Oct. 8, 1968 R. M. WATTS 3,404,912

SUPPORTING STRUCTURE AND BLANKS THEREFOR

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FIG-1

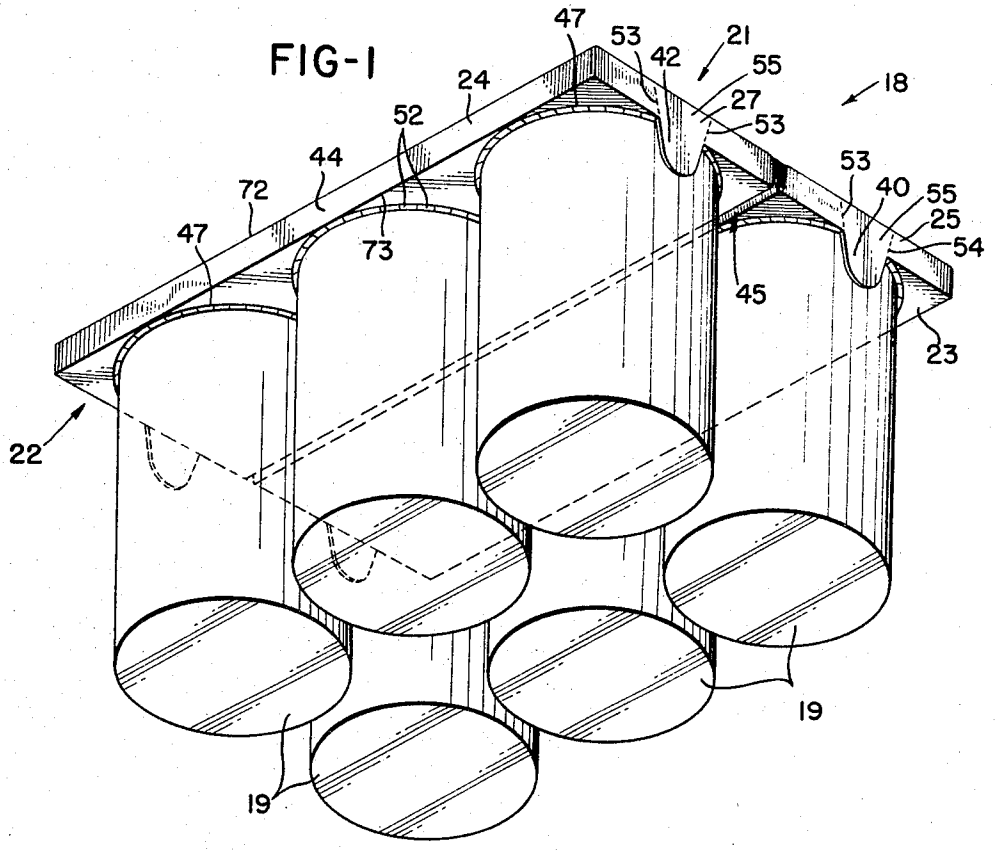
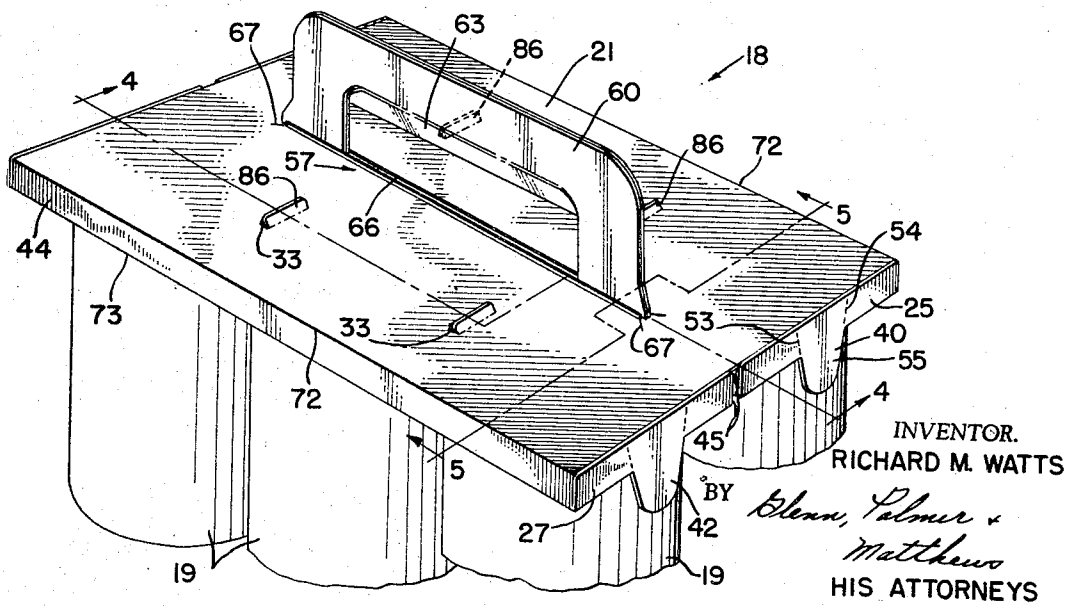


FIG-2



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Oct. 8, 1968 R. M. WATTS 3,404,912

