreciated that any attempt to separate end portions 26 and 27 would result in projections 33 engaging portions of wall 27 to prevent such separation. The individual cuts defining the roughly T-shaped cut means will now be described in detail.

Each retaining means 31 has an area corresponding to the area of an associated locking tab 30 and is defined by a plurality of spaced apart cut means or elongated cuts in wall portion 27 arranged to define an outer configuration approximately similar to the outer configuration of an associated locking tab 30. The cut means defining each retaining means 31 define a pair of flap means or a pair of flaps each designated by the numeral 35 which comprise such retaining means 31. The flaps 35 are hinged along side edges of their arrowhead-shaped configuration, as will be described in more detail later, and permit easy insertion of a locking tab 30 in position to fasten carrier 20 together.

The plurality of elongated cut means defining the retaining means 31 comprises an elongated base cut 40 corresponding to the width of the central base portion 32 and adjoining end cuts each designated by the numeral 41 and continuing beyond opposite ends of base cut 40. End cuts 41 correspond generally to the outline of the laterally extending projections 33 adjoining the central base 32 of locking tab 30. End cuts 41 extend in an arcuate path opening away from the retaining means 31 to thereby define a pair of arcuate retaining ledge means or arcuate retaining ledges each designated by the numeral 42. Retaining ledges 42 are provided in wall portion 27 at opposite ends of base cut 40. The ledges 42 help provide improved locking support for projections 33 once locking tab 30 and retaining means 31 are fastened together in locking relation.

The cut means defining retaining means 31 further comprises transverse cut means illustrated as a trans-

verse cut 43 engaging and extending from the mid-portion of base cut 40 and extending within the outline of the arrowhead-shaped configuration of the retaining means. Transverse cut 43 extends preferably, in this example, from the center of base cut 40 and perpendicular thereto essentially bisecting the area within the arrowhead-shaped configuration of the retaining means 31 and defines the swinging end of flaps 35.

The cut means defining retaining means 31 also comprises spaced apart slit means generally coinciding with the converging side edges of the arrowhead configuration of such retaining means. Each slit means is designated by the numeral 44 and defines hinge means or a hinge about which an associated flap 35 is slightly folded or flexed to enable insertion of an associated locking tab 30 in locking position.

As will be apparent particularly in FIGURE 6 of the drawings, each flap 35 is generally triangular in shape and is defined on one side by transverse cut 43, on another side by base cut 40 and an associated end cut 41, and is hinged about the third side defined essentially by slit means 44.

The locking tab 30 and retaining means 31 are constructed and arranged so as to provide an improved locking action to thereby prevent carrier 20 from being pulled apart and thereby possibly breaking the bottles 21 carried therewithin. Note that the roughly triangular flaps 35, each hinged about an associated hinge line defined by slit means 44 provide a relatively large area through which tab 30 can be inserted for fastening terminal ends 26 and 27 together; yet assuring a minimum of weakening is provided in wall 27 for the surface area of locking tab 30 which is employed. Further, the locking arrangement provided is such that the locking tab is more rigidly and securely fastened in position and held there and prevented from being withdrawn inadvertently or even forcefully except by using an undue amount of force not likely to be encountered in the normal useage of a carrier of this type, such as carrier 20.

Wall portions 26 and 27 defining bottom wall 22 are fastened together either manually or automatically and as illustrated in FIGURES 1 and 3 of the drawings adequate fastening is provided to hold the bottom wall 22 and hence carrier 20 together to preclude the possibility of damage to the bottles 21 carried therewithin.

The improved fastening means of this invention is readily used on container means such as carriers for beverage bottles or cans or the like which are assembled automatically and employing assembling machinery. FIGURES 5, 6, and 7 of the drawings illustrate the locking sequence for a cooperating set of the fastening means in which, in FIGURE 5, a portion of wall portion 26 is shown arranged in aligned relation beneath wall portion 27 thereby placing the locking tab 30 below the retaining means 31 and below wall portion 27.

FIGURE 6 illustrates tool or punch means such as a rod 50 which is part of machinery which, as carrier 20 moves along an assembly line, for example, with beverage bottles 21 in position and held so that wall portions 26 and 27 are held in overlapped relation, rod 50 engages and pushes locking tab 30 as partially illustrated in FIGURE 6. This pushing action forces locking tab 30 through its associated retaining means 31.

Upon withdrawing rod 50, see FIGURE 7, locking tab 30 remains in locking relation so that any attempt to pull end portions 26 and 27 apart would cause side projections 33 of tab 30 to engage wall portion 27 adjoining ledge 42 and thus hold such end portions securely together.

