Dec. 13, 1960 P. W. INGHAM 2,964,348

ARTICLE CARRIER

Filed July 16, 1958

FIG. 1

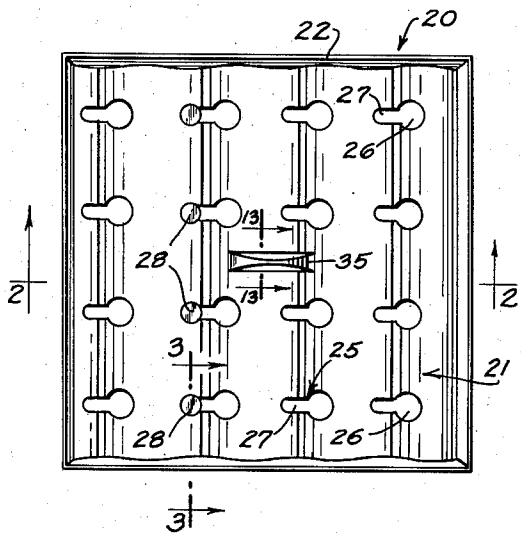


FIG. 2

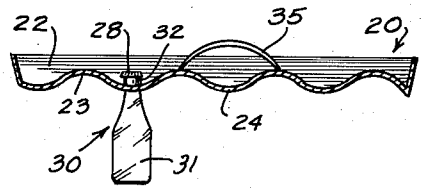


FIG. 3

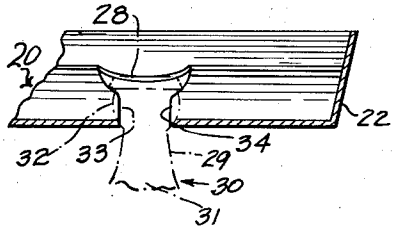


FIG. 4

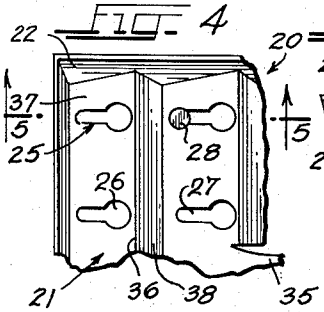


FIG. 5

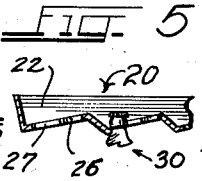


FIG. 6

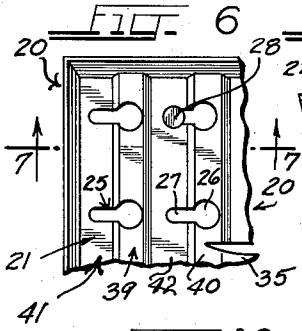


FIG. 7

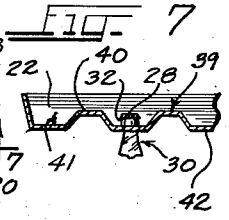


FIG. 8

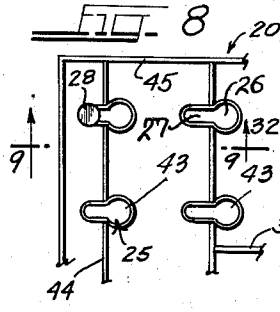


FIG. 9

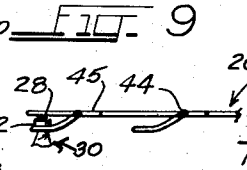


FIG. 10

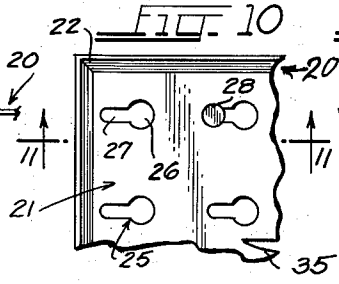


FIG. 11

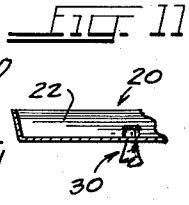


FIG. 12

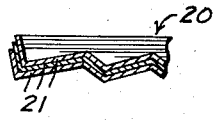


FIG. 13

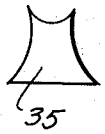
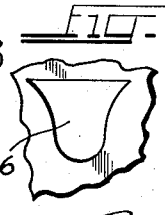


FIG. 14



INVENTOR.
PAUL W. INGHAM
BY
Norman E. H. Helbig Jr.
ATT'Y

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2,964,348

ARTICLE CARRIER

Paul W. Ingham, Chicago, Ill.
(900 Maple Lane, Elk Grove Village, Ill.)

Filed July 16, 1958, Ser. No. 748,982

20 Claims. (Cl. 294—87.28)

This invention pertains to improvements in carriers for articles. More specifically stated this invention relates to improvements in devices for lifting, transporting and supporting a plurality of rows of upstanding articles, as for example, a plurality of rows of upstanding bottles.

Still more particularly stated this invention pertains to certain improvements in carriers for a plurality of rows of bottles and the like having relatively large body portions, slender neck portions provided with enlargements such as beads or rings or bulbous collars or the like at the mouth adjacent the upper end of the neck of the bottles.

This invention also pertains to certain structural aspects of the improved carrier whereby the articles being carried are substantially locked in a temporary manner in carrying position in the carrier and whereby the carriers are adapted to be stacked in nested relation when not in use.

In commonly known devices of the general type contemplated by this invention, keyhole-shaped opening are sometimes employed so as to use the narrow or slot-shaped portion of the keyhole-shaped opening to engage the bulbous necks of the carried bottles in a carrying manner. In certain instances spring means are employed to temporarily lock the bottles thus engaged in such carrying position. In other instances shoulder means or cam means or like stop mechanisms are provided to temporarily lock the bottles thus engaged in carrying position. However, in all such devices, prior to this invention, wherein the articles or bottles are supported in the carriers without the use of moving parts in such carriers, it is necessary, when loading and/or unloading the bottles from such carriers, to tilt the carriers and/or the bottles with respect to one another and to maneuver the various bottles past one another either into or out of carrying position in such carriers. In no instances are such carriers adaptable for use in the carrying of more than two rows of bottles or similar articles.

In conventional carriers of the types adaptable for carrying more than two rows of articles or bottles, and which carriers are operable to be loaded or unloaded with the articles or bottles to be carried without the relative tilting and manipulating of the articles or bottles as mentioned above, movable lock elements or bottle neck or article neck engaging elements are provided to lock the necks of the articles or bottles in carrying position once the carrier has been loaded with bottles or articles to be carried. Obviously, the inclusion of such movable parts in a carrier adds appreciably to the cost thereof and to the difficulty of using such device, while on the other hand, the necessity of producing the relative tilting and the maneuvering of the bottles to load and unload the conventional carriers which are not provided with movable locking elements, adds very appreciably to the difficulty of using such devices.

It is therefore one of the objectives of this invention to provide a relatively simple and extremely easily operable device for lifting, transporting and supporting a plurality of rows of articles, as for example, bottles, by carryingly engaging the enlarged neck portions thereof; which device is relatively easy and relatively inexpensive to produce; which device consists of a unitary structure and does not include any moving parts; which device may be compactly and conveniently stored in a minimum of space with other and similarly made carriers due to a nesting structure or arrangement built into the devices; and which device may be made of metal, plastic, reinforced paper or other like materials.

A still further objective of this invention is to provide an article carrier for carrying a plurality of rows of articles which is easy to use and which is adapted to be quickly loaded and unloaded with a minimum of effort and in a minimum of time, and in which the articles when in carrying position are temporarily locked in the device in such carrying position, and which device may be loaded and unloaded without any relative tilting of the articles either with respect to the carrier or with respect to other articles being loaded or unloaded, and in which all the articles to be carried or being carried may be simultaneously loaded or unloaded respectively, as the case may be, by a simple manipulation of the carrier.

A primary objective of this invention is to provide an improved an inexpensive carrier of unitary and simple design without the inclusion of moving parts and adapted for use in the manual carrying of a plurality of rows of articles, such as bottles, which when carried are temporarily and automatically locked for carrying in upstanding position.

The reference in this application to the particular usefulness of the invention in apparatus for carrying bottles, and the selection of a bottle carrier as a basis for the description of the preferred embodiment of the invention, is made for the purpose of example only and is not to be interpreted as a limitation of the invention. Accordingly, the hereinafter contained description of the preferred embodiment of the invention will concern itself primarily with structure for lifting and transporting and supporting bottles of the type having an enlarged or bulbous portion at the upper end of the neck of the bottle.

The present invention in a bottle carrier, possesses the advantages of providing a relatively simple and relatively inexpensive and easily made and easily operated and highly efficient bottle carrier for carrying a plurality of rows of bottles, and possesses the further advantage of being comprised of a unitary element having no moving parts but being adapted to temporarily and automatically lock the bottles being carried in carrying position and adapted when not in use in the carrying of bottles to be compactly stacked in nested order. The present invention also possesses the further advantage of being easily and quickly loaded and unloaded by the simultaneous loading or unloading of all of the bottles being handled.