SUPPORTING STRUCTURE AND BLANKS THEREFOR

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FIG-3

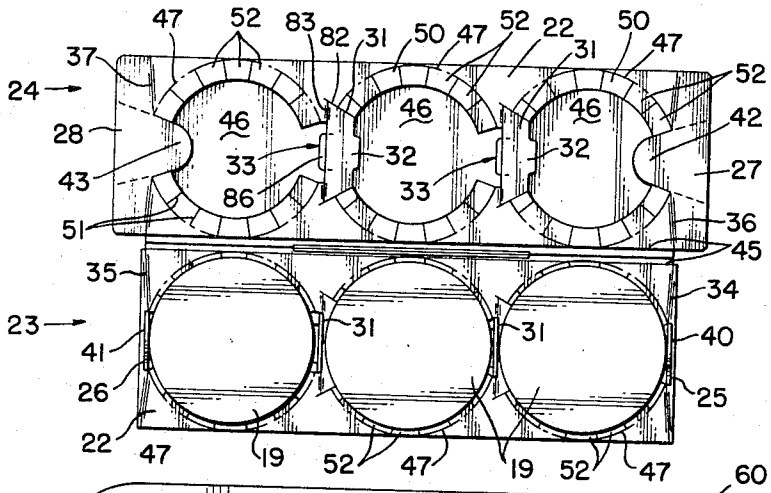


FIG-4

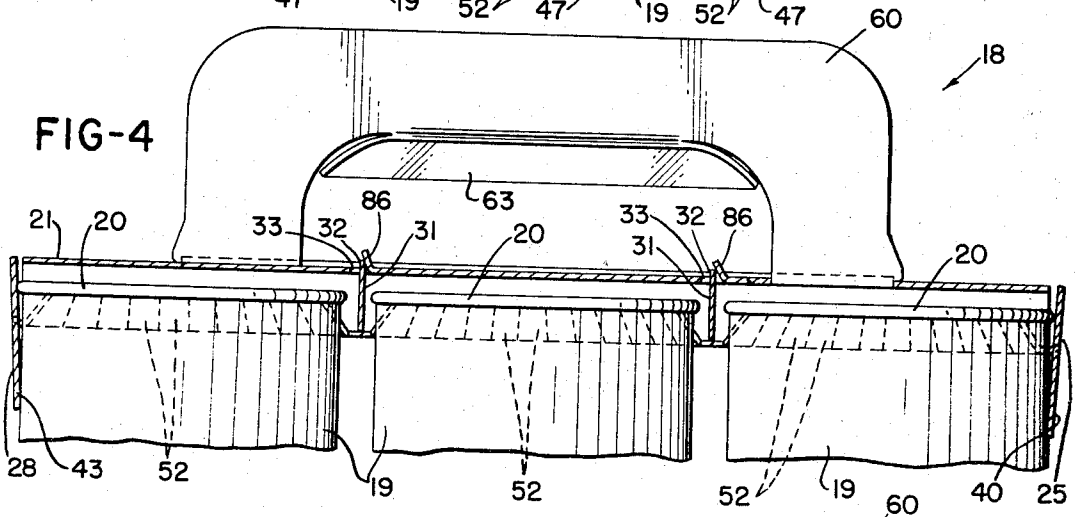


FIG-5

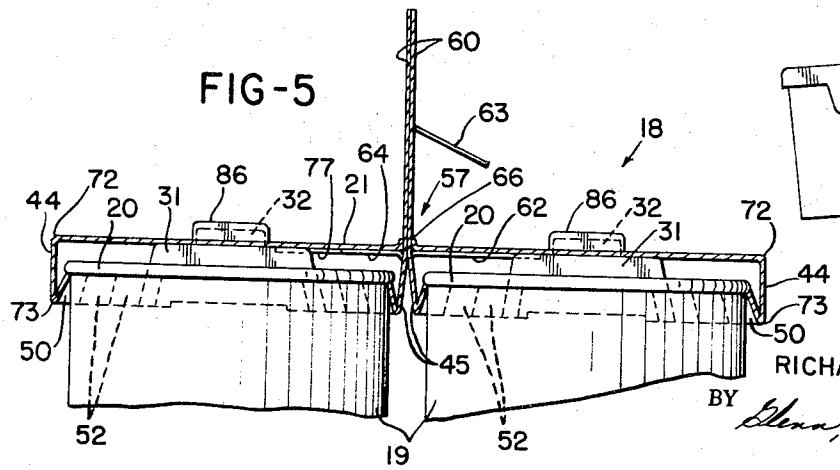
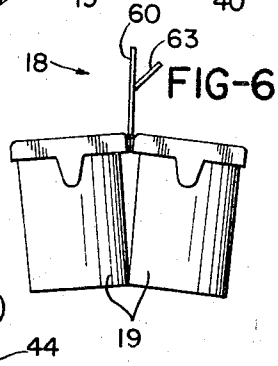


FIG-6



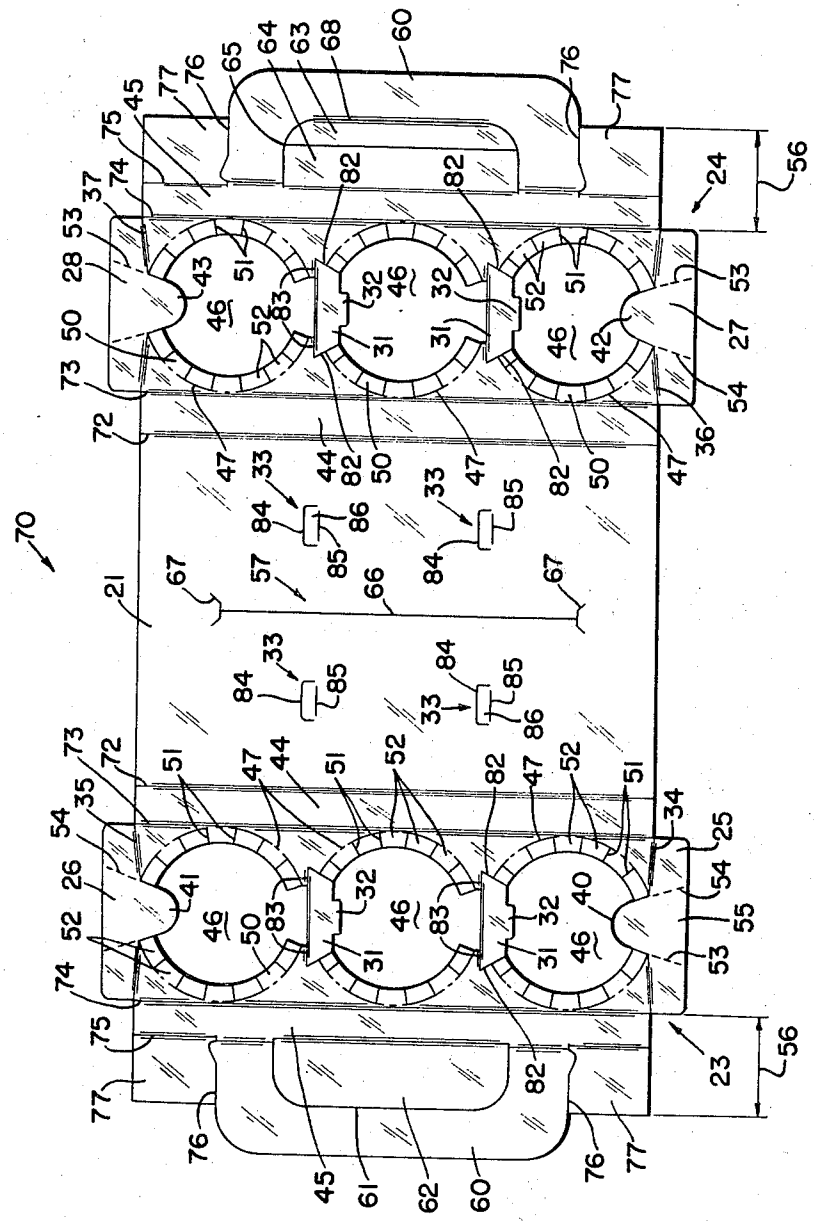
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Oct. 8, 1968 R. M. WATTS 3,404,912

