Dec. 23, 1958 F. R. LINTHICUM 2,865,669

BOTTLE CARRIER

Filed July 26, 1955 3 Sheets-Sheet 1

Fig. 1

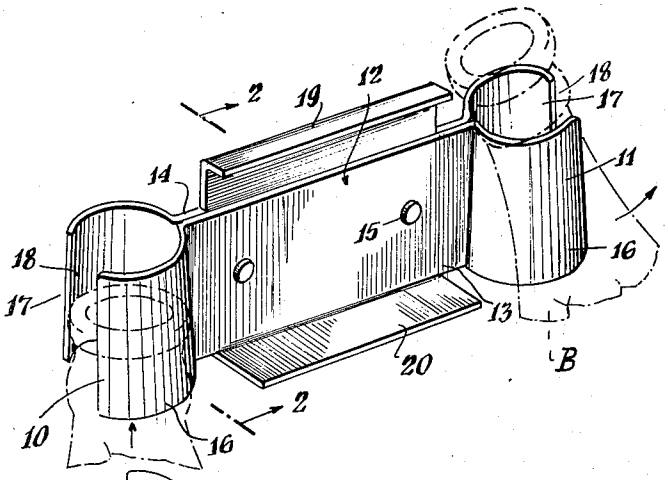


Fig. 2

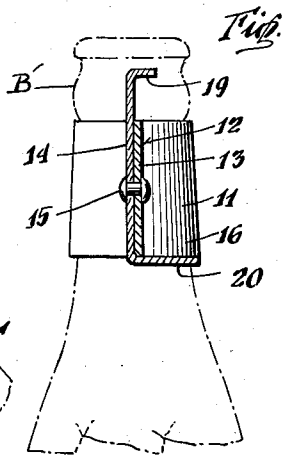


Fig. 3

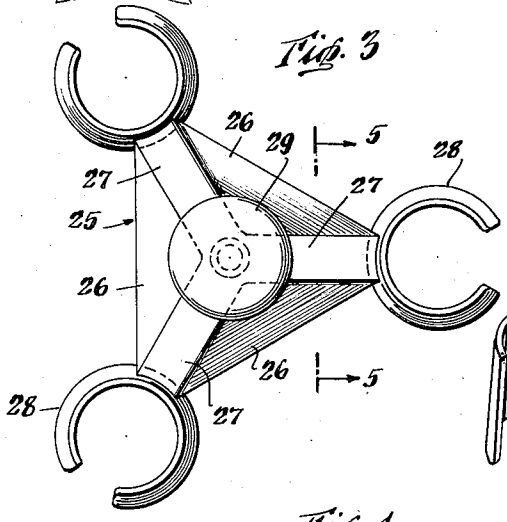


Fig. 6

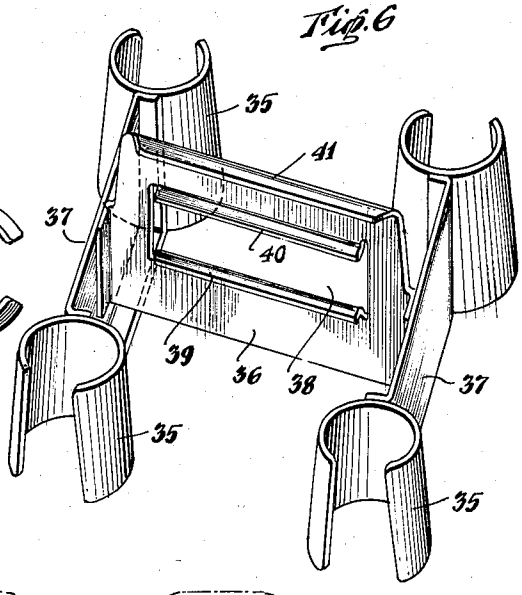


Fig. 4

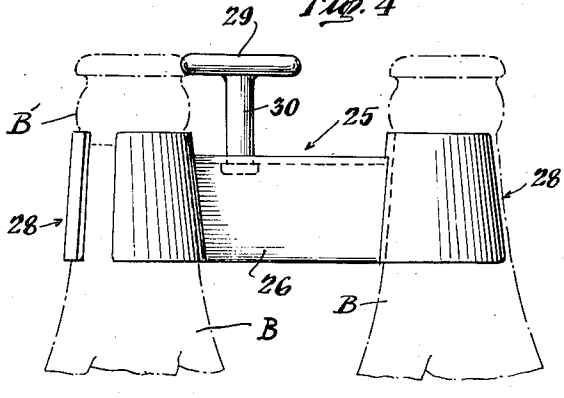
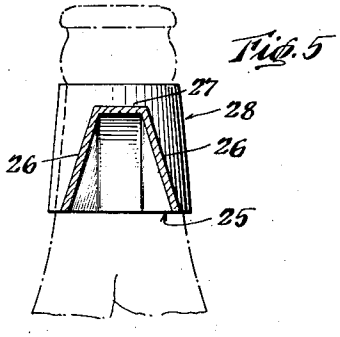