The foregoing and other objectives, important novel and useful features and advantages of this invention will become more apparent and be more easily understood upon examination of the following description thereof and the accompanying drawings and appended claims. It should, however, be remembered that, without desire of limitation, the invention will be described and illustrated as the preferred embodiment of the invention in a device for the carrying of upstanding bottles of the type provided with a bulbous upper neck portion. Certain changes and variations in the invention may suggest themselves to those skilled in the pertinent arts upon review of this application, which changes may not, however, depart from the spirit of this invention and may come within the scope of the appended claims.

In the accompanying drawings:

Figure 1 is a plan view of one variant of the invention,

showing one row of bottles supported in the device adapted to support a plurality of rows of bottles;

Figure 2 is a vertical sectional view taken along line 2—2 of Figure 1;

Figure 3 is a vertical sectional view taken along line 3—3 of Figure 1, showing the supported bottle in dotted lines;

Figure 4 is a fragmentary detailed view, in top plan, similar to the upper left hand corner of Figure 1, of a second variant of the invention;

Figure 5 is a vertical sectional view taken along line 5—5 of Figure 4;

Figure 6 is a fragmentary, detailed view, in top plan, similar to the upper left hand corner of Figure 1, of a third variant of the invention;

Figure 7 is a vertical sectional view taken along line 7—7 of Figure 6;

Figure 8 is a fragmentary, detailed view, in top plan, similar to the upper left hand corner of Figure 1, of a fourth variant of the invention;

Figure 9 is a vertical sectional view taken along line 9—9 of Figure 8;

Figure 10 is a fragmentary, detailed view, in top plan, similar to the upper left hand corner of Figure 1, of a fifth variant of the invention;

Figure 11 is a vertical sectional view taken along line 11—11 of Figure 10;

Figure 12 is a fragmentary, vertical sectional view of the modification of the invention shown in Figure 4; and showing the nesting arrangement of a number of such carriers;

Figure 13 is a vertical sectional view taken along line 13—13 of Figure 1; and

Figure 14 is a plan view of an opening which may be substituted for the keyhole-shaped openings shown in the foregoing figures of the drawings.

Referring to the drawings, in which like elements are identified by like numerals, and referring particularly to the variant of the invention shown in Figures 1, 2 and 3 of the drawings, **20** represents generally the improved carrier having a relatively thin and a relatively stiff main body section **21** surrounded by an upwardly and outwardly directed frame or bracing beam arrangement **22** integrally formed therewith or securely affixed thereto, as for example by welding in the event the carrier is made of metal. The portions of the brace **22** function as transversely extending and longitudinally extending bracing beams for the main body section **21**, and due to their upward and outward tilt are adapted to nest when one carrier **20** is stacked on another carrier **20**.

As illustrated in Figures 1 and 2, the body section **21** which, generally stated, lies in a single horizontal plane when in position for loading with upstanding bottles, is provided with longitudinally extending alternate and equal size and uniformly spaced and parallel upwardly convex ridges **23** and downwardly concave troughs **24**, producing a transversely wavy or undulating upper surface and lower surface on the body section **21**. Uniformly and symmetrically spaced keyhole-shaped openings **25** are arranged in a plurality of transversely extending and longitudinally extending parallel rows of keyholes **25** with four keyholes **25** in each row. Keyholes **25** are so arranged that the large portion **26** of each keyhole **25** is positioned at least partially in the crest portion of a wave or ridge **23** and the narrow or slot-like portion **27** of each keyhole **25** is directed in the same direction and extends from the side of a crest or ridge **23** into a trough **24**. By this arrangement, when the plane of the carrier **20** is horizontal, the large portion **26** of each of the keyholes **25** is positioned at a higher elevation than the narrow or slot-shaped portion **27** of the respective keyholes.

All of the narrow portions **27** of the keyholes **25**, in the plurality of parallel rows of keyholes **25** extend in the same direction from the associated larger portions **26** of the thus symmetrically arranged keyholes **25**. In each keyhole **25** the large portion **26** is sufficiently large as to permit the easy vertical movement therethrough of the capped mouth portion **28** at the upper end of the neck **29** of each of the upstanding bottles **31** to be loaded into the carrier, but will not permit the passage therethrough of the enlarged body portion **31** of the bottle **30**. A bulbous portion or bead or ring-like enlargement **32** is provided on the outer surface of the upper end of the neck **29** immediately below the bottle mouth portion of each of the bottles **30**. The narrow and elongated or slot-shaped portion **27** of each of the keyholes **25** is sufficiently wide as to permit easy straddling by the parallel side edges of such portions **27** over the necks **29** of the bottles **30**, immediately below the enlarged bead or ring portions **32**. However, the width of each of the portions **27** is less than the outer diameter of the rings **32**.

