June 23, 1942. C. M. FRANKS ET AL 2,287,731

COMBINED BOTTLE LIFTER AND CARRIER

Filed Oct. 20, 1941 2 Sheets-Sheet 1

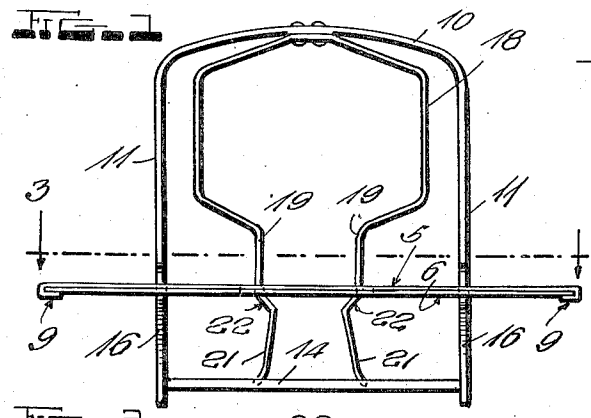


FIG. 1

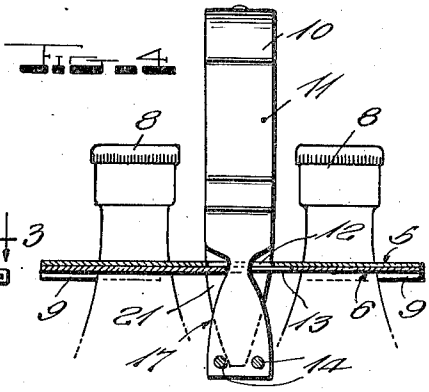


FIG. 4

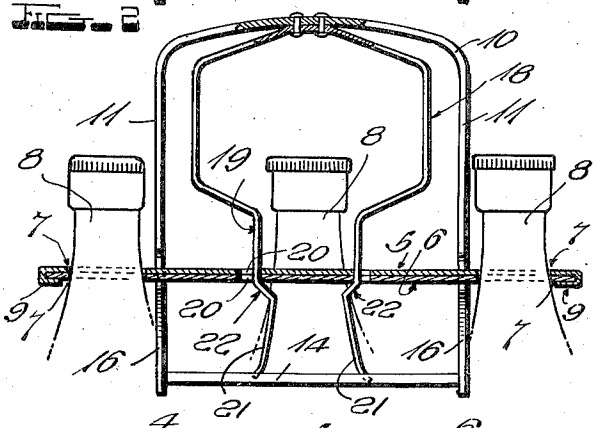


FIG. 2

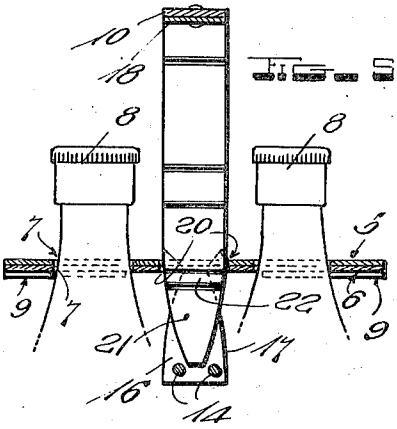


FIG. 5

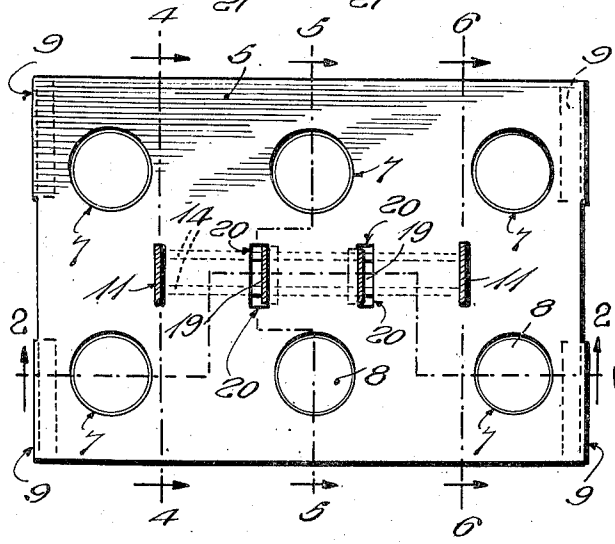


FIG. 3

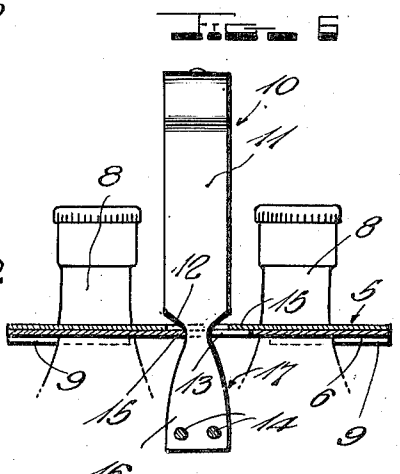


FIG. 6

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COMBINED BOTTLE LIFTER AND CARRIER

Filed Oct. 20, 1941 2 Sheets-Sheet 2

FIG. 7

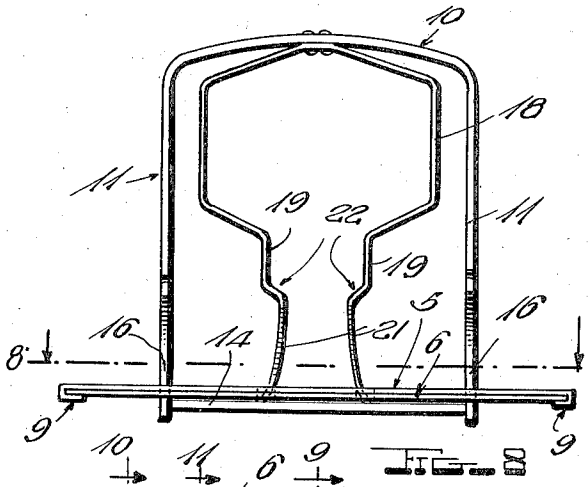


FIG. 10

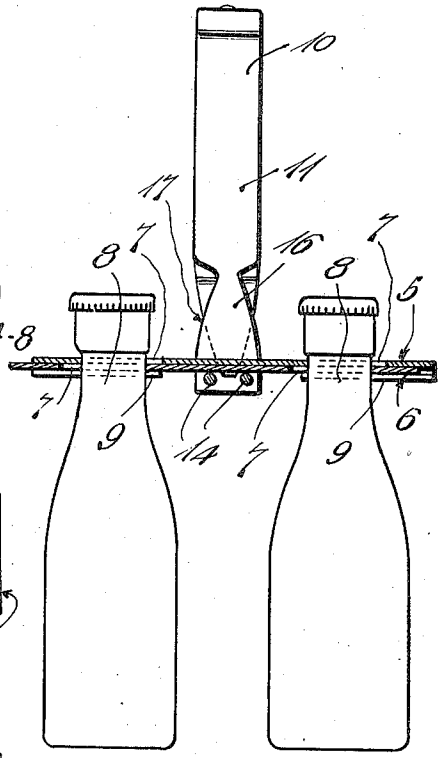
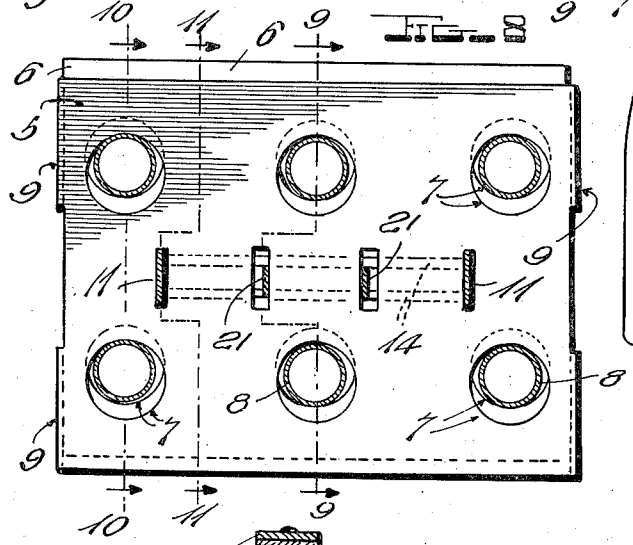


FIG. 8



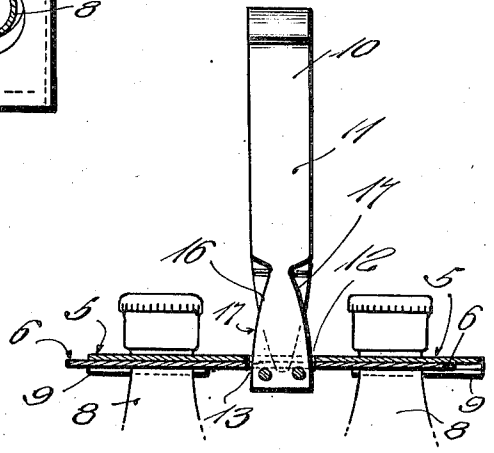


FIG. 9

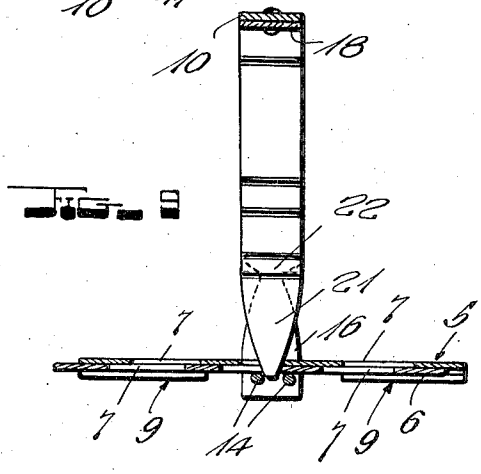


FIG. 11

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COMBINED BOTTLE LIFTER AND CARRIER

Charles M. Franks and William A. Nightingale,
Evansville, Ind.

Application October 20, 1941, Serial No. 415,814

12 Claims. (Cl. 294—87)

This invention relates to devices for lifting and carrying liquid containers and more particularly to a device especially designed for lifting and carrying either full or empty beverage dispensing bottles.

The object of the invention is to provide a comparatively simple and inexpensive device of the character described adapted to be positioned over a standard case or crate of beverage dispensing bottles and by means of which a predetermined number of filled bottles may be conveniently lifted from the case and carried to a refrigerator for cooling or icing.

A further object of the invention is to provide a combined bottle lifter and carrier including a supporting handle and coacting relatively stationary and movable plates carried thereby and having registering openings formed therein for the reception of the necks of the bottles to be removed from a case, means being provided for actuating the movable plate to grip the bottle necks thereby to permit the removed bottles to be transported from place to place without danger of breakage.

A further object is to provide means for locking the bottle gripping means in inoperative position to permit the insertion of the necks of the bottles within the receiving openings when the supporting handle is depressed and means for successively releasing said locking means and actuating the gripping means to grip the neck of a bottle when an upward pull is exerted on said supporting handle.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

In the accompanying drawings forming a part of this specification and in which similar numerals of reference indicate corresponding parts in all the figures of the drawings:

Figure 1 is a side elevation of a combined bottle lifting and carrying device constructed in accordance with the present invention showing the device in position to be placed over the bottles in a crate or case for the purpose of removing a predetermined number therefrom,

Figure 2 is a similar view, partly in section, showing the necks of the bottles extending through the openings in the supporting plates,

Figure 3 is a horizontal sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 3,

Figure 5 is a similar view taken on the line 5—5 of Figure 3,

Figure 6 is a transverse sectional view on the line 6—6 of Figure 3,

Figure 7 is a side elevation showing the supporting handle elevated to cause the movable plate to grip the neck of a bottle,

Figure 8 is a horizontal sectional view taken on the line 8—8 of Figure 7,

Figure 9 is a transverse sectional view taken on the line 9—9 of Figure 8,

Figure 10 is an end elevation, partly in section, showing the manner of gripping the bottle necks, and

Figure 11 is a similar view taken on the line 11—11 of Figure 8.

The combined bottle lifting and carrying device forming the subject-matter of the present invention comprises upper and lower relatively stationary and movable plates 5 and 6 having registering openings 7 formed therein and adapted to receive the neck of a beverage bottle, indicated at 8. The opposite ends of the upper plate 5 are bent inwardly over the lower plate 6 to form guide flanges 9 which serve to maintain the plates in cooperative relation to each other at all times.

Associated with the supporting plates and mounted for vertical movement therethrough is a supporting handle 10, the side members 11 of which extend through registering transverse slots 12 and 13 formed in the upper and lower plates and have their lower ends rigidly connected by spaced transverse rods 14 which by engagement with the adjacent surface of the lower plate 6 serve to limit the upward movement of the supporting handle. The end walls of the slots 12 and 13 are offset with respect to each other so that one end wall of the upper slot 12 will project over and partially overlap the lower slot 13 while one end wall of the lower slot 13 overlaps the adjacent end wall of the upper slot 12, as indicated at 15 in Figure 6 of the drawings. The lower ends of the side members 11 of the supporting handle are provided with grip actuating members 16, the opposite side walls of which are upwardly tapered, as indicated at 17, and adapted to bear against the overlapping wall 15 of the lower slot 13 when an upward pull is exerted on the operating handle thereby to shift the lower plate 6 laterally to reduce the size of the openings 7 and thus cause the walls of said openings to firmly grip the neck of a bottle and prevent accidental displacement thereof when carrying bottles from place to place.

Associated with the handle and rigidly secured to the top thereof in any suitable manner

is a locking device 18 for holding the openings 7 in the upper and lower plates in registration with each other when positioning the device over a case containing filled bottles. The locking device 18 is preferably of substantially inverted U-shape construction to form spaced resilient arms 19 which extend through registering slots 20 in the plates 5 and 6 and have their lower diverging ends 21 tapered and terminating adjacent the stop rods 14. The metal constituting the resilient arms 19 is bent inwardly to form offset shoulders 22 adapted to spring over adjacent walls of the slots 20 when downward pressure is exerted on the operating handle and thus hold the openings 7 in the supporting plates in alinement with each other so as to permit the necks of the bottles to extend therethrough. When an upward pull is exerted on the handle, the shoulders 22 will be moved to released position so as to permit the members 16 to actuate the movable plate to grip and hold the bottles when carrying the same from place to place. It will be understood that the openings 7 in the supporting plates will be spaced to agree with the spacing of beverage bottles in a standard case or crate so that, when the device is positioned over the bottles, the necks of a predetermined number of said bottles will project through said openings.

In operation the handle 10 is pressed downwardly so as to cause the openings in the stationary and movable plates to register, and in which position said plates will be held by the shoulders 22. The device is then positioned over a case of bottles with the necks of the bottles extending within the openings 7 and an upward pull exerted on the handle 10. The initial upward movement of the handle serves to first release the shoulders 22 from engagement with the walls of the slots 20 and a further upward movement thereof causes the inclined walls of the members 16 to bear against the projecting walls 15 of the slots 12 and 13 and move the lower plate 6 laterally with respect to the upper plate thereby decreasing the diameter of the openings 7 and causing the walls of said openings to firmly grip the necks of the bottles, the stop rods 14 by engagement with the lower plate serving to limit the upward movement of the supporting handle. The bottles may then be conveniently carried to a refrigerator and placed therein for the purpose of cooling or icing the beverage.

While the device is particularly designed for carrying filled bottles, it can also be used with equally good results for carrying empty bottles. It will, furthermore, be understood that, while we have shown the device adapted for carrying six bottles, said device may be constructed to carry any desired number of bottles without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. A device of the class described including relatively stationary and movable plates having registering openings therein adapted to receive the neck of a bottle, and a supporting handle movable through the plates and provided with means coacting with said plates for actuating the movable plate to grip the bottle neck when an upward pull is exerted on the handle and to release said movable plate from gripping engagement with the bottle neck when the handle is depressed.

2. A device of the class described including relatively stationary and movable plates having registering openings therein adapted to receive the neck of a bottle, and a supporting handle movable through slots in the plates and provided with means coacting with the walls of said slots for shifting the movable plate laterally to cause the walls of the openings to grip the bottle neck when an upward pull is exerted on the handle and to release said movable plate from gripping engagement with the bottle neck when the handle is depressed.

3. A device of the class described including relatively stationary and movable plates having registering openings therein adapted to receive the neck of a bottle, a supporting handle movable through the plates, means carried by the handle for locking the walls of the openings in the plates in registration with each other, and means carried by the handle and cooperating with slots in the plates for causing the walls of said openings to grip the bottle neck when the locking means is released.

4. A device of the class described including relatively stationary and movable plates having registering openings therein adapted to receive the neck of a bottle, a supporting handle movable through slots in said plates, a locking device carried by the handle and coacting with other slots in the plates for holding the openings in registration with each other, and means for successively releasing the locking device and shifting the movable plates laterally to cause the walls of the openings in said plates to grip the neck of a bottle when an upward pull is exerted on the handle.

5. A device of the class described including relatively stationary and movable plates having registering openings therein adapted to receive the neck of a bottle and provided with spaced transverse slots, the end walls of which are offset with respect to each other, a supporting handle movable through said slots, there being auxiliary slots formed in the plates between the first-mentioned slots, a locking member carried by the handle and provided with offset shoulders adapted to engage the walls of the auxiliary slots for holding the openings in said plates in registration with each other, and means carried by the handle and engaging the offset end walls of the first-mentioned slots for shifting the movable plate laterally to cause the walls of the openings to grip the neck of a bottle when an upward pull is exerted on said handle.

6. A device of the class described including relatively stationary and movable plates having registering openings formed therein adapted to receive the neck of a bottