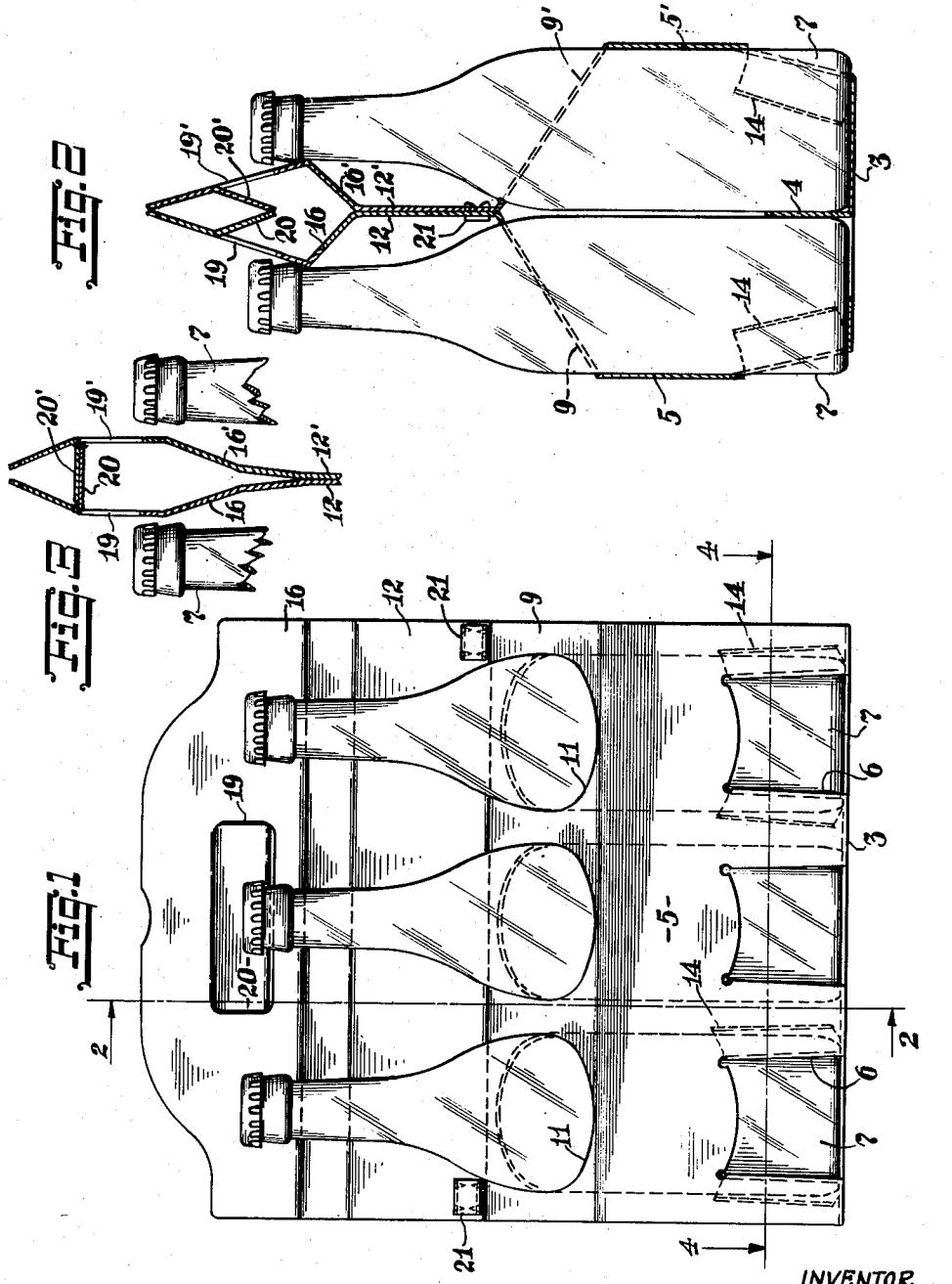
Sept. 19, 1950 M. W. KEITH 2,522,950

BOTTLE-CARRYING CARTON

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BOTTLE-CARRYING CARTON

Filed Dec. 19, 1946 2 Sheets-Sheet 2

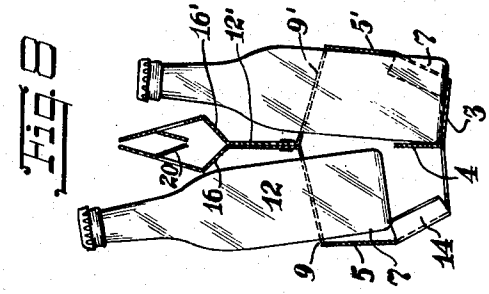


FIG. 8

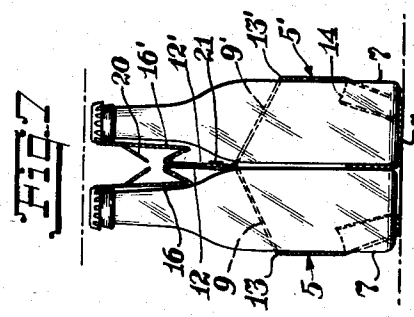


FIG. 7

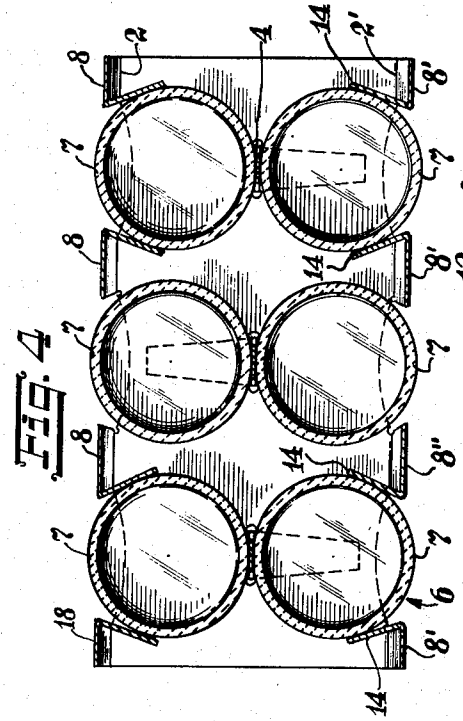


FIG. 4

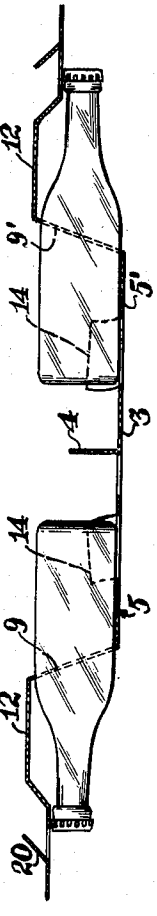


FIG. 5