In using the improved bottle carrier **20**, the carrier is lowered vertically over a plurality of parallel rows of upstanding bottles **30**. The tops of those bottles are disposed in a common horizontal plane and are vertically aligned with the large portions **26** of the complementary parallel rows of keyhole openings **25** in carrier **20**. The lowering continues until the mouths of the bottles extend through the enlarged keyhole-shaped opening portions **26** to such an extent that the bottle rings **32** are above the upper end of the narrow portions **27** of the keyholes **25** at the locus of juncture of the portions **26** and **27**. The carrier **20** is then moved horizontally from left to right as viewed in Figure 1, parallel to the plane of the tops **28** of the bottles **30**, thereby causing the parallel side edges **33** and **34** of the slot-like narrow portions **27** of the keyhole openings **25** to straddle the necks **29** of the bottles **30** immediately below the bulbous ring-like enlargements **32**. With the carrier **20** thus disposed on the necks of the upstanding rows of bottles **30**, as shown for one row of bottles **30** in Figure 1, a vertical upward movement of the carrier **20**, as by lifting on the handle **35**, will cause the supporting or carrying engagement of the edges **33** and **34** of the narrow portions **27** of the openings **25** against portions of the under-surface of the rings **32**, whereupon the bottles may be transported in vertically depending arrangement in the carrier **20**.

The parallel side edges **33** and **34** of the narrow portions **27** of the openings **25** are tilted upwardly at the locus of juncture with the associated large portions **26** of the keyholes **25**, and are at that locus a part of the side of the ridge **23** in which the respective large portion **26** is located. As shown in Figure 3, such upwardly tilted end of the edges **33** and **34** comprise abutments against which the ring **32** may engage if a bottle **30** is moved from left to right, as viewed in Figure 1, without first raising such bottle **30**, thereby preventing the neck of the bottle **30** from reaching the large portion **26** of the keyhole-shaped opening **25** and in that manner temporarily and effectively locking the bottles **30** in the carrier **20**.

The handle **35** may extend transversely of carrier **20** between two rows of openings **25**. Handle **35** may be formed in any convenient manner, as for example, by making two transversely extending cuts in section **21**, from crest to crest of two adjacent longitudinally extending ridge portions **23**, and then bending the handle portion upwardly to give it an upwardly convex configuration transversely of carrier **20**. By rolling the edges of the handle **30** upwardly and inwardly a convenient grasping surface, as shown in section in Figure 13 may be produced, having downwardly concave longitudinal cross section at its mid point.

The variant of the invention shown in Figures 4 and 5 differs from the variant of the invention shown in Figures 1 to 3 in that the uniformly curved or undulating or corrugated or wavy surface of the body section **21** has been replaced in Figures 4 and 5 by a saw-tooth-shaped or angularly corrugated surface with the longitudinally

extending crests 36 of each ridge comprising the apex of an obtuse and downwardly and transversely opening angle defined between two downwardly and outwardly tilted but oppositely extending sections 37 and 38 of the body section 21 of that variant of the invention. Section 37 is preferably tilted at a lesser angle than section 38. The parallel rows of keyhole-shaped openings 25 are positoned in the sections 37, with the large portions 26 of the openings 25 close to the crests 36 and the narrow portions 27 of the openings 25 positioned at a lower elevation than the elevation of the large portions 26.

The variant of the invention shown in Figures 6 and 7 differs from the variant of the invention shown in Figures 1 to 3 by the provision therein of a transverse cross section in the body portion 21 in the general form of the cross section of "trough-shaped flooring," wherein the crest of each ridge 39 is defined by a horizontal section 40 and the bottom of each trough 41 is defined by a horizontal section 42. In the variant of the invention of Figures 6 and 7, the large portions 26 of the keyhole-shaped openings 25 are positioned in the sections 40, while the slot shaped portions 27 of the openings 25 are positioned in the sections 42 and extend up the side of the ridges 39 to join the associated portions 26.