SUPPORTING STRUCTURE AND BLANKS THEREFOR

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FIG-7



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SUPPORTING STRUCTURE AND BLANKS THEREFOR

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FIG-8

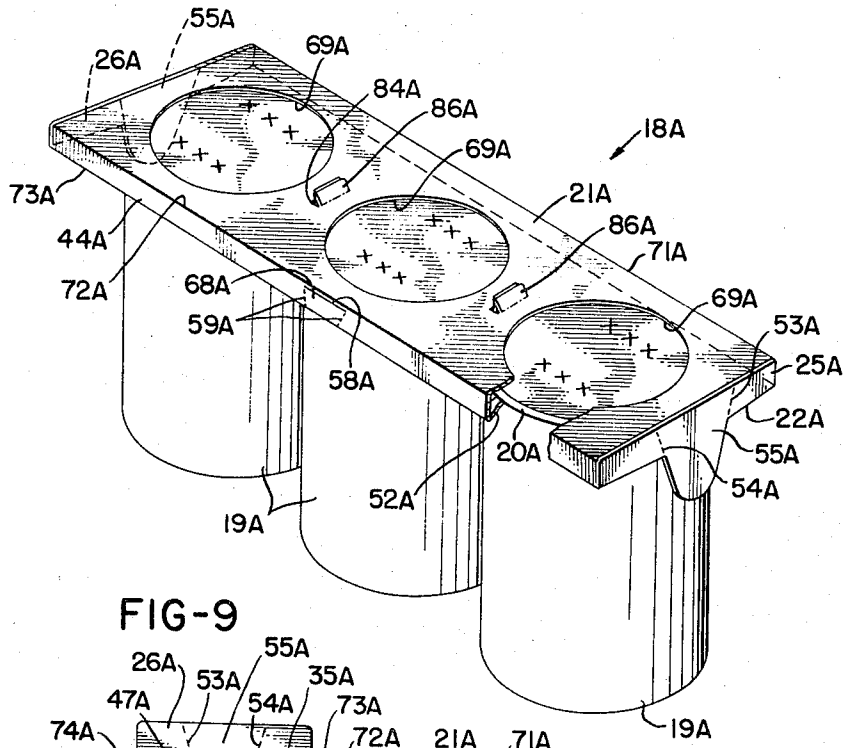
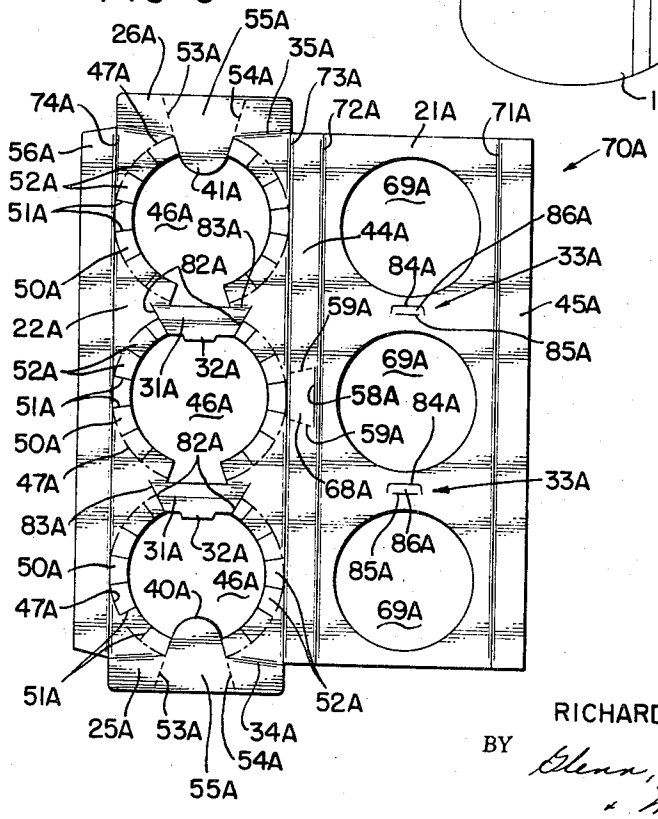


FIG-9



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United States Patent Office 3,404,912 Patented Oct. 8, 1968

3,404,912

SUPPORTING STRUCTURE AND BLANKS THEREFOR

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Filed Oct. 6, 1965, Ser. No. 493,508
21 Claims. (Cl. 294—87.2)

ABSTRACT OF THE DISCLOSURE

This disclosure relates to a supporting structure or carrier adapted to fasten to the upper end portion of containers such as cylindrical beverage cans, for example, and suspend such cans therebelow during carrying thereof. The supporting structure has features enabling easy carrying, stacking, and removal of individual cans.

This invention is related to application Ser. No. 493,407 filed Oct. 6, 1965.

This invention pertains to an improved supporting structure and more particularly to a carrier for article means and the like and to improved blanks for making such a carrier or the like.

Many products, for example foods and beverages, are contained in individual containers and quite often such containers are offered for sale in packages of two or more.

In order to provide a suitable supporting structure many current packages enclose practically the entire containers carried therein thus requiring additional package material and increasing the manufacturing costs for the added material as well as the advertising material required to identify the contents of the package. Furthermore, with this type package it is usually necessary to destroy the entire package to remove the individual containers and even if a handle is provided for carrying the package it is usually destroyed in the process of opening the package. Other current packages are expensive to produce, use an excessive amount of material, and can only be stacked one on top of the other by using separate special stacking devices.

Accordingly, it is a feature of this invention to provide an improved supporting structure of simple and economical construction, which is easily assembled, and which uses a minimum amount of structural material commensurate with the intended use for such supporting structure.

Another feature of this invention is the provision of an article carrier which fastens to the upper end portion of articles it carries enabling the articles themselves to be suspended therebelow in practically full view thereby providing their own advertising.

Another feature of this invention is the provision of a unique carrier for containers in which the entire structure thereof is fabricated merely by folding a suitably cut and scored blank and without requiring the use of glue or other separate fastening means to hold such carrier together.

Another feature of this invention is the provision of a container carrier having handle means as an integral part thereof which is not destroyed upon removal of a container from such carrier and such handle means cooperates with other similar carriers and associated containers permitting a number of carriers and associated containers to be stacked one on top of the other.

Another feature of this invention is the provision of a container carrier which encloses only the top end portion of containers carried thereby, yet providing adequate support for the containers it carries while keeping the tops of such containers enclosed for optimum cleanliness.

Another feature of this invention is the provision of a carrier having tear-out tab means adjacent containers carried by such carrier such that the containers can be individually released readily and simply without necessitating the tearing apart of the entire carrier structure.

Another feature of this invention is the provision of a container carrier having flap means adjoining each container in which said flap means prevents an associated container from tilting.

Another feature of this invention is the provision of such a carrier for cylindrical containers having cutout areas in a top wall of such carrier providing easy viewing of the top of the cylindrical containers carried thereby enabling identificaiton simply by glancing at the top of the carrier.

Therefore, it is an object of this invention to provide an improved carrier having one or more of the novel features of this invention as set forth above or hereinafter shown or described.

Another object of this invention is to provide improved supporting structure blanks for such a supporting structure or carrier 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 one exemplary embodiment of this invention in which a carrier for six beverage containers is provided.

FIGURE 2 is a partial perspective view of the carrier illustrated in FIGURE 1 looking at the top thereof.

FIGURE 3 is a view looking normal to the bottom of the carrier of FIGURE 1 showing one row with its three containers in place and the other row prior to the insertion of its three containers.

FIGURE 4 is an enlarged view on the line 4—4 of FIGURE 2 particularly showing the spacing flaps between the top and bottom carrier walls, the engagement of the fastening tabs with the peripheral bead provided on the containers, and the handle means for the carrier.

FIGURE 5 is a sectional view on the line 5—5 of FIGURE 2 showing the upward extension of side wall extension means to provide handle means and particularly showing the flap arrangement therefor.

FIGURE 6 is a slightly exaggerated perspective end view of the carrier and containers of FIGURE 1 particularly showing the inward tilting of the lower end of the containers upon lifting the carrier by its handle means.

FIGURE 7 is a plan view of the blank used for making the carrier of FIGURE 1.