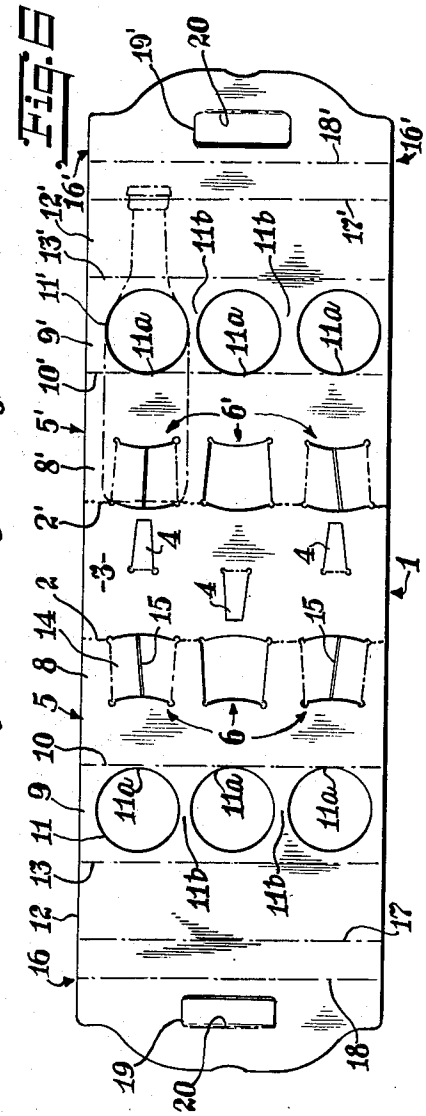


FIG. 3

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BOTTLE-CARRYING CARTON

Margaret W. Keith, New York, N. Y.

Application December 19, 1946, Serial No. 717,209

3 Claims. (Cl. 224—45)

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This invention relates to improvements in bottle-carrying cartons and particularly to bottle-carrying cartons formed of a strip of cardboard or like sheet material.

One of the objects of my invention is to produce a bottle-carrying carton from a strip of cardboard or like material which will be provided with creases forming an uncreased bottom with connected wall sections, inwardly-extending top sections and central sections, and heel-engaging apertures in the wall sections adapted to permit the positioning of bottom creases in planes extending secantly of the bottoms of the bottles and to position the wall sections in upwardly and outwardly inclined planes. Such positioning of the wall sections will cause them in the erected position of the carton to provide an inward wrapping of said wall sections about the bodies of bottles below the conoidal portions or neck sections of such bottles, which wrapping will be tightened by a wrapping movement of the said wall sections upon a lifting through the connected central member of the carton. At the same time the upper edges of said wall sections will have an inward movement to produce an inward movement of the inwardly-extending top or cover sections which have body-engaging apertures preferably of substantially circular conformation and having their inner edges spaced from the central sections to produce a spacing ridge which causes the rows of bottles to be spaced from and held in slightly tilted relationship to each other, thus facilitating the unloading and loading of bottles through the body gripping apertures by providing within the cartons and between the rows of bottles a bottle tilting space which is desirable in unloading or loading movements, and said bottle-gripping apertures are, upon such lifting, tiltable upwardly to engage a portion of the bodies of bottles carried in the carton at a plane just below the conoidal or neck portions thereof. Said inward wrapping movement of the walls will, upon lifting of the carton, provide a tight package and in combination with the tilting of the body-gripping apertures in the top or cover section will cause all the bottles to be independently gripped and locked within the carton, while permitting ready release of such grip and an unloading of the bottles through such body-gripping apertures by a direct upward pull on the upper part of the bottle per se.

Still another object of my invention is to provide a bottle-carrying carton comprising bottom side wall and central sections having heel-aperture edges in the side wall sections provided with

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inwardly bent integral flaps which reinforce the wall structure, and to this end to provide apertures having rectilinear edges to enable such flaps to be hingedly connected thereto.

Another object of my invention is to provide a carton construction having heel apertures provided with inturned flaps hinged by creases to the edges thereof, severed from the adjacent sections at top and bottom and severed from each other by cutting on a bias to a perpendicular erected at the middle of the apertures, whereby I provide bottle-separating elements and also bottle-abutting elements at the ends of the carton having increased inward extension.

Another object of my invention is to form the edges of said apertures of straight lines inclined toward each other to closely conform with the portions of the bottles contacting therewith and also to enable the hinging thereto of flaps having extended bottom edges which engage or rest upon the bottom of the carton and thus not only reinforce the walls but assist in strengthening the carton structure when in erected condition.

Still another object of my invention is, in a carton of the character specified, to provide a handle for the carton having handle apertures provided with a handle opening and with adjacent hinged flaps connected at the upper edges of the opening and movable upwardly beneath each other to produce a handle-ledge of a width equal to the width of the flap, or in the alternative to provide double thicknesses of the material at the handle openings.

Still another object of my invention is to provide a construction in which the handles may be lowered between the bottles.

Still another object of my invention is to provide a carton construction which may be filled or loaded in either erected or knock-down strip positions and which if loaded in its flat strip condition may thereafter be erected and fastened to permit subsequent withdrawal of the bottles through the engaging apertures by a direct upward pull when the carton is in such erected and fastened condition.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to coact and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in which:

Fig. 1 is a view in side elevation of a carton

embodying my invention with the handles in raised position;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary section showing the handle moved into my preferred carrying position;

Fig. 4 is a transverse section on the line 4—4 of Fig. 1 looking in the direction of the arrows;

Fig 5 is a view in section of a carton showing the carton in a position for loading from inside or in knock-down position and having the top flanges bent upwardly to receive the bodies of the bottles;

Fig. 6 is a view in plan of a strip of cardboard having creases and apertures to permit the making of a carton shown in Figs. 1 to 5, inclusive;

Fig. 7 is a section similar to Fig. 2 showing the handle flaps lowered with the bottles gripped in the carton in the body-gripping apertures and the side members tightly wrapped about the bottles; and

Fig. 8 is a view showing the central members lowered to move the side members outwardly and to release the grip of the apertures from the bottles to permit unloading by direct upward withdrawal of such bottles.