Fig. 5



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BOTTLE CARRIER

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Fig. 12

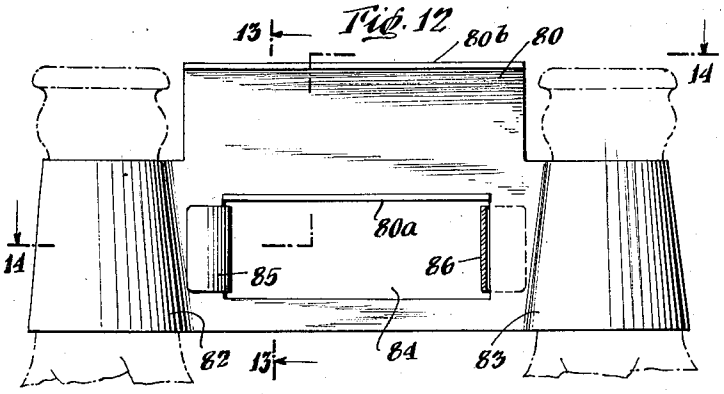


Fig. 13

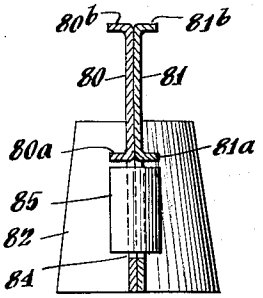


Fig. 14

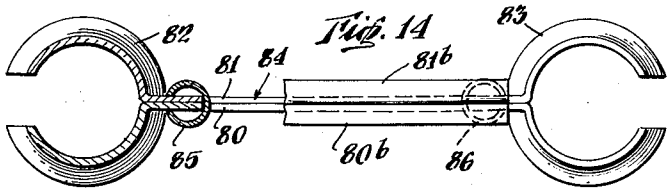


Fig. 19

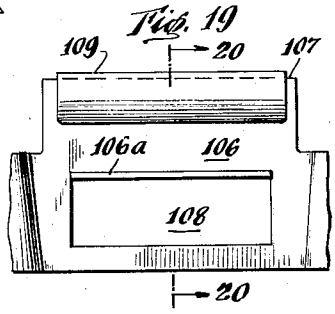


Fig. 21

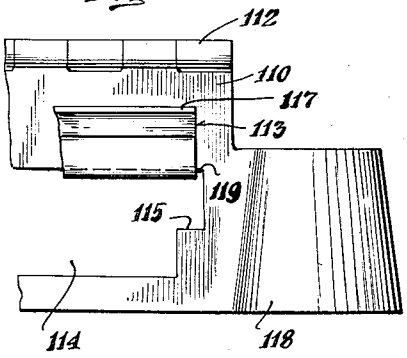


Fig. 22

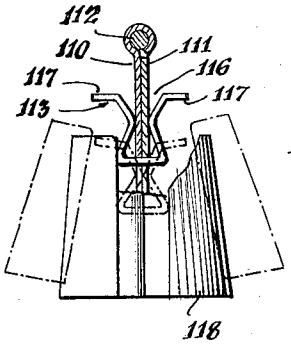


Fig. 20

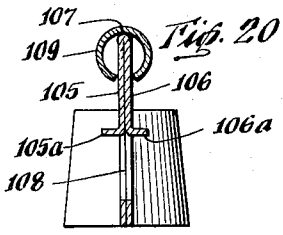


Fig. 17

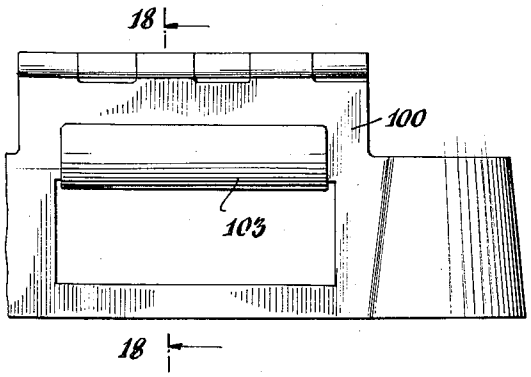
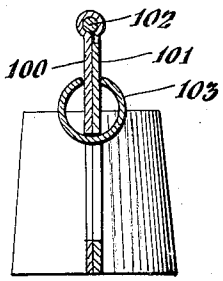