FIGURE 8 is a perspective view showing another exemplary embodiment of this invention in which a carrier for three containers is provided with cut-outs in the top wall thereof to enable the tops of such containers to be readily viewed.

FIGURE 9 is a plan view of the blank used in making the carrier of FIGURE 8.

While the various features of this invention are hereinafter illustrated and described as being particularly adaptable for providing supporting structures and carriers for beverage containers such as for soft drinks or beer, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof to provide carriers for containers for food or other products 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 supporting structure

or carrier **18** is illustrated, as well as the improved blank, shown in FIGURE 7, for making such carrier.

The carrier **18** illustrated in FIGURE 1 has provision for carrying a plurality of article means shown in this example as six elongated beverage containers **19**. Containers **19** are shown as right circular cylindrical in shape and each has a periperhal projection or bead **20** (see FIGURES 4 and 5) projecting from their outer circumferential surface at one end. The unique structure of carrier **18** includes fastening means as a part thereof cooperating with the upper end portion of each container **19**, particularly engaging bead **20**, to enable such containers to be firmly fastened to carrier **18**. The containers **19** are suspended below carrier **18** during carrying thereof and the handle means at the top of each carrier enables a number of such carriers to be stacked one on top of the other with maximum stability and without requiring special stacking devices. As will be apparent from the drawings, carrier **18** is made using a minimum of structural material. The containers **19** illustrated only have a bead at one end thereof, it is obvious that standard containers with a bead at each end as well as containers having a suitable projection at any point along their length could also be carried.

Carrier **18** has first and second cooperating wall means illustrated in the drawings as walls **21** and **22**. Walls **21** and **22** are generally rectangular in shape and receive an end portion of containers **19** therebetween.

Wall **22** in this exemplary embodiment of the invention is comprised of two side by side sections shown at **23** and **24**. Section **23** has extension flaps **25** and **26** at opposite ends thereof while section **24** has extension flaps **27** and **28** at its opposite ends. In addition, each section **23** and **24** has a plurality of flaps **31** each with a projection **32** extending between cooperating walls **21** and **22**. The number of flaps **31** arranged between extension flaps **25** and **26** in section **23** and between flaps **27** and **28** in section **24** and the spacing therebetween is determined by the size and number of containers in each section. Flaps **25**, **26**, **27**, **28** and **31** help space cooperating walls **21** and **22** apart and hold them apart in parallel relation.

Spacing flaps **31** with their extensions **32** associate with a plurality of cut means **33** in cooperating wall **21**. Each spacing flap **31** has a corresponding cut means **33** arranged opposite thereto in wall **21** assuring that walls **21** and **22** are spaced properly.

Extension flaps **25**, **26**, **27** and **28** are each respectively defined by score lines **34**, **35**, **36** and **37** and generally U-shaped cuts **40**, **41**, **42** and **43** respectively in wall **22**. Each flap **25**, **26**, **27** and **28** in this exemplary embodiment of the invention has a portion which extends between walls **21** and **22** upon being folded about its respective score line and a portion which extends away from both walls **21** and **22** and along an associated container. The portion of each flap which extends along a container **19** associated therewith provides added support and stability for such container and also prevents the lower end of the container from tilting outwardly away from carrier **18**.

Each section **23** and **24** of cooperating wall **22** has a pair of side wall means shown as a first **44** and second **45** side wall means which are generally parallel to each other and arranged normal to first cooperating wall **21**. Side wall means **44** and **45** also provide spacing means along with flaps **25**, **26**, **27**, **28** and **31** for spacing walls **21** and **22** apart and holding such walls apart in parallel relation. Side wall means **44** and **45** also provide a structural tie between the cooperating walls **21** and **22**.

Cut-out means comprising, in this example, a plurality of generally circular cut-outs **46** are provided in wall **22**—see FIGURE 7 of the blank used to form carrier **18** for a detailed illustration of such cut-outs. Each cut-out **46** receives therethrough and supports an associated cylindrical container **19**. While container **19** in this example is right circular cylindrical in shape it will be appreciated that it and its associated cut-out could have other shapes. The circular outline of that portion of each cylindrical container **19** which associates with an associated cut-out **46** is larger than the circular outline of cut-out **46**.

Score means shown as a plurality of circular score lines **47** are provided in wall **22** each concentrically surrounding its associated circular cut-out **46** and each having a circular outline or circumference larger than the circumference of its associated container **19**. Score lines **47** define a plurality of annular tab strips **50** of wall material each between its score line **47** and associated cutout **46**.

Each annular strip **50** has a plurality of slits **51** therein commencing at its respective cut-out **46** and extending along radial lines thereacross and into contact with score line **47** to define a plurality of tabs **52**. The tabs **52** associated with each annular strip **50** are forced toward wall **21** by an associated cylindrical container **19** and its peripheral bead **20** extending through second wall **22**. Tabs **52** yieldingly engage bead **20** of such container and fasten it in position for support during carrying and stacking carrier **18**.

FIGURE 3 illustrates a carrier for six containers in which the tabs **52** for three containers are shown in their positions prior to engagement by their associated containers and the remaining tabs are shown engaging the peripheral bead of their associated containers.

It will be seen that with the containers thus fastened in carrier **18**, the outer vertical surfaces of flaps **25**, **26**, **27** and **28** provide a surface at opposite ends of each carrier enabling it to be stacked adjoining other carriers with a minimum of wasted space. While the inner surface of each flap engages an adjoining container and keeps it vertically aligned.

Cut means shown as a pair of perforated lines **53** and **54** is provided in each flap **25**, **26**, **27** and **28**. Each pair of perforated lines **53** and **54** defines a tear out portion **55** which is used to unfasten an individual container **19** adjacent thereto for easy removal without disturbing the carrier **18** and its remaining containers **19** (see FIGS 5 and 7).

Each section **23** and **24** of cooperating wall **22** has extension means **56** beyond each side wall **45** thereof. A portion of each extension means or extension **56** is suitably cut and extends through slot means shown at **57** in wall **21** to provide handle means shown as a pair of handles **60** for carrier **18**. The remaining portion of each extension means **56** folds below wall **21** and parallel thereto to define the height of each side wall **45** as well as provide a bearing surface for each handle **60**.

In this example, the extension flap portion forming handle **60** which is associated with section **23** has a generally U-shaped cut line **61** therein defining a flap **62** which folds about a fold line **75** forming the upper edge of side wall **45**, see FIGURES 4, 5, and 7. Upon folding flap **62** about fold line **75** an opening is provided for carrying carrier **18**.

While handle **60** associated with section **24** could be identical to the handle previously described, in this example the handle **60** associated with section **24** has a pair of flaps **63** and **64** therein defined by a roughly H-shaped cut **65** therein. Flap **65** is foldable about its associated fold line **75** as previously described in connection with similar flap **62**, while flap **63** is foldable about a score line **68**. It will be seen that with handles **60** extending upwardly through slot means **57** while adjoining each other, flap **63** holds the handles together and provides a wider surface for supporting the weight of the carrier **18** and its containers **19**. When carrier **18** is lifted by inserting one's fingers through the opening provided by properly folding flaps **62** and **63**, flap **63** eliminates any sharp edges and assures maximum comfort.