Referring now to these drawings which illustrate a preferred embodiment of my invention, 1 indicates a strip of relatively rigid and creasable material suitable for erection into a bottle-carrying carton for double rows of bottles and preferably is composed of pasteboard or reinforced paper creased to produce a bottom 3, with upwardly-extending wall sections 5—5', inwardly extending top sections 9—9' and upwardly extending central sections 12—12' hingedly connected thereto. As shown, the strip 1 (see particularly Fig. 6) is provided at its middle portion with parallel creases 2—2' adapted, when the material is bent at an angle along the same, to provide the carton bottom 3 which, as shown, is provided with struck-up separating tongues 4. The creases 2—2' are spaced apart a distance less than the width of the diameters of the bottles to be carried thereby and extend secantly of the bottoms of such bottles. Side wall sections 5—5' have hinged connections with the bottom 3 and are movable about the creases 2—2' as axes at an angle to the bottom portion. The side sections 5—5' are each provided with apertures 6—6' adapted to permit a segmental portion 7 of the heel of the bottle to project therethrough so that the creases 2—2' may be positioned to extend secantly of the bottoms of the bottles and inwardly of the outer sides of the bottle-bodies so that the portions 8—8' of such side members at opposite sides of such heel apertures extend upwardly and outwardly in an inclined relationship to the bottom 3 and to the creases 2—2' thereof by which said sections are hinged to said bottom 3. The said members 5—5' extend upwardly and outwardly to a horizontal plane below the conoidal or neck sections of the bottles and the positioning of the bottom creases and wall sections will cause them, upon a lifting of the carton through the connected central member, to produce an inward tight wrapping movement of said wall sections about the bodies of the bottles below said conoidal portions or neck sections thereof, and upon a reverse or downward movement of the central section to release the bodies of the bottles from such tight wrapping engagement by the carton sections. The inwardly extending top sections 9—9' are hingedly connected at their outer edges by creases

10—10' to the upper edges of the side wall sections and upon said wrapping and unwrapping movements of the side members move inwardly and outwardly therewith. The sections 9—9' are provided with bottle-gripping apertures 11—11' of circular conformation adapted to closely fit the bodies of the bottles at the cylindrical portions below the necks thereof and said sections 9—9' have hingedly connected at the inner edges thereof central abutting sections 12—12' by creases 13—13'. Upon a lifting movement through the central members 12—12' the top members 9—9' will be caused to have an upwardly pivotal or tilting movement about the creases 13—13' and will move into an upwardly inclined plane, whereupon the bodies of the bottles will be tightly gripped and fastened while the carton wall portions, and particularly the side-wall sections 5—5', will have a wrapping action about the bodies of the bottles, thus producing an extremely tight package in which the stress applied on the central sections 12—12', due to a lifting of the carton, will, as aforesaid, cause the members 9—9' to have a pivotal or tilting movement and the circular apertures therein will be somewhat deformed so that the edges of such apertures will tightly grip the bodies of the bottles inserted therein.

In the preferred embodiment of my invention, the edges 11a of the bottle-gripping apertures 11—11' in the top members are arranged in tangential relationship to the creases 10—10' and these apertures are preferably spaced from each other by the narrow spacing portions 11b so as to separate and space the bottles from each other at the upper portion of the bodies thereof while the bottom portions of the bottles are spaced by the heel engaging apertures 6.

In the preferred embodiment of my invention, the heel-engaging outside apertures 6 are provided with inwardly bent integral flaps 14 which function as bottle separating elements and also bottom abutting elements at the ends of the carton. In the preferred form of my invention, the integral inwardly bent members 14 are separated from each other by a line of cut 15 extending on a bias to a perpendicular to the bottom portion erected at the middle of the apertures. This form of cutting increases the inward extension of the flaps 14. As illustrated, the side edges of the apertures 6 are rectilinear and formed between suitable perforations while the top and bottom portions thereof are downwardly arcuate and also extend between such perforations.

In said preferred form of my invention, the central members 12—12' have hingedly connected thereto angular handle sections 16—16'. The handle sections are so hingedly connected to the central section by creases 17—17' and are themselves creased at 18—18' to produce an angular handle section construction. Such angular handle construction is provided with handle apertures 19—19' provided at their outer edges with flaps 20—20' adapted when moved into horizontal position to extend beneath each other within the angular handle section 16, and thus to produce a wide soft hand-hold or handle ledge of a width equal to the width of the said abutting flaps.

In operation the bottles may be inserted in the carton when the same is in a knock-down position shown in Fig. 5 or in the erected position shown in Figs. 1, 2, 4, 7 and 8. If the cartons are loaded in the position shown in Fig. 5, the members are moved into the erected position shown in Figs. 1

and 2 and connected by suitable fastening members 21, whereupon a tightly wrapped package will be produced. A lifting movement on the handles through the central members 12 will then produce a further tightening of the wrapping of the side and top members about the bottles so as to produce a still more tightly wrapped packages and also an increased gripping of the bodies of the bottles by the apertures 11—11'. When, however, it is desired to remove a bottle from the carton, the central members are lowered to cause a releasing of the gripping apertures in the top members.

In unloading by hand, in which the bottles are removed by an outwardly arcuate movement, such releasing may be accomplished by a slight depression of the central members, while if it is desired to move the bottles in paths perpendicular to axes thereof, the central members should be depressed until the top members approach a horizontal position, whereupon the side members will move outwardly and the bottle wil be completely released so as to be readily removed from the carton as shown in Fig. 8.