Fig. 18



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BOTTLE CARRIER

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Fig. 7

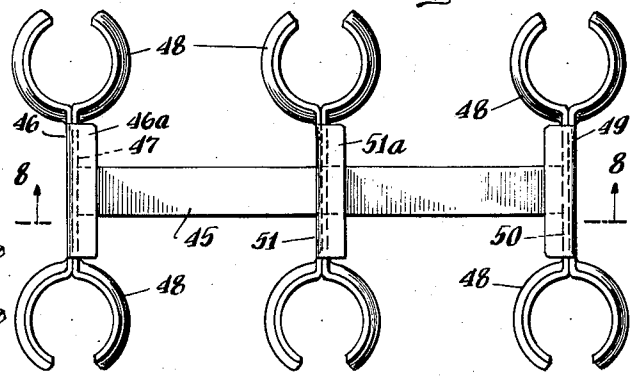


Fig. 9

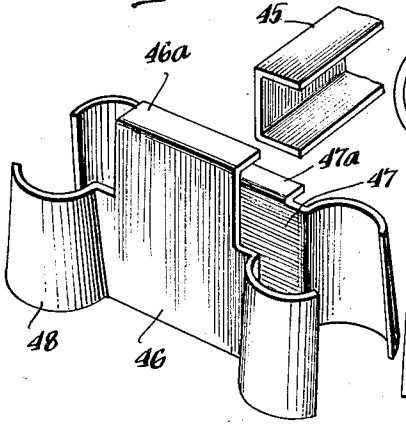


Fig. 8

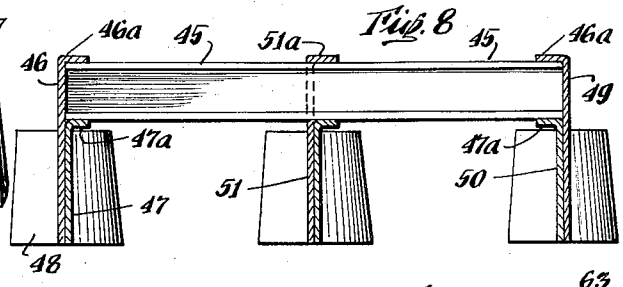


Fig. 15

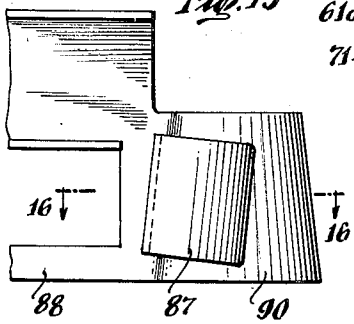


Fig. 10

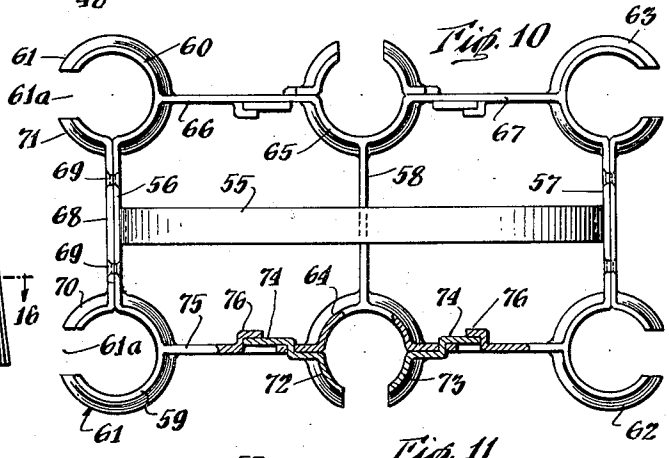


Fig. 16

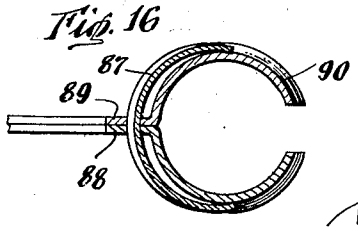
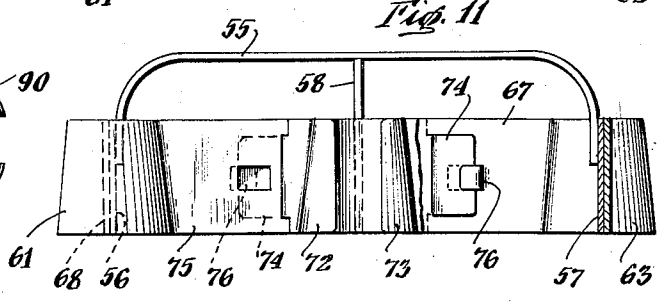


Fig. 11



United States Patent Office

2,865,669

Patented Dec. 23, 1958

2,865,669

BOTTLE CARRIER

Frank R. Linthicum, Moorestown, N. J.

Application July 26, 1955, Serial No. 524,523

12 Claims. (Cl. 294—87.2)

The invention is concerned with a carrier for containers of the character corresponding to normal beverage bottles. It comprises an inexpensive, simple, easily utilized, permanent carrier for supporting and transporting a plurality of such bottles as between store and home, for example. The carrier is comprised of metal or plastic and is impervious to moisture, and highly resistant to tearing or breaking.

The construction and operation are such as to ensure against accidental release of the bottle and to minimize the breakage which commonly occurs in the case of bags or existing types of paper cartons. The device embodies as a primary feature a hollow frusto-conical element for each bottle of a split construction having an outer bottle release slot and the opposed arc or crescent shaped sides are resiliently connected whereby a bottle may be readily secured in position by placing the larger open bottom end over the top of the bottle and exerting downward pressure to move the conical element down to a position where the sides automatically contract into position below the enlarged bottle neck. Individual bottles are easily releasable laterally through the corresponding slot by grasping the body of the bottle and swinging it outwardly to wedge apart the sides of the conical element.

The basic principle is applicable to two, three, four, six or twelve bottle units or any desired number within reason and in any desired relation or arrangement. The physical embodiment is light-weight and simple minimizing need for cleaning. It is of a character to eliminate diversion of use to other types of merchandise as often occurs with basket-type metal and wooden carriers.

The invention accordingly comprises a carrier for containers having the features, relation of elements and advantageous characteristics which will be exemplified in the representative constructions and arrangements shown in the accompanying drawings. Accordingly reference should be had thereto, in which:

Fig. 1 is a perspective view of a simple two-bottle carrier illustrating also the manner of applying the carrier to a bottle and the manner of releasing a bottle from the carrier;

Fig. 2 is a cross-sectional view on the line 2—2 of Figure 1;

Fig. 3 is a top plan view of a three-bottle carrier;

Fig. 4 is a view in elevation of the device of Figure 3;

Fig. 5 is a cross-sectional view taken on the line 5—5 of Figure 3;

Fig. 6 is a perspective view of a four-bottle carrier;

Fig. 7 is a plan view of one representative form of six-bottle carrier;

Fig. 8 is a vertical cross-sectional view on the line 8—8 of Figure 7;

Fig. 9 is a fragmentary exploded view showing some of the elements of the carrier of Figures 7 and 8;

Fig. 10 is a plan view of another form of six-bottle carrier;

Fig. 11 is a side view in elevation of the carrier of Figure 10;

Fig. 12 is a view in elevation of another form of two-bottle carrier embodying another means for providing the resilient function to the frusto-conical bottle carrying element;

Fig. 13 is a vertical cross-sectional view taken on the line 13—13 of Figure 12;

Fig. 14 is a plan view partly in section on the line 14—14 of Figure 12;

Fig. 15 is a fragmentary view showing a different means for exerting the resilient pressure on the sides of the bottle engaging elements;

Fig. 16 is a plan cross-sectional view on the line 16—16 of Figure 15;

Fig. 17 shows a further form of spring clip means for exerting the resilient clamping effect on the bottle engaging elements;

Fig. 18 is a vertical cross-sectional view on the line 18—18 of Figure 17;

Fig. 19 is a fragmentary view illustrating another form of spring clip means for exerting the resilient pressure on the bottle holding elements.

Fig. 20 is a vertical cross-sectional view on the line 20—20 of Figure 19;

Fig. 21 is a side view in elevation of a carrier employing a latch device; and

Fig. 22 is an end view looking from the right of Figure 21 but partly in section.

Figures 1 and 2 show a bottle carrier embodying the general principles of the invention adapted for the transportation of two bottles. In the form there shown the device embodies two elements 10 and 11 located at opposite ends of a supporting frame 12 which also serves as a carrying handle. The construction may comprise simply two parts of resilient sheet material such as steel or other material having sufficient strength and resiliency. For example, the material may be of certain types of plastic having the requisite strength and spring characteristics. For steel the sheet material may have a thickness in the range of .015 to .060 of an inch, for example, depending upon various circumstances including the number and size of the bottles to be carried, and for plastic the thickness will likewise vary dependent additionally upon the characteristics of the particular plastic employed.

The two parts comprise in general middle plate portions 13 and 14 secured together in any suitable manner as by means of rivets 15. The plates have at their ends complemental crescent or arc-shaped parts 16 and 17 respectively, an opposing pair comprising the hollow frusto-conical element 10 or 11 with an outer slot or opening 18. The shape and size of the conical element is such that it conforms in general to the shape and size of the neck of the bottle below the upper enlarged head. The bore may be slightly larger than that portion of the bottle providing the diameter at the top is smaller than the enlarged head of the bottle. Preferably, however, the bore is slightly smaller in diameter than the corresponding portion of the bottle neck when the elements are in relaxed condition so that normally the crescent shaped parts grasp the neck of the bottle with a slight pressure. It is important that the frusto-conical elements have considerable height so that the bottles are supported by a band sufficiently wide to maintain the bottles in substantially fixed position and thereby prevented from vibrating or rattling or coming in contact with each other. Furthermore, with the bottles held in fixed position, the loaded carriers may be stacked in successive tiers for store display and remain steady. For the desired results the height of the cones should be at least about ¾ of an inch and preferably higher. A height of 1¼ niches has been found quite satisfactory for general purposes.

Figure 2 and also Figures 4 and 5 illustrate the normal

position of a bottle B when engaged. By reason of the conical shape of the elements **10** and **11** the diameter at the bottom is slightly larger than the diameter of the upper enlarged head of the bottle and may extend into the element **10** to a position approximately that shown in Figure 1 at the left thereof without expansion of the element **10**. Insertion of the bottle to the carrying position such as that illustrated in Figure 2 requires merely a downward pressure on the carrier until the upper enlarged head B' of the bottle passes the upper edge of the conical element and the sides of the element snap shut into bottle supporting position. For removal of the bottle it is simply necessary to grasp the lower part thereof and swing it outwardly in a plane generally parallel to that of the supporting frame **12** in a manner indicated in dotted lines at the right in Figure 1 which causes the opposed crescent shaped elements **16** and **17** to be flexed apart and the bottle neck to be twisted outwardly through the slot **18**.

The frame part **12** will normally include or comprise a handle to be readily grasped for carrying the device and the supported bottles. To this end in Figures 1 and 2 the plate **14** is provided with upper and lower flange portions **19** and **20** respectively which serve the double function of added rigidity and providing flat surfaces for comfort when grasped by the hand.

An important feature of the invention is that of the opposed crescent shaped parts of the bottle carrying elements being resiliently connected and capable of being flexed apart. The function is accomplished in the device of Figures 1 and 2 by the inherent character of the material employed for the frusto-conical elements, but it will be understood that the opposed crescent shaped members may be per se of somewhat rigid material and the ability to flex be accomplished by means of auxiliary connecting elements and when the term "resiliently connected" is employed it will be understood that it is intended to cover various structural means for the purpose whether inherent characteristics of the material or by auxiliary spring elements arranged flexibly to clamp the opposed arc-shaped elements together.

The principles of the invention are applied to a three-bottle carrier in the device of Figures 3, 4 and 5 which includes a central frame portion **25** of sheet metal material, for example, or plastic, having flange sides **26** which slope downwardly and outwardly from the upper flattened portions **27**. Bottle carrying elements **28** are supported at each point of the generally triangular shaped frame **25**. The elements **28** may be integrally cast with the main frame **25**, particularly if the material is plastic or the elements **28** may be separately formed and secured to the frame **25** in any suitable manner as by welding thereto when the frame is made of metal. A suitable handle is provided which may comprise as shown an upper knob **29** connected by a stem **30** into the upper surface of the frame part **25**. The operation and functioning of the carrier of Figures 3, 4 and 5 is generally similar to that of the two-bottle carrier of Figures 1 and 2.

Figure 6 shows the principles of the invention applied to provide a four-bottle carrier in which four of the frusto-conical elements **35** are arranged in the form of a square on a suitable frame which may comprise a vertical plate **36** having secured to each end thereof as by welding end vertical plates **37**, the bottle carrying elements **35** being in turn secured to the opposite ends of the plates **37** in a suitable manner as by welding in case the material is metal. A convenient comfortable handle is provided by an open slot **38** in the vertical plate **36**. The slot **38** may be formed by stamping and bending out portions of the plate **36** to form the flanges **39** and **40** which thereby avoid the sharp edges of the plate and give added strength and rigidity against bending. In addition the upper edge of the plate **36** may be bent over as indicated at **41** for the same general purposes.