It should be noted from the drawings that with handles **60** closely held together and with the flat horizontal surface provided by the top of wall **21** a number of carriers may be easily stacked one on top of the other with the handle means inserted between the rows of containers

stacked above a given carrier. The handle means thus provides means for locking together a number of stacked carriers without requiring separate special devices to achieve this locking effect. It should be noted also that with the structure provided, upon lifting carrier **18** by handle means **60** the lower ends of containers **19** tend to be tilted toward each other into a compact arrangement as shown in FIG. 6.

Slot means **57** in wall **21** is defined by a generally centrally located elongated slit **66** extending parallel to side wall means **44** and **45**. Slit **66** extends between a pair of roughly U-shaped cuts **67** at its opposite ends. The open end of each U-shaped cut **67** is oriented away from the slit **66**. It will be seen that with this arrangement it is possible to define a slot of relatively wide transverse dimension merely by cutting simple slits to thus permit easier insertion of the handles **60** through slot means **57** upon forming carrier **18**.

The carrier **18** is preferably made from a single sheet of foldable material and is made without requiring any external fastening means. It is constructed by simple folding to provide a rugged carrier for cans, jars, bottles, and other containers which have peripheral projection means along a portion thereof.

The manner of folding employed to provide a carrier with the unique structural integrity provided by carrier **18** will be apparent from the description of the blank used to make such carrier **18**.

Carrier **18** can be made in any suitable manner and made from any suitable foldable material. It is preferably formed from the blank **70**, illustrated in FIGURE 7. 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 suitably cut and scored to define a first **21** and second **22** cooperating wall means and means spacing and holding such cooperating wall means apart and in parallel relation upon assembling structure **18** from blank **70**. Cooperating wall **22** has two side by side sections **23** and **24** as previously mentioned.

A first pair of spaced apart parallel score lines each designated by the numeral **72** are provided in cooperating wall **21** defining a pair of extension flaps to either side of each respective score line coextensive in width with wall **21** and extending therebeyond. A series of parallel spaced apart score or fold line means shown as fold lines **73**, **74** and **75** provided in each extension flap define in sequence (in the assembled carrier **18**) first side wall means **44** generally normal to the first cooperating wall **21**, second cooperating wall means **22** parallel to wall **21**, and second side wall means **45** generally parallel to side wall means **44** and normal to cooperating wall means **21**.

The free terminal end of each extension flap extending beyond second side wall **45** and defined in each instance by fold line **75** defines extension means **56**. Each extension means **56** is suitably cut and scored to define handle **60** associated with each section **23** and **24** and flap means folding under wall **21**.

Flap portion **56** associated with section **23** has a generally U-shaped cut **61** therein defining a flap **62** which folds about fold line **75** to provide an opening for its handle **60**. The length of handle **60** is defined by a pair of slits **76** in blank **70** on either side of handle **60**. Slits **76** extend from the terminal end of extension means **56** normal to fold line **75** and define a pair of flaps **77** which upon forming carrier **18** fold under wall **21** with flap **62**.

The flap portion **56** associated with section **24** has a roughly H-shaped cut **65** therein defining a pair of foldable flaps **63** and **64**. Flap **63** is foldable about its associated fold line **75** to define an opening for its handle **60**. Similarly, as previously described for section **23**, slits **76** define a pair of flaps **77** for section **24** and serving the same function as described before. Flap **63** is foldable about a fold line **68** and upon assembling carrier **18** from blank **70** holds handles **60** together and provides a better surface for supporting carrier **18**.

Slot means **57** is provided in cooperating wall **21** and includes an elongated slit **66** centrally located in wall **21** with a pair of generally U-shaped slits **67** symmetrically arranged at each end thereof with the open end of such slits facing away from slit **66**. It will be seen upon forming a carrier **18** from blank **70** that each handle **60** is inserted through the slot means provided by slits **66** and **67** to provide a handle for such carrier and that flaps **62**, **64**, and **77** fold below wall **21**. This unique structure makes it possible to form carrier **18** from a single sheet of foldable material without requiring separate external fastening means.

Blank **70** has a number of extension flaps **25**, **26**, **27**, and **28** defined respectively by a series of fold line means **34**, **35**, **36**, and **37** and by generally U-shaped cut lines in blank **70** at **40**, **41**, **42**, and **43** in association with the respective fold lines. Each of such U-shaped cut lines is oriented with its open end adjoining its respective fold line. Each flap **25**, **26**, **27**, and **28** has a portion which folds away from wall **21** and toward wall **22** providing spacing means therebetween in the assembled carrier and another portion which folds away from both of such walls for association with a container adjacent thereto.

Cut means shown as a pair of perforated lines **53** and **54** is provided in each flap **25**, **26**, **27** and **28**. As previously mentioned each set of perforated lines **53** and **54** defines a tear-out portion **55** which is used to unfasten an individual container **19** adjacent thereto for easy removal of such container without disturbing the remainder of the carrier and its containers.

Cut-out means comprising, in this example, a plurality of generally circular cut-outs **46** are provided in wall **22**. Each cut-out **46** receives therethrough and supports an associated cylindrical container **19** upon assembling blank **70** to form carrier **18**.

Score means shown as a plurality of circular score lines **47** are provided in wall **22** each concentrically surrounding its associated circular cut-out **46** and each having a circular outline or circumference larger than the circumference of its associated container **19**. Score lines **47** define a plurality of annular tab strips **50** between each associated cut-out **46** and score line **47**.

Each strip **50** has a plurality of slits **51** therein commencing at its respective cut-out **46** and extending along radial lines thereacross and into contact with its associated score line **47** to define a plurality of tabs **52**. The tabs **52** associated with each annular strip **50** are forced toward wall **21** by an associated cylindrical container **19** and its peripheral bead **20** as such container extends through wall **22** and the tabs yieldably engage bead **20** and fasten the container to carrier **18** for support during storage and carrying.

Portions **23** and **24** of cooperating wall **22** each has a pair of centrally located spacing flaps **31** extending therebetween for spacing the cooperating walls **21** and **22** apart from each other in the assembled carrier **18**. The number of flaps **31** required and the arrangement thereof for a given carrier **18** or for a section of such carrier is determined in each instance by the number of containers and their size. Each flap **31** is defined by a pair of slits **82** in blank **70**. Slits **82** diverge from spaced apart points on annular strip **50** and engage a fold line **83** about which they are folded to define each spacing flap **31**. The forward end of each slit **82** has a right angle contour therein defining an extension or projection **32** in each spacing flap **31**.

Each flap **31** and its associated projection **32** cooperates with a corresponding oppositely arranged slit or cut means **33** in wall **21** of the assembled carrier **18**. Each cut means **33** includes a generally U-shaped cut **84** in wall **21** and a slit **85** therein extending partially across the open end of cut **84** thereby weakening the material in that area

and permitting the flap portion of material **86** between slits **84** and **85** to be folded about a line coextensive with slit **85** and away from cooperating wall **21**. Thus it will be seen that upon insertion of spacing flap **31** with its projection **32** into cut means **33**, means is provided for spacing and holding cooperating walls **21** and **22** apart in parallel relation.

In the exemplary embodiment of this invention illustrated in FIGURES 8 and 9, a carrier **18A** and its associated blank (FIGURE 9) is shown having features which are basically similar to the carrier of FIGURES 1–7. Similar parts in both embodiments will be designated by the same numeral followed in this latter embodiment by the reference letter A.

The carrier **18A** in this exemplary embodiment has provisions for carrying three cylindrical containers **19A** each having a peripheral bead **20A** at one end thereof and fastening means for fastening such container **19A** to carrier **18A** for suspension therebelow as previously described in connection with the previous embodiment. Carrier **18A** has cut-out means in its upper wall for viewing the upper end portion of containers **19A** as well as tear-out means for easy unfastening of all containers including the center container from carrier **18A**. It will be appreciated that carrier **18A** may have provisions for any number of in-line containers and that additional tear-out means may be provided for each container carried along the center portion of such carrier.

Carrier **18A** has first and second cooperating wall means illustrated in the drawings as walls **21A** and **22A**. Walls **21A** and **22A** are held apart in spaced relation parallel to each other by extension flaps **25A** and **26A** at each end thereof, side wall means **44A** and **45A** at the sides, and a plurality of spacing flaps **31A** arranged between the end flaps **25A** and **26A**.

Wall **22A** has a score line **74A** therein defining a flap **56A** extending therebeyond. Flap **56A** is fastened by any suitable means such as by glue, for example, to wall **45A** to thereby space and provide structural support for walls **21A** and **22A**.

Each spacing flap **31A** has an extension or projection **32A** and such spacing flaps and projections cooperate with a plurality of cut means **33A** in cooperating wall **21A**. Each spacing flap **31A** and projection **32A** has a corresponding cut means **33A** arranged opposite thereto in wall **21A**.

Extension flaps **25A** and **26A** are each respectively defined by score lines **34A** and **35A** and generally U-shaped cut means **40A** and **41A** in wall **22A**. Each flap **25A** and **26A** is foldable about its score line and has a portion which extends between walls **21A** and **22A** to hold such walls apart at their ends and a portion which extends away from both walls **21A** and **22A**. The portion of each flap **25A** and **26A** extending away from both such walls supports the container **19A** coming into contact therewith preventing it from tilting away from the carrier **18A**.

Cut-out means shown as a plurality of generally circular cut-outs **46A** are provided in wall **22A**. FIGURE 9 of the blank used to form carrier **18A** shows each of such cut-outs in detail. Each cut-out **46A** has an outline smaller than the outline of that portion of a container **19A** associating therewith.

Score means shown as a plurality of circular score lines **47A** are provided in wall **22A** each concentrically surrounding an associated cut-out **46A** and each having a circumference larger than the circumference of its associated container **19A**. Score lines **47A** define a plurality of annular tab strips **50A** in wall **22A** each concentrically surrounding an associated cut-out **46A**.

Each tab strip **50A** has a plurality of slits **51A** therein commencing at its respective cut-out **46A** and extending along radial lines thereacross and into contact with its score line **47A** to define a plurality of tabs **52A**. Tabs **52A** associated with a given cut-out **46A** are engaged by an associated container **19A** and its bead or flange **20A** extending through wall **22A** and forced toward wall **21A**. Tabs **52A** yieldingly engage bead **20A** and fasten the corresponding container **19A** to carrier **18A**.

Carrier **18A** has cut means shown as a pair of perforated lines **53A** and **54A** in each flap **25A** and **26A**. Each pair of perforated lines defines a tear-out portion **55A** which is used to unfasten the individual end container **19A** adjacent thereto.

Cut means is also provided in wall **44A** to permit the center container **19A** to be easily removed and includes an elongated slit **58A** in side wall **44A** lying parallel to and immediately adjacent top wall **21A**. Slit **58A** has a pair of perforated lines **59A** extending therefrom and transverse thereto across wall **44A**. Slit **58A** and perforated lines **59A** define a tear-out strip **68A** which permits the center container in this exemplary embodiment to be simply removed. While tear-out strip **68A** is only shown in wall **44A** it will be apparent that a similar strip could also be provided in wall **45A** and in the event of a carrier **18A** for a larger number of in-line containers a tear-out strip **68A** could be provided for each intermediate container.

Carrier **18A** includes a plurality of preferably circular cut-outs **69A** in the top wall **21A** thereof. Cut-outs **69A** are provided immediately above one or more of the containers **19A** carried by carrier **18A**. In this example a cut-out **69A** is provided in wall **21A** directly above all three containers **19A**. Each cut-out **69A** permits easy viewing of the top of the cylindrical containers **19A** simply by glancing at the top of the carrier.

As will be apparent from viewing FIGURE 8 of the drawings, the handle means for carrier **18A**, especially when carrying such carriers by hand, comprises simply grasping it transverse its elongated dimension. Obviously it could be possible to provide other handle means if desired.

Carrier **18A** can be made in any suitable manner and using any suitable foldable material. It is preferably formed from the blank **70A** illustrated in FIGURE 9. Blank **70A** is made of cardboard or the like having a side thereof preferably laminated with metallic foil.

Blank **70A** is suitably cut and scored and includes a series of parallel score of fold lines **71A**, **72A**, **73A**, and **74A** to define cooperating walls **21A** and **22A** and side walls **44A** and **45A**.

Fold line **74A** in cooperating wall **22A** defines extension flap **56A** which is coextensive in width with wall **22A** and extends beyond such wall. Upon folding blank **74A** about fold lines **71A–74A** and suitably fastening flap **56A** to wall **45A** an open ended tubular structure is thereby formed.

Wall **22A** has a pair of extension flaps **25A** and **26A** at each end thereof respectively defined by score lines **34A** and **35A** and generally U-shaped cut lines **40A** and **41A** in wall **22A**. Flaps **25A** and **26A** are folded about their respective fold lines **34A** and **35A**.

Cut-out means shown as a plurality of generally circular cut-outs **46A** are provided in wall **22A** and a circular score line **47A** is arranged about each cut-out **46A**. Each cylindrical container **19A** has a circumference larger than an associated cut-out **46A** and smaller than a corresponding associated score line **47A**. The area between each cut-out **46A** and score line **47A** defines a tab strip **50A** of wall material therebetween.

A plurality of slits **51A** are provided in each tab strip **50A**. Slits **51A** extend along radial lines thereacross and define tabs **52A** for each strip **50A** which, upon assembling carrier **18A** from blank **70A**, engage bead **20A** of an associated container **19A** to fasten it to carrier **18A**.

Blank **70A** has a pair of perforated lines **53A** and **54A** in each flap **25A** and **26A** defining a tear-out strip **55A** for easy removal of the adjacent containers in the assembled blank. Similarly a slit **58A** and a pair of perforated lines **59A**, defining a tear-out strip **68A**, are provided for easy removal of the middle container.

Cooperating wall 22A has a pair of centrally located spacing flaps 31A which extend between walls 21A and 22A in the assembled carrier 18A. Each flap 31A is defined by a pair of spaced apart slits 82A in wall 22A. Each slit 82A has a right angle contour at the front end portion thereof defining projection 32A and each slit 82A terminates in a fold line 83A about which each flap 31A is folded. The spacing flaps 31A provide intermediate means for spacing and holding apart walls 21A and 22A.