It is noted that in view of the shape of the fastened carton and the positioning of the hinged sections thereof, the parts of the carton when unloaded, and particularly the central and top members, will spring back to the position in which the top members are inclined upwardly and the apertures therein are in bottle-gripping position, and if again loaded, as, for example, for the purpose of using the carton to return empty bottles, a lifting movement on the handle will cause a tight package with tightly gripped bottles to be produced.

Having described my invention, I claim:

1. A bottle-carrying carton comprising a strip of sheet material having a bottom section of lesser width than the diameters of two rows of bottles to be carried therein and formed between spaced parallel creases extending secantly of the bottoms of said bottles, wall sections adjoining opposite sides of said bottom section and having heel apertures extending upwardly from said bottom creases to permit extension therethrough of a segmental portion of the heels of said bottles to be carried, said wall sections being formed between said bottom creases and additional parallel creases and having upwardly and outwardly inclined portions disposed between the bodies of said bottles, said additional creases extending along a horizontal plane below and adjacent to the conoidal portions of said bottles, inwardly-extending top-sections adjoining opposite sides of said wall sections and having substantially circular apertures provided with edges engaging the bottle-bodies below said conoidal portions, abutting central sections connected with said top sections, means for connecting said central sections together, said outwardly-inclined carton sides being arranged, upon an upward lifting movement of the central sections, to have a wrapping action around the bodies of the bottles and said apertures in the top sections having an inward and tilting movement to grip the body portions of the bottles and to provide a tight package and upon a downward movement of said central section to produce an outward and reversely tilting movement to cause a release of the edges of said apertures from the bodies of the bottles, said cardboard of the wall section at said heel apertures being severed and bent inwardly along rectilinear creases forming the side edges of the apertures to provide double flaps adapted to function as bottle separators and end abutments within the carton, said double flaps being severed from the side wall at top and bottom and having a line of severance between the flaps disposed in a plane inclined to a perpendicular erected at the middle of the bottom to increase the extension of the flaps between the bottles within the carton.

2. A bottle-carrying carton comprising a strip of sheet material having parallel creases spaced from each other a distance less than the diameters of two rows of bottles to be carried therein to produce a bottom section, side-wall sections composed of lower inclined portions having heel apertures and inter-aperture parts connected with the bottom section at an obtuse angle to cause extension thereof upwardly between the curved surfaces of adjacent bottles in an inclined plane to the top of said heel apertures and vertical portions merging with said lower inclined portions and extending to a pair of parallel top-connecting creases, the cardboard at the heel apertures being severed and creased along substantially vertical lines and bent inwardly along said creases to form the side edges of the apertures and to provide double inwardly-extending flaps adapted to function as bottle separators and end abutments within the carton, said top-connecting creases extending along a horizontal plane below and adjacent to the conoidal portions of said bottles, a pair of inwardly-extending top-sections connected with said vertical portions of the side wall sections at said top-connecting creases to adjoin opposite sides thereof and extending to said meeting creases at the middle of the carton, abutting central sections connected with said top sections, and means for connecting said central sections together.

3. A bottle-carrying carton comprising a strip of sheet material having parallel creases spaced from each other to produce a bottom-section, side-wall sections composed of lower inclined portions having heel apertures and inter-aperture parts connected with the bottom section and extending to a pair of parallel top-connecting creases, said top-connecting creases extending along a horizontal plane below and adjacent to the conoidal portions of said bottles, a top portion composed of a pair of inwardly and upwardly inclined top sections, each formed between said pair of parallel top-connecting creases and an additional pair of meeting creases spaced from said top-connecting creases a distance greater than the diameter of the body portion of one of the bottles to be carried in the carton, each of said inwardly and upwardly inclined top sections having individual substantially circular apertures and inter-aperture bottle-spacing portions disposed between said apertures to separate and space individual bottles from each other, said apertures being provided with edges tightly engageable in the upwardly-inclined position of the top sections with each of the individual bottle-bodies at the widest portions thereof, abutting central sections connected with said top sections at said meeting creases, and means connecting said central sections together, said individual substantially circular apertures being also spaced from said meeting creases and said central member to provide a bottle row spacing and stiffening portion adapted on depression between the bottles to cause said inwardly and upwardly-inclined top sections to assume a horizontal position to release the tight engagement of the edges of the apertures with the bottles and tilt the individual

bottles outwardly, whereby unloading and loading of bottles independently of each other is facilitated.

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