In the variant of the invention shown in Figures 8 and 9 the keyhole-shaped openings 25 are defined by wire or the like frames or edges 43 having the same transverse configuration as the openings 25 of Figures 1 to 3. In each longitudinally extending row of keyhole-shaped elements or edges 43, the elements 43 are joined by longitudinally extending supports 44, with the end supports 44 of each row of elements 43 being secured to a rectangular frame 45. In this variant of the invention, frame 45 replaces the braces 22 of the hereinbefore described variants of the invention.

Figures 10 and 11 disclose a variant of the invention wherein the transversely wavy surface of element 21 of Figures 1 to 3 has been replaced by a flat element 21. All the keyhole-shaped openings 25 in the transversely extending and longitudinally extending plurality of parallel rows of openings 25 are at the same level. The variant of the invention shown in Figures 10 and 11 does not provide the bottle locking arrangement provided by the hereinbefore described variants of the invention.

All the illustrated variants of the invention are usable in substantially the same manner as hereinbefore described with respect to the form of the invention shown in Figures 1 to 3, and due to the configuration of the handle elements 13 and/or the body sections 21 and the braces 22, each variant of the invention may be stacked in nested relation as illustrated in Figure 12 with respect to several similar portions of the variant of the invention shown in Figures 4 and 5.

Figure 14 of the drawings illustrates a modification of an opening 46, which is in the general shape of an inverted and truncated triangle. Openings of the shape of opening 46 may be substituted for the keyhole-shaped openings 25.

In the description of the invention it was indicated that the improved carriers may be formed of metal. Obviously other relatively stiff materials, as for example, certain types of plastics, reinforced paper, etc. may also be used.

From the foregoing description of this invention and from the accompanying drawings, it will be apparent that this invention realizes the introductorily enumerated objectives respecting the improvements in a device for carrying bottles and the like. It will similarly be apparrent that the invention also possesses the hereinbefore listed advantages and provides a new, novel and useful device for carrying articles.

Having thus described and illustrated the preferred embodiments of this invention in several variants thereof in improved bottle carrying devices, the invention is not to be interpreted as being restricted to the specifically illustrated and described variants of embodiments of the invention as set forth in the drawings and as hereinbefore described, except insofar as is necessitated by the appended claims and the disclosures of the prior art.

The invention is hereby claimed as follows:

1. In a device for lifting and carrying bottles, a sheet of material, alternating and parallel ridge portions and depression portions in said sheet of material, openings in said sheet of material arranged in parallel transversely extending and parallel longitudinally extending rows, each opening being comprised of an enlarged wide portion and an elongated comparatively narrower portion, said enlarged wide portion of each opening being positioned at least partially in a ridge portion of said sheet of material and the associated narrower portion of each opening being positioned at a lower elevation than the enlarged wide portion of the opening, all of said narrower portions of said openings being positioned on the same side of the associated larger openings and extend in the same direction therefrom.

2. In a device for the handling of articles, a sheet of material, alternating and parallel and permanently formed upwardly convex and downwardly concave portions in said sheet of material, a plurality of openings in said sheet of material arranged in parallel transversely extending and parallel longitudinally extending rows, each opening being comprised of an enlarged wide portion and an elongated and comparatively narrower portion, said enlarged wide portion of each opening being positioned at least partially in a ridge portion of said sheet of material and the associated narrower portion of each opening being positioned at a lower elevation than the enlarged portion, all of said narrower portions of said openings being positioned on the same side of the associated larger openings and extend in the same direction therefrom.

3. A bottle lifting and carrying device comprising, a sheet of material formed with parallel and alternate ridges and depressions, parallel rows of keyhole-shaped openings in said sheet of material so arranged that the narrow ends of each of said openings in a row of openings extends into a depression in said sheet of material and the large end of each of said openings in a row of openings extends into a ridge in said sheet of material, and all of the narrow ends of said openings extend in the same direction from the larger end of the respective openings.

4. A bottle lifting and carrying device comprising, a sheet of material formed with parallel and alternating upwardly convex and downwardly concave portions, parallel and longitudinally extending rows of keyhole-shaped openings in said sheet of material so arranged that the narrow end of each of said openings in a row of openings extends into a permanently formed downwardly concave portion of said sheet of material and the large end of each of said openings in a row of openings extends into a permanently formed upwardly convex portion of said sheet of material, and all of the narrow ends of said openings extend in the same direction from the large ends of said respective openings.

5. In a bottle lifting and carrying device, a sheet of material, alternating and parallel ridge portions and depression portions in said sheet of material, openings in said sheet of material arranged in a plurality of transversely extending and longitudinally extending rows, said openings being of keyhole-shape and being so arranged in said sheet of material that the narrow end of each of said openings extends downwardly in the same direction from a ridge portion into a depression portion and the large end of each of said openings is positioned at least partially in a ridge portion.