Wall 21A includes cut means 33A, as previously mentioned, for association with a corresponding associated spacing flap 31A and its projection 32A in the assembled carrier 18A. Cut means 33A includes a generally U-shaped cut 84A in wall 21A and slit 85A extending partially across the open end of cut 84A to thus define a flap 86A foldable about a line coextensive with slit 85A. Upon assembling carrier 18A it will be apparent that flap 31A and its projection 32A cooperate with an associated cut means 33A to keep walls 21A and 22A spaced apart in parallel relation.

A plurality of circular cut-outs 69A are provided in top wall 21A. Cut-outs 69A are arranged immediately above generally circular cut-outs 46A of wall 22A and enable the top of container 19A associated with a given cutout 46A to be easily viewed from the top of the assembled carrier 18A.

The carrier of this invention associates only with the top portion of the containers it carries as previously explained, this makes such carrier extremely versatile. For example, many beverage containers whether holding 12 or 16 fluid ounces are of the same diameter. Obviously the height for each capacity is different. Nevertheless, the carrier of this invention is equally versatile in carrying both sizes.

Thus it is seen that a carrier of simple and economical construction is provided which uniquely fastens and suspends containers therefrom during carrying. Such carrier has novel means for keeping its containers properly aligned during carrying, means for stacking one carrier on top of the other, and means releasing each container individually if desired without tearing apart the entire carrier.

Further, this invention provides improved blanks for forming such carriers or the like.

While the form of the invention now preferred has been disclosed as required by the statutes, other forms may be used, all coming within the scope of the claims which follow.

What is claimed is:

1. An article supporting structure comprising, first and second cooperating wall means, spacing means spacing and holding said cooperating wall means apart, cut-out means in said second cooperating wall means for receiving therethrough article means to be supported by said supporting structure, fastening means in said second wall means for fastening in position and providing the sole support for article means received through said cut-out means, and handle means extending transverse to and above the plane of said first wall means and providing the sole means for holding said supporting structure together, said handle means enabling said article means to be suspended beneath said second wall means when said structure is carried by said handle means.

2. An article supporting structure as set forth in claim 1 further comprising cut means in said spacing means defining tear-out means which unfasten said article means upon tearing thereof.

3. An article supporting structure as set forth in claim 1 in which said spacing means comprises side wall means and flap means spacing said cooperating walls apart in parallel relation, said flap means being foldably connected to said second wall means and extending toward said first wall means while being arranged generally transverse to said side wall means.

4. An article supporting structure as set forth in claim 3 further comprising projection means defining terminal end means of said flap means and cooperating cut means in said first wall means adapted to receive said projection means therethrough and assure said first and second cooperating wall means are held in parallel spaced apart relation.

5. An article carrier comprising, first and second cooperating wall means, spacing means spacing and holding said cooperating wall means apart in parallel relation, cut-out means in said second wall means for receiving therethrough one end portion of elongated article means having peripheral projection means in said end portion, said cut-out means having a geometric outline generally corresponding to and smaller than the geometric outline of said end portion, score means in said second wall means having a geometric outline generally corresponding to and larger than the outline of said end portion of said article means and symmetrically arranged about said cut-out means to define a tab strip, slit means extending transverse to and across said tab strip defining tab means, said tab means being forced toward said first wall means by said larger outline article means extending through said second wall means while yieldingly engaging said peripheral projection means to thereby fasten said article means to said carrier, said tab means providing the sole support for article means, extending transverse to and above the plane of said first wall means and providing the sole means for holding said carrier together.

6. An article carrier as set forth in claim 5 in which said spacing means comprises side wall means and flap means spacing said cooperating wall means apart in parallel relation, said flap means being arranged generally transverse to said side wall means and being foldably connected to said second wall means, and said tab means having a length which is smaller than the spacing between said cooperating parallel wall means.

7. An article carrier made from a single piece blank suitably cut and scored and being structurally held together merely by assembling said blank comprising, first cooperating wall means, a first pair of spaced apart parallel score lines in said first cooperating wall means defining a pair of extension flaps therebeyond coextensive with said first cooperating wall means, elongated slot means in said first cooperating wall means arranged generally along the middle portion thereof and parallel to said score lines, said slot means having a length smaller than the length of said first cooperating wall means, a series of parallel spaced apart fold line means in each of said extension flaps defining in sequence first side wall means generally normal to said first cooperating wall means, second cooperating wall means parallel to said first cooperating wall means, and second side wall means generally parallel to said first side wall means and normal to said first cooperating wall means, with the free end of said extension flap defining extension means in each of said second side wall means, and each of said extension means having dimensions corresponding to said elongated slot means for insertion and upward extension therethrough, cut-out means in said second cooperating wall means for receiving therethrough one end portion of elongated article means having peripheral projection means in said end portion, said cut-out means having a geometric outline generally corresponding to and smaller than the geometric outline of said end portion, score means in said second wall means having a geometric outline generally corresponding to and larger than the outline of said end portion of said article means and symmetrically arranged about said cut-out means to define a tab strip, slit means extending transverse to and across said tab strip defining tab means, said tab means being forced toward said first wall means by said larger outline end portion and peripheral projection means extending through said second wall means while yieldingly engaging said peripheral projection means to thereby fasten

said article means to said carrier, and handle means provided in said second side wall extension means, whereby upon lifting a carrier by said handle means said article means is suspended from said second cooperating wall means and each of said second side wall means is pulled upwardly thereby slightly tilting inwardly the lower portions of said suspended article means inserted in said cut-out means to assure easier carrying thereof.

8. An article carrier as set forth in claim 7 in which said cut-out means and associated score means have a circular geometric outline and said slit means extend along radial lines from said cut-out means to said circular score means.

9. An article carrier as set forth in claim 7 in which said handle means provided in said second side wall extension means is defined by making said second side wall extension means of equal upward extension and including means holding said second side wall extension means together, such that said handle means is inserted between corresponding rows of article means during stacking of a plurality of carriers one on top of the other, thus providing greater stability for the stacked carriers.

10. A blank being cut and scored and adapted to be folded and interlocked together independent of additional attaching means to define a resulting supporting structure for article means, said blank comprising, first and second cooperating wall means, spacing means for spacing and holding said cooperating wall means apart and in parallel relation in said resulting supporting structure, cutout means in said second wall means for receiving therethrough article means to be supported by said resulting supporting structure, cut and score means in said second wall means defining fastening means for fastening and providing the sole support in said resulting supporting structure for article means received through said cut-out means, and cut means in said spacing means defining tear-out means which unfastens said article means upon tearing thereof.

11. A blank being cut and scored and adapted to be folded and interlocked together independent of additional attaching means to define a resulting carrier for supporting elongated article means having peripheral projection means in an end portion thereof by suspending said article means using said projection means, said blank comprising first and second cooperating wall means, cut and score means in said blank defining spacing means spacing and holding said cooperating wall means apart and in parallel relation in said resulting carrier, cut-out means in said second wall means for receiving therethrough said end portion of said elongated article means, said cut-out means having a geometric outline generally corresponding to and smaller than the geometric outline of said end portion, score means in said second wall means having a geometric outline generally corresponding to and larger than the outline of said article means, said score means being symmetrically arranged about said cut-out means to define a tab strip, slit means extending transverse to and across said tab strip defining tab means such that in said resulting carrier said tab means is forced toward said first wall means by said larger outline article means extending through said second wall means while yielding engaging beneath said peripheral projection means thereby fastening said article means to said resulting carrier and enabling said article means to be suspended solely from said second wall means upon lifting said resulting carrier, integral handle means extending transverse to and above the plane of said first wall means in said resulting carrier by extending through cooperating slot means in said first wall means, said handle means providing the sole means for holding said resulting carrier assembled together, and cut means in said spacing means defining tear-out means which unfastens said article means from said resulting carrier upon tearing thereof.