Figures 7, 8 and 9 show a rather simple form of six-bottle carrier. A carrier of this general shape and form could be made of plastic in substantially all one rigid integral frame, but the particular form shown is intended to illustrate the six-bottle carrier made of assembled metal parts. The frame includes a longitudinally extending channel shaped member **45**. Two bottles are adapted to be supported at the left end of the carrier by means of two plates **46** and **47** secured flat-wise together at their mid portion having suitably shaped parts at the ends to form the frusto-conical bottle carrying elements **48**. The upper edges of the plates **46** and **47** are each provided with a turned over flange **46***a* and **47***a* respectively and spaced apart a distance corresponding to the height of the channel member **45** and adapted to receive the end thereof between the flange parts **46***a* and **47***a*. The elements **46**, **47** and **45** are all secured together in any appropriate manner which may be by welding or rivets or both. The left end of the channel member **45** is similarly secured to the plates **49** and **50**.

As shown two bottles are supported at the mid point of channel member **45** by means generally similar to the bottle supporting members at the ends except that the plate **51** has a rectangular opening therein through which extends the channel member **45**. The upper edge of the plate **51** has a bent over flange portion **51***a* similar to the flange **46***a* at the left end of the carrier.

The general spacing of the bottle carrying elements **48** may be varied to suit the circumstances. Conveniently they may be spaced and relatively located corresponding to the spacing and location of bottles in a standard wooden box or crate and accordingly the carrier may be easily loaded with bottles by applying the carrier over a corresponding group of six-bottles in a crate or box and exerting downward pressure thereon. An auxiliary handle means may be applied to the frame shown in Figures 7, 8 and 9, but the present arrangement is such as to afford its own carrying means as, for example, the channel **45** may be regarded and used as the handle and the carrier lifted by placing the hand around the channel member **45** at the mid point with the hand straddling the transverse members including the flange part **51***a* and having two fingers at each side thereof.

Figures 10 and 11 show another arrangement for a six-bottle carrier. It is particularly intended to illustrate a carrier in which the main frame and major part of the carrier is comprised of a material which can be, but need not be, resilient or flexible, the flexibility being provided by the addition and assembly to the main frame of parts which provide the necessary resiliency and ability to flex and releasably support the bottles.

The main frame which may be metal or die cast plastic includes a central handle part **55** from which is suspended the end portions **56** and **57** and a mid portion **58**. Integral with the end plate **56** are the curved parts **59** and **60** each comprising substantially three quarters of the hollow frusto-conical elements **61**. The plate **57** at the opposite end has similarly formed therewith the partial conical parts **62** and **63**. The mid-plate **58** has at its ends the partial conical parts **64** and **65** respectively which in this case comprise approximately one-half of a frustrum of a cone. The parts **60** and **65**, for example, are connected by an integral web **66**, and the parts **65** and **63** by the web **67**, and the parts are similarly connected at the opposite side of the carrier so that there is a substantially integral rigid main frame having a generally rectangular shape with a cross web **58**. As previously noted this main frame need not be resilient or flexible and correspondingly may be made of any one of a variety of relatively cheap materials and in the most economical manner. The complete bottle carrying elements and the necessary resilience and ability to flex is provided by the addition and assembly to the main frame of appropriate auxiliary parts. For example, at the left end there is applied an appropriately shaped plate **68** secured to plate **56** by suitable means such as rivets **69**. At the ends of

the plate 68 are segments of a cone 70 and 71 complemental to the segments 59 and 60 respectively, the parts being so shaped as to provide in combination hollow frusto-conical elements with an open slit 61*a* similar to those previously described. The part 68 including end elements 70 and 71 is made of spring metal and provides the essential capacity of the conical elements to flex and expand and contract to engage releasably a bottle neck as previously described.

The opposite end of the carrier is similarly constructed. For the bottle carrying elements at the middle of the frame two appropriately shaped conical segments are applied as indicated at 72 and 73 these parts likewise being composed of spring metal. They may be secured in any suitable manner the means shown comprising in the case of segment 72 a wide tongue portion 74 which projects through a slit in the web 75 and is locked in place by a narrow tang 76 which is previously cut and pressed from the web 75 and in assembling the tang 76 is pressed down against the tongue 74. The segment 73 is similarly secured in place, and likewise the corresponding segments at the opposite side of the frame.

As heretofore noted the resilient connection between the opposed halves of the frusto-conical elements may be effected by auxiliary spring means. One example of such a means is illustrated in the bottle carrier of Figs. 12, 13 and 14. As in the device of Figure 1 the carrier is adapted for two bottles and is comprised in the main of two plates 80 and 81 having conical segments at their ends adapted to form the frusto-conical elements 82 and 83. Convenient comfortable means for manual gripping is provided by a cut-out opening 84 and bent over lower and upper flange parts 80*a*, 80*b*, 81*a* and 81*b*. The plates 80 and 81 and parts integral therewith may be composed of a material which has suitable rigidity and strength but need not be resilient or flexible per se. This function is provided by means of the elements 85 and 86 in the form of slit tubes of spring steel which are clipped over portions of the plates 80 and 81 as shown in the drawings and serve resiliently to clamp them together and accordingly to clamp together the opposed segments of the respective bottle grasping elements 82 and 83. With an arrangement like that just described the plates 80 and 81 may be composed of a relatively cheap easily shaped material such as plastic or plastic impregnated paper and if desired of a thermo setting type.

Figures 15 and 16 are fragmentary views showing a carrier generally similar to that of Figures 12 to 14 and with the parts composed of similar material, but having a different form of spring means for holding the conical segments in resilient releasably closed position. The spring means in this case comprises a crescent shaped member 87 extending through registering slots in the plate members 88 and 89 and serving to urge them together and correspondingly the opposed conical segments of the bottle grasping elements 90.

Figures 17 and 18 show the essential elements of another arrangement in which the two opposed plates 100 and 101 are hinged together at the top by a long pin 102 and are urged together by a long split tube 103 of spring metal the lower part of which provides a rounded surface for a comfortable hand grip. The plates 100 and 101 may of course be of any suitable material providing sufficient strength and rigidity.

Figures 19 and 20 show still another form in which the opposed plates 105 and 106 may be integral and connected together at the top as indicated at 107. An opening 108 is provided to receive the fingers of the hand and preferably flange parts 105*a* and 106*a* are bent out to provide a flat more comfortable grip. The sides 105 and 106 are urged together by the long split tube 109 of spring metal and upon application to bottles the sides swing apart sufficiently about a line corresponding substantially to the connection 107.

In the form of Figs. 21 and 22 the plates 110 and 111 are hinged together at 112 similarly to the form of Figs. 17 and 18. In bottle carrying position they are held together by a latch member 113 which in cross section has a shape substantially like that shown in Figure 22. It preferably is made of material adapted to flex such as spring steel. By spreading the sides a small distance it may be twisted into the assembled position through the hand hole 114 and then moved upwardly into the locking position shown in Fig. 21. The lower position is limited by suitable means such as by providing the shoulder 115 in the hand hole 114. The sides of the latch member 113 are inclined outwardly from each other at the top to provide a V-notch 116 and the upper edges are bent out horizontally to provide flat ledges 117. In assembling the carrier to bottles the latch may be moved down to the position shown in broken lines in Figure 22 by applying finger pressure to the ledges 117. This brings the wider upper mouth portion of the V-notch 116 of the latch opposite the edges 119 of the plates 110 and 111 permitting the plates and correspondingly the opposed segments of the bottle grasping element 118 to separate and receive the enlarged upper neck portion of a bottle. Lifting up on the latch 113 moves it into the locking position shown. If desired the capacity of the sides of the latch 113 to flex outwardly may be utilized in part or wholly to enable the plates 110 and 111 to open to receive the bottle in the conical element 118 and thereafter to clamp the parts together into the bottle supporting position.

It will be seen that the foregoing description and the devices shown in the drawings comprise representative embodiments of the invention and that various other specific forms of container carriers may be provided within the principles of the invention and it is intended that all matter contained herein shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A bottle carrier embodying a hollow frusto-conical part with a diameter at the smaller upper end less than that of the enlarged neck portion of a bottle intended to be carried, said part having opposed sides resiliently connected and adapted to be flexed apart for the reception of the bottle neck by forcibly spreading the sides by relative axial insertion of the enlarged neck portion of the bottle and automatically to contract into position below said enlarged portion, said frusto-conical part having an open top and adapted to expose fully the top part of the inserted bottle.

2. A bottle carrier embodying a hollow frusto-conical part of stiff sheet material with opposed arc-shaped sides secured together along a side connection extending in the general direction of the axis of the conical part adapted to be resiliently flexed apart by the axial reception of a bottle neck through the larger open bottom end, the upper end of said part having a normal diameter less than that of the upper enlarged neck portion of a bottle for which the carrier is designed and adapted automatically to contract into position below said portion after insertion of the bottle.

3. A bottle carrier embodying a frame including a carrying handle, a plurality of botle supporting elements each comprising a hollow open top frusto-conical part with a diameter at the smaller upper end less than that of the enlarged neck portion of a bottle intended to be carried, said part having opposed sides resiliently connected and adapted to be flexed apart for the reception of the bottle neck and automatically to contract into position below said enlarged portion with the upper end of the bottle completely exposed.

4. A bottle carrier embodying a frame and a bottle supporting element connected thereto comprising a hollow open top frusto-conical part of stiff sheet material with opposed arc-shaped sides mounted for relative movement toward and away from each other and having thereby closed and open positions respectively, said

frusto-conical part having at its closed position a transverse diameter at the smaller upper end less than that of the upper enlarged neck portion of a normal bottle intended to be carried, said arc-shaped sides being flexibly held in normally closed position and adapted to be forcibly spread into open position by the axial insertion through the larger open bottom end of the upper enlarged neck portion of the bottle and then to close automatically below said neck portion for supporting the bottle.

5. A bottle carrier embodying a hollow open top split frusto-conical part having an outer open slot and arc-shaped sides the diameter at the smaller upper end between the opposed arc-shaped sides being normally less than that of the upper enlarged neck portion of a bottle intended to be carried, said sides being capable of being resiliently flexed apart by the axial reception of the bottle through the larger open bottom end of said conical part and to contract automatically into bottle supporting position below the enlarged neck portion with the upper end of the bottle completely exposed.

6. A bottle carrier embodying a plurality of hollow open top split frusto-conical elements each adapted to receive a bottle and each having an outer open slot and opposed arc-shaped sides resiliently connected together and adapted to be flexed apart, the upper smaller diameter of the element being less than that of the enlarged neck portion of the bottle intended to be carried, frame means including a handle portion connecting said elements, the opposed sides of the elements being adapted to be flexed apart by forcible downward axial engagement over the neck of the bottle and to contract about the bottle neck below the enlarged portion, and the bottle being releasable laterally through the slot by swinging the bottle angularly from the bottom thereby to wedge apart the opposed sides of the element.

7. A bottle carrier embodying a vertical plate section elongated horizontally, a vertically arranged hollow split frusto-conical bottle supporting element connected at each end of said section, each element being adapted to receive a bottle and each having an outer open vertical slot and opposed arc-shaped sides to be flexed apart by the axial reception through the larger open bottom end of the upper enlarged neck portion of a bottle intended to be carried and to contract automatically about the bottle neck below the enlarged portion, and the bottle being releasable laterally through the slot by swinging the bottle angularly outward from the bottom thereby to wedge apart the opposed sides of the element.

8. A bottle carrier embodying a frame, a plurality of bottle supporting elements mounted in spaced relation at the outer part of said frame, each element comprising a hollow open top split frusto-conical part having an outer open slot and opposed arc-shaped sides, the diameter at the smaller upper end between the opposed sides being normally less than that of the upper enlarged neck portion of a bottle intended to be carried, at least one of said sides being composed of resilient material and adapted to flex open to receive the bottle neck axially through the larger open bottom end of the conical part and to contract automatically into bottle supporting position about the bottle neck below the enlarged neck portion.

9. A bottle carrier embodying a frame having a generally triangular shape in horizontal plan, a handle extending from the upper part, a bottle supporting element secured at each of the three points of the said frame, each element comprising a hollow split frusto-conical part having a vertical open slot and opposed arc-shaped sides, said sides being resiliently connected and adapted to be flexed apart for the reception of the upper enlarged neck portion of a bottle intended to be carried and to contact automatically into bottle supporting position below said enlarged portion.

10. A bottle carrier comprising a pair of horizontally elongated plates arranged in face to face parallel relation, said plates each having connected thereto an opposed arc-shaped segment of a cone said segments being arranged in an opposed pair and adapted to form conjointly a hollow frusto-conical bottle supporting part with an outer open vertical slot between them, and a slit tube of spring material arranged with the pair of plates extending flat-wise in opposed relation into the tube through said slit, said plates being adapted to be wedged apart against the flexible gripping resistance of said tube by the axial insertion of the upper enlarged neck portion of a bottle to be carried into the lower open end of said conical part, and to close the plates and cause the said conical part to contract about the bottle neck below said enlarged neck portion.

11. A bottle carrier embodying a supporting frame part and a bottle supporting part connected thereto comprising a hollow frusto-conical element with opposed arc-shaped members providing a slot at a point in the periphery between opposed ends of the arc-shaped members, said members being secured together and to the frame part along a side edge of the cone peripherally spaced from said slot, said members being flexibly held normally in closed bottle neck engaging position and adapted to be spread into open position by the relative axial movement into the larger open end of the cone of the upper enlarged neck portion of the bottle and then to close automatically below said neck portion for supporting the bottle.

12. A bottle carrier embodying a supporting handle part, and a bottle supporting part extending laterally from said handle part, comprising a hollow open top frusto-conical element with opposed arc-shaped members secured together and to the handle part along a side edge of the cone, said members providing a vertically extending slot between opposed ends of the members peripherally opposite to said side edge connection to the handle, said members being flexibly held normally in closed bottle neck engaging position and adapted to be spread into open position for release of the bottle by swinging of the bottom portion away from said handle and substantially in the general plane of said handle.

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