As rod 50 engages tab 30, it pushes such tab through retaining means 31 by forcing each triangular flap 35 to swing about its score means 44 in a gate-like manner. Tab 30 is pushed so that it lies substantially normal to the plane of wall portion 27. Simultaneously each triangular flap 35 is bent about its score means 44 so that

the base portion thereof defined by cut 40 is above the plane of end portion 27 and engages the now substantially vertically positioned tab 30. This action assures that each tab 30 does not return to the flattened condition and provides improved locking action.

The fastening means of this invention is illustrated fastening together wall means of carrier 20 containing four bottles 21. It will be appreciated that the fastening means of this invention can be used to fasten together wall means of all types of container means including carriers carrying any number of bottles, cans, or the like.

The improved container means or carrier 20 has means for holding and supporting the bottles 21 in this example against lateral movement and possible damage thereto, see FIGURE 3. Such holding means comprises cut means in the lower end portion of each wall 24 and 25 adjacent the lower end portion of each bottle 21 carried in carrier 20. Such cut means includes cut means defining a pair of flaps each designated by the numeral 52 which yield outwardly in a hinged manner upon receiving the lower end portion of a bottle 21 thereagainst and cooperating cut means indicated at 53 including a pair of elongated cuts arranged symmetrically on either side of an associated elongated vertical cut. The cut means shown at 53 enable the adjoining wall portion to yield outwardly upon receiving the rounded contour of an associated bottle thereagainst and hold such bottle snugly in position.

A plurality of holes each designated by the numeral 54 and provided in top wall 23 provide lateral support at the top of each bottle 21. Each hole 54 has a diameter corresponding to the diameter of the neck of bottles 21 at the height corresponding to the height of top wall 23 above bottom wall 22. Each bottle 21 is inserted with its neck through an associated hole as shown in FIGURE 1.

A pair of centrally located spaced apart holes each designated by the numeral 55 is also provided in top wall 23. Holes 55 enable easy insertion of ones fingers therethrough to permit easy carrying of carrier 20.

Means in top wall 23 and adjoining side walls 24 and 25 for easy opening of carrier 20 to remove bottles 21 from therewithin. Such means comprises a pair of roughly V-shaped perforation means each designated by the numeral 56 and extending through a central portion of top wall 23 adjacent each side edge thereof, along the upper side edges of an associated side wall and across the upper corners of each side wall 24 and 25. The perforation means have a U-shaped cut 56A at the base of the V and each set of perforation means 56 defines a tearout section 57 at each side of top wall 23. Each tearout section 57 is torn out by grasping the portion of wall 23 surrounded by cut 56A and pulling outwardly. This pulling action separates top wall 23 from its associated side wall along the perforations and upon lifting the remainder of top wall 23 off of the neck of bottles 21 enables such bottles to be removed unobstructed.

Carrier 20 having the improved fastening means of this invention can be formed in any suitable manner and made from any suitable foldable material. It is preferably formed from the blank 70, illustrated in FIGURE 4. Blank 70 is made of cardboard or the like having a side, such as the exposed surface thereof laminated with metallic foil, such as aluminum-containing metallic foil, or the like, suitably colored, embossed, imprinted, or remaining plain, as desired.

Blank 70 is of generally rectangular elongated outline and has a plurality of parallel score lines 71, 72, 73, 74, 75, and 76 extending thereacross in spaced apart relation. As will be apparent from FIGURES 3 and 4, blank 70 is assembled folding about score lines 71-76 to form the open ended tubular carrier 20 as illustrated in FIGURE 3.

Bottom wall 22 of carrier 20 is defined by two extension flaps 26 and 27 extending respectively beyond score lines 71 and 76 and previously referred to as portions

26 and 27 of bottom wall 22. Side wall 24 is defined by score lines 71, 72, and 73, top wall 23 is defined by score lines 73 and 74, and side wall 25 is defined by score lines 74, 75 and 76. The portion of side wall 24 extending between score lines 71 and 72 and the portion of side wall 25 extending between score lines 75 and 76 providing an angled arrangement for the associated side wall adapted for receiving the cylindrical lower end portion of bottles 21.

Three locking tabs 30 are provided in extension flap 26 in this example. Each locking tab 30 has a central base portion 32 defined generally by a score line 80 and a pair of laterally extending projection means 33 extending on either side of base portion 80 and defined by a cut 81 having the general shape of an arrowhead.

Cut means is provided in extension flap 27 corresponding in general outline to locking tab 30. The cut means comprises a plurality of generally elongated spaced apart cuts designated generally by the numeral 82. Cuts 82 define the retaining means 31 and are made in blank 70 using a tool similar to the tool used to make arrowhead-shaped cut 81.

Cut means 82 defining retaining means 31 comprise a base cut 40 corresponding generally to the dimension across the base portion 32 of locking tab 30, and a pair of end cuts 41 adjoining opposite ends of base cut 40. A transverse cut 43 is provided extending from the center of base cut 40 and perpendicular thereto bisecting the area within the general outer outline of cut means 82.

Slit means, shown at two locations 44, defines hinge means for each roughly triangular flap 35 formed by transverse cut 43 and an associated portion of base cut 40 and an adjoining end cut 41. Each triangular flap 35 is hinged about the hinge means provided by slits 44 and enables easy insertion of the locking tab 30 therethrough upon assembling carrier 20 from blank 70.

A plurality of circular openings, each designated by the numeral 54 is provided in the central portion of the blank defining top wall 23. Each opening 54 enables insertion of the neck of an associated bottle 21 therethrough upon assembling blank 70 to form carrier 20.

A pair of openings 55 is also provided in a symmetrical manner in the central portion of top wall 23. Openings 55 are defined by a pair of approximately hemispherical cuts 84 and a score line 85 associated with each cut 84 extending across the open end thereof. Each cut 84 and associated score line 85 define a flap designated by the numeral 86. Flaps 86 fold toward each other upon inserting ones fingers through the openings 55 and enable easier carrying of carrier 20.

Blank 70 also has a set of perforation means 56 therein along portions thereof associated with each side edge of top wall 23. The sets of perforations 56 define tearout portions 57 which enable the carrier 20 formed from blank 70 to be easily opened as previously described.

Terms such as "top wall," "bottom wall," "side wall," "ends," etc. have been used in this disclosure of the invention for ease of description and to define the position of various walls as illustrated in the drawings and such terms should not be considered as limiting the scope of the invention in any way.

Thus, it is seen that an improved fastening means of simple and economical construction has been provided which provides improved fastening strength over currently available fastening means and which can be made and readily assembled employing standard machinery.

Further, this invention provides improved blanks for forming container means having such improved fastening means or the like.

While the form of the invention now preferred has been disclosed as required by statute, other forms may be used, all coming within the scope of the claimed subject matter which follows.

What is claimed is:

1. A container construction having fastening means for fastening together first and second overlapping wall means of the container construction, locking tab means in said first wall means having a central base portion and projection means wider than said base portion, and retaining means in said second wall means having an outer configuration substantially identical to the outer configuration of said locking tab means and defining a like opening in said second wall means, said locking tab means and retaining means being locked together in corresponding aligned relation with said locking tab means projecting through said opening in undeformed condition and with said retaining means holding said locking tab means at an angle to said overlapping wall means.

2. A container construction as set forth in claim 1 wherein said retaining means comprises two flaps engaging said locking tab means in spaced apart relation.

3. A container construction as set forth in claim 2 wherein said two flaps are angularly disposed relative to said locking tab means and are angularly disposed relative to each other.

4. A container construction having fastening means for fastening together first and second overlapping wall means of said container construction, locking tab means in said first wall means having a central base portion and projection means wider than said base portion, and retaining means in said second wall means defining a like opening in said second wall means, said locking tab means and retaining means being locked together in corresponding aligned relation with said locking tab means projecting through said opening and with said retaining means holding said locking tab means at an angle to said overlapping wall means, said retaining means comprising two flaps engaging said locking tab means in spaced apart relation.

5. A container construction as set forth in claim 4 wherein said two flaps are angularly disposed relative to said locking tab means and are angularly disposed relative to each other.

6. A container blank being suitably cut and scored to form a container construction having a plurality of foldably interconnected side wall means, said side wall means comprising first and second wall means adapted to be overlapped when forming the resulting container construction, locking tab means in said first wall means having a central base portion and projection means wider than said base portion, and retaining means in said second wall means having an outer configuration substan-

tially identical to the outer configuration of said locking tab means and defining a like opening in said second wall means, said locking tab means and said retaining means being adapted to be locked together in corresponding aligned relation with said locking tab means projecting through said opening in undeformed condition and with said retaining means holding said locking tab means at an angle relative to said overlapping wall means.

7. A container blank as set forth in claim 6 wherein said retaining means comprises two flaps adapted to engage said locking tab means in spaced apart relation.

8. A container blank as set forth in claim 7 wherein said two flaps are adapted to be angularly disposed relative to said locking tab means and are adapted to be angularly disposed relative to each other.

9. A container blank being suitably cut and scored to form a container construction having a plurality of foldably interconnected side wall means, said side wall means comprising first and second wall means adapted to be overlapped when forming the resulting container construction, locking tab means in said first wall means having a central base portion and projection means wider than said base portion, and retaining means in said second wall means having an outer configuration defining an opening in said second wall means, said locking tab means and retaining means being adapted to be locked together in corresponding aligned relation with said locking tab means projecting through said opening and with said retaining means holding said locking tab means at an angle to said overlapping wall means, said retaining means comprising two flaps adapted to engage said locking tab means in spaced apart relation.

10. A container blank as set forth in claim 9 wherein said two flaps are adapted to be angularly disposed relative to said locking tab means and are adapted to be angularly disposed relative to each other.

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