12. A carrier blank as set forth in claim 11 having cut-out means in said first wall means for viewing part of the end portion of said article means for identification thereof.

13. A blank being suitably cut and scored to form a carrier for a plurality of containers each having a peripheral projection bead at one end thereof comprising, a first pair of spaced apart parallel score lines in said blank defining a first cooperating wall means therebetween and a pair of extension flaps extending to either side of said first cooperating wall means and therebeyond and coextensive with said first cooperating wall means, elongated slot means in said first cooperating wall means arranged generally along the middle portion thereof and parallel to said score lines, said slot means having a length smaller than the length of said first cooperating wall means, a series of parallel spaced apart fold line means in each of said extension flaps which upon assembling said carrier from said blank define in sequence first side wall means generally normal to said first cooperating wall means, second cooperating wall means parallel to said first cooperating wall means, and second side wall means generally normal to said first side wall means, a score line in the free end of each extension flap defining extension means in each of said second side wall means, each of said extension means having a portion with a dimension corresponding to said elongated slot means for insertion and upward extension therethrough, and another portion of said extension means adjacent thereto defining an extension tab foldable under said first cooperating wall means upon insertion of the upwardly extending portion through said elongated slot, a plurality of cut-out means in said second cooperating wall means each for receiving therethrough one end portion of an associated container having said peripheral projection bead, said cut-out means having a geometric outline generally corresponding to and smaller than the geometric outline of the container end portion associated therewith, a plurality of score means in said second wall means each having a geometric outline generally corresponding to and larger than the outline of said end portion of its associated container and symmetrically arranged about its associated cut-out means to define a plurality of tab strips, slit means extending transverse to and across each tab strip defining tab means, said tab means being forced toward said first wall means by said larger outline end portion of its associated container extending through said second cooperating wall means while yieldingly engaging said peripheral projection means thereof to thereby fasten said associated container to said carrier, and cut means in each of said second side wall extension means defining handle means, whereby upon assembling said carrier from said blank said handle means pulls each of said second side wall means upwardly thereby slightly throwing inwardly the lower portions of said containers inserted through said cutout means and suspended from said second cooperating wall means to assure easier carrying thereof.

14. An article supporting structure comprising, first and second cooperating wall means, spacing means spacing and holding said cooperating wall means apart, cut-out means in said second wall means for receiving therethrough article means to be supported by said supporting structure, fastening means in said second wall means for fastening article means received through said cut-out means, cut means in said spacing means defining tear-out means which unfasten said article means upon tearing thereof, handle means for carrying said structure, and cut-out means in said first wall means for viewing a portion of said article means therethrough for identification thereof.

15. An article supporting structure comprising, first and second generally rectangular cooperating wall means, spacing means spacing and holding said cooperating wall means apart in parallel relation, said spacing means comprising side wall means arranged between said cooperating wall means and flap means arranged generally transverse said side wall means, cut-out means in said second wall means for receiving therethrough article means to be sup-

ported by said supporting structure, fastening means in said second wall means for fastening article means received through said cut-out means, cut means in said spacing means defining tearout means which unfasten said article means upon tearing thereof, and handle means for carrying said structure.

16. An article carrier comprising, first and second cooperating wall means, spacing means spacing and holding said cooperating wall means apart in parallel relation, cut-out means in said second wall means for receiving therethrough one end portion of elongated article means having peripheral projection means in said end portion, said cut-out means having a geometric outline generally corresponding to and smaller than the geometric outline of said end portion, score means in said second wall means having a geometric outline generally corresponding to and larger than the outline of said end portion of said article means and symmetrically arranged about said cut-out means to define a tab strip, slit means extending transverse to and across said tab strip defining tab means, said tab means being forced toward said first wall means by said larger outline article means extending through said second wall means while yieldingly engaging said peripheral projection means to thereby fasten said article means to said carrier, cut means in said spacing means defining tear-out means which unfastens said article means upon tearing thereof, handle means for said carrier, and cut-out means in said first wall means for viewing part of said end portion for identification.

17. An article carrier comprising, first and second cooperating wall means, elongated slot means in said first wall means, spacing means spacing and holding said cooperating wall means apart in parallel relation, cut-out means in said second wall means for receiving therethrough one end portion of elongated article means having peripheral projection means in said end portion, said cut-out means having a geometric outline generally corresponding to and smaller than the geometric outline of said end portion, score means in said second wall means having a geometric outline generally corresponding to and larger than the outline of said end portion of said article means and symmetrically arranged about said cut-out means to define a tab strip, slit means extending transverse to and across said tab strip defining tab means, said tab means being forced toward said first wall means by said larger outline article means extending through said second wall means while yieldingly engaging said peripheral projection means to thereby fasten said article means to said carrier, cut means in said spacing means defining tear-out means which unfastens said article means upon tearing thereof, and handle means for said carrier, said handle means being provided by extension means in said side wall means extending through said elongated slot means.

18. An article supporting structure comprising, first and second cooperating wall means, said first wall means having an elongated slot means extending therethrough, spacing means for spacing and holding said cooperating wall means in substantially parallel spaced apart relation, said spacing means comprising side wall means fastened between said cooperating wall means, extension means in said side wall means arranged adjacent said elongated slot means, said extension means extending substantially normally through said elongated slot means and above the plane of said first wall means to define handle means for said supporting structure, cut-out means in said second cooperating wall means for receiving therethrough article means to be supported by said supporting structure, and fastening means in said second wall means for fastening in position and providing the sole support for article means received through said cut-out means, said handle means providing the sole means for holding said supporting structure together and enabling said article means to be suspended therebeneath.

19. An article supporting structure as set forth in claim **18** further comprising cut means in said spacing means defining tear-out means which unfastens said article means upon tearing thereof.

20. A blank being cut and scored and adapted to be interlocked together to define a resulting article supporting structure, said blank comprising, first and second cooperating wall means, said first wall means having an elongated slot means extending therethrough, spacing means for spacing and holding said cooperating wall means in substantially parallel spaced apart relation in said resulting supporting structure, said spacing means comprising side wall means adapted to be fastened between said cooperating wall means in said resulting supporting structure, extension means in said side wall means which is adapted to be arranged adjacent said elongated slot means of said resulting supporting structure, said extension means being adapted to extend substantially normally through said elongated slot means and above the plane of said first wall means to define handle means for said resulting supporting structure, cut-out means in said second cooperating wall means for receiving therethrough article means to be supported by said resulting supporting structure, and fastening means in said second wall means for fastening in position and providing the sole support in said resulting supporting structure for article means received through said cut-out means, said handle means being adapted to provide the sole means for holding said resulting supporting structure together and enabling said article means to be suspended therebeneath.

21. A blank as set forth in claim **20** further comprising cut means in said spacing means defining tear-out means adapted to unfasten said article means from said resulting supporting structure upon tearing thereof.

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