6. In a carrier for bottles having a relatively large body portion as compared to its respective thin neck portion and an enlargement at the outer end of said neck portion, a sheet of material, alternate and parallel ridge portions and depression portions in said sheet of material, trans-

versely extending and longitudinally extending rows of openings in said sheet of material, said openings in each longitudinally extending row of openings being formed partially in a permanently formed ridge portion and partially formed in a permanently formed depression portion, said openings each being of such configuration and construction and arrangement wherein a first section of each of said openings is sufficiently large as to permit the easy movement therethrough of said enlargement but not sufficiently large to permit the movement therethrough of said body portion and wherein a second section of each of said openings is sufficiently large as to permit the easy movement therethrough of said neck portion but not sufficiently large as to permit the movement therethrough of said body portion or said enlargement, said second sections of said openings all extending in the same direction from the associated first sections of said openings.

7. A carrier for upstanding bottles having enlarged upper mouth portions at the upper end of the neck portion of the bottles, comprising, a sheet of material, a plurality of spaced and parallel and elongated and substantially horizontal and permanently formed straight depression portions in the form of longitudinally extending troughs in said carrier, a plurality of spaced and parallel and elongated and longitudinally extending substantially horizontal and permanently formed straight ridge portions in said carrier, said depression portions alternating with and being parallel lengthwise to said ridge portions and disposed lower than said ridge portions, a row of bottle mouth receiving openings in each of said ridge portions, said bottle mouth receiving openings being larger than the enlarged mouth portion of the bottles to be carried, a row of elongated bottle neck receiving openings in each of said depression portions, said bottle neck receiving openings being narrower than the enlarged upper mouth portions of the bottles to be carried and adapted to support bottles therein by their enlarged upper mouth portions, each of said bottle neck receiving openings extending from the trough of a depression portion up to and joining a bottle mouth receiving opening and each of said bottle neck receiving openings extending in the same direction from the associated bottle mouth receiving opening, whereby to provide joined bottle mouth receiving openings and bottle neck receiving openings extending in a plurality of parallel rows transversely and longitudinally of said ridge portions.

8. In a device for lifting and carrying a plurality of articles having relatively large body portions as compared to their respective upstanding neck portions and enlarged top portions at the upper end of said neck portions, a shape retaining sheet of material, substantially horizontally disposed and elongated openings of uniform size and each of which openings has a wider portion at one end compared to the width of the associated narrower portion at its opposite end and all of which openings are arranged in said sheet of material in transversely extending and lognitudinally extending uniformly spaced and parallel rows and all of which openings are so constructed and arranged that the wider portions of each of said openings are larger than the top portions of each of said articles and the narrower portions of each of said openings are smaller than the top portions of each of said articles but which narrower portions are larger than the diameter of said neck portions and which openings are also so constructed and arranged so that all of the narrow portions of said openings are directed in the same direction and extend downwardly from the associated wider portion of each respective opening so as to adapt the wider portions of the openings to receive the enlarged top portions of complementary rows of upstanding articles aligned with said openings, said device being adapted to be moved downwardly upon transversely extending and longitudinally extending parallel rows of upstanding articles to cause the enlarged top portions of such articles to pass through the aligned wider portions of said openings whereafter the device is moved in a single direction in a plane substantially parallel to the plane in which said top portions of said articles are approximately disposed to cause the neck portions of all such articles immediately below said top portions to enter the narrow portions of said openings whereafter the device is elevated to engage portions of the undersurface of the enlarged top portions of all such articles and lift the articles as a group for transportation, the articles being suspended by their enlarged top portions to hang substantially vertically.

9. A device for lifting and carrying a plurality of articles having relatively large body portions as compared to their respective upstanding neck portions and enlarged top portions at the upper end of said neck portions, a shape retaining sheet of material, substantially horizontally disposed keyhole-shaped openings each of which openings is defined by a continuous edge and each of which openings has a wider portion at the enlarged end of the keyhole-shaped opening as compared to the narrower portion at the opposite end of said opening and all of which openings are arranged in said sheet of material in transversely extending and longitudinally extending parallel rows and all of which openings are so constructed and arranged that the wider portions of each of said openings are larger than the top portions of each of said articles and are positioned at a higher elevation than the narrower portions of each of said openings and which narrower portions of each of said openings are narrower than the top portions of each of said articles but which narrower portions are wider than said neck portions and are also so constructed and arranged so that all of the narrower portions of said openings are directed in the same direction and extend downwardly from the associated wider portion of each respective opening so as to adapt the wider portions of the openings to receive the enlarged top portions of rows of upstanding articles aligned with said openings, said device being adapted to be moved downwardly upon transversely extending and longitudinally extending parallel rows of upstanding articles to cause the enlarged top portions of such articles to pass through aligned wider portions of complementary rows of said openings whereafter the device is moved in a single direction in a plane substantially parallel to the plane in which said enlarged top portions of said articles are approximately disposed to cause the neck portions of all such articles immediately below said enlarged top portions to enter the narrower portions of said openings whereafter the device is elevated to engage portions of the undersurface of the enlarged top portions of all such articles and lift the articles as a group for transportation, the articles being suspended by their enlarged top portions to hang substantially vertically.

10. A device according to claim 9, wherein said sheet of material is provided with longitudinally extending and transversely alternating and uniformly spaced parallel ridge portions and parallel depression portions and wherein the wider portion of each of said keyhole-shape openings is positioned at least partially in such a ridge portion and the narrower portion of each of said keyhole-shaped openings extends in the same direction and is positioned at least partially in such a depression portion and partially in such a ridge portion with one end of each of said narrower portions extending upwardly in the same direction to the juncture with the associated wider portion of the respective opening.

11. A device according to claim 10, wherein said sheet of material is provided with bracing means in addition to said ridge portions and said depression portions.

12. A device according to claim 11, wherein said bracing means extends transversely of said ridge portions and of said depression portions.

13. A device for simultaneously lifting and transporting the bottles of a group of bottles which are disposed substantially perpendicular to the plane of said device and which are arranged in a plurality of transversely ex-

tending and longitudinally extending parallel rows and the tops of which bottles at the upper end of the necks thereof are bulbous and disposed approximately in a plane, a sheet of shape retaining material, openings in said sheet of material disposed in a plurality of transversely extending and longitudinally extending parallel rows spaced complementary to the rows of said bottles, each of said openings being elongated and being so constructed and arranged so that it is wider at one end as compared with the width of the narrower end of each respective opening and so that all of said openings have the wider end thereof wider than the bulbous portions of the necks of said bottles and so that all of said openings have the narrower end thereof directed in the same direction and so that all of the narrow ends of said openings extending upwardly to the wider end of each respective opening and so that all of the narrow ends of said openings are narrower than the bulbous portions of the necks of said bottles but wider than the necks of said bottles immediately below said bulbous portions, the narrower ends of all of the openings being adapted to receive with a loose fit the individual necks of bottles immediately below said bulbous portions and to engage at least two spaced points on the undersurface of the bulbous portion of a received bottle at the top end of a received bottle when so position, said device being adapted to be moved downwardly over said plurality of rows of bottles having their tops approximately disposed in a plane to cause all said bulbous portions to pass through the wider ends of said openings whereafter the device is moved in a single direction in a plane parallel to the plane in which the tops of the bottles are approximately disposed to cause the necks of all such bottles to enter the narrow ends of said openings whereafter the device is elevated to engage at least two points on the underside of the bulbous portion of the top of each bottle and lift the group of bottles for transportation, the bottles being thus pivotally suspended so as to hang substantially vertically despite minor tilting movements of the device during transportation.

14. In a device for carrying bottles having enlarged upper mouth portions, a plurality of keyhole-shaped edges shaped to have one end of each set of edges define a narrow area portion and have the other end define a comparatively wide area portion, the portions of the keyhole-shaped edges defining the narrow area portions straddle the necks of bottles below the enlarged upper mouth portions of the bottles and engage the undersurface of the enlarged upper mouth portions of the thus straddled bottles, said keyhole-shaped edges being arranged in a plurality of transversely extending parallel rows and longitudinally extending parallel rows with all narrow area portions defined by the keyhole-shaped edges directed in the same direction and also directed downwardly from the wide area portions defined by the keyhole-shaped edges.

15. In a device for carrying articles provided with engageable projecting means which has an enlargement at the free end thereof, a plurality of sets of elongated keyhole-shaped edges each set of which keyhole-shaped edges is so shaped so as to define at one end thereof a wide area portion which is of greater transverse width compared to the transverse width of an associated narrow area portion at the opposite end thereof, each set of edges being so constructed and arranged so that it has portions of said edges which define the narrow area portion of the keyhole-shaped edges straddle said engageable projecting means inwardly of the enlargement at the free end of the engageable projecting means and adapted to engage portions of the inner side of said enlargement, said keyhole-shaped edges being arranged in a plurality of parallel rows wherein at least part of each narrow area portion is directed downwardly from the associated wide area portion and wherein all of the narrow area portions are directed in the same direction, and shape retaining support means joining all said keyhole-shaped edges.

16. In a carrier for bottles of the type wherein each of the bottles has a body portion and a neck portion and wherein the body portion of each of the bottles is relatively large as compared to the size of the neck portion of the respective bottle and wherein each bottle also has an enlargement at the outer end of said neck portion, a sheet of shape retaining material, a plurality of transversely extending and longitudinally extending rows of openings in said sheet of material, each of said openings having a first section aligned with an associated second section, said opening each being of such configuration and construction and arrangement so that the first section of each of said openings is sufficiently large as to permit the easy movement therethrough of said enlargement at the outer end of said neck portion but is not sufficiently large to permit the movement therethrough of said body portion and wherein the second section of each of said openings is directed downwardly from the associated first section of the respective opening and wherein the second sections of all of the openings are directed in the same direction and wherein the second section of each of said openings is sufficiently large as to permit the easy movement therethrough of said neck portion but not sufficiently large as to permit the movement therethrough of said body portion or said enlargement.

17. In an article carrier for carrying articles having a body portion and a projecting member extending from the body portion and wherein the body portion is relatively large as compared to the size of the respective projecting member extending from said body portion and wherein each article has an enlargement at the outer end of said projecting member, the combination of, a plurality of rows of substantially horizontally disposed sets of edges, each set of edges being continuous and defining a separate area wherein each area has a first area portion associated with an aligned second area portion, each said first area portion and its associated second area portion being so constructed and arranged and of such configuration so that the first area portion of each of the separate area portions is too small to permit the movement therethrough of said body portion but is sufficiently large to permit the easy movement therethrough of said enlargement at the outer end of the projecting member and wherein the second area portion of each of the separate area portions is directed in the same direction and is also directed downwardly from the associated first area portion and each of the second area portions is sufficiently small in one dimension as to preclude the movement therethrough of said enlargement but is sufficiently large to permit the movement therethrough of the remainder of said projecting member, a portion of a set of edges bounding each said second area portion being so constructed and arranged so that it straddles said projecting member and supportingly engages the surface of said enlargement nearest said body portion.

18. In a device for carrying a plurality of articles each of which articles has a body portion and an associated projecting member having an enlargement at the outer end of said projecting member, said body portion of each article being relatively large compared to the associated projecting member, a plurality of rows of sets of edges each of which set of edges bounds and defines a first area portion and an associated second area portion which first area portion and second area portion are of such configuration and construction and arrangement so that the first area portion is sufficiently large as to permit the easy movement therethrough of the enlargement on the end of one of the projecting members and wherein the second area portion is sufficiently small in one dimension as to be adapted to straddle said projecting member and to preclude the passage of the enlargement on the end of said projecting member through said second area portion and wherein all of the second area portions are directed in the same direction and at least part of each

second area portion is directed downwardly from the associated first area portion.

19. In a device for lifting and carrying a plurality of articles having relatively large body portions as compared to their respective upstanding neck portions and enlarged top portions at the upper end of said neck portions, a shape retaining sheet of material provided with longitudinally extending and transversely alternating and uniformly spaced and parallel ridge portions and depression portions, keyhole-shaped openings in said sheet of material arranged in transversely extending and longitudinally extending parallel rows, each of said openings having a large portion as compared to an associated narrow portion at its oppsite end and being defined by a continuous edge and being positioned at least partially in one of said ridge portions with the narrow portion of each of said keyhole-shaped openings extending in the same dition and being positioned at least partialy in one of said depression portions and partially in one of said ridge portions with one end of each of said openings extending in the same direction and upwardly to the juncture with the associated large portion of the respective opening.

20. A device according to claim 19, wherein said sheet of material is so constructed and arranged so as to provide bracing means which extend transversely of said ridge portions and said depression portions of said sheet of material.

References Cited in the file of this patent

UNITED STATES PATENTS

2,337,243	Hotoff	Dec. 21, 1943
2,348,187	Beskin	May 9, 1944
2,407,529	Bertram	Sept. 10, 1946
2,408,249	Cohn	Sept. 24, 1946
2,427,838	Cox	Sept. 23, 1947
2,442,636	Bertram	June 1, 1948
2,454,178	Howell	Nov. 16, 1948
2,604,354	Gray	July 22, 1952
2,697,629	Mushrush	Dec. 21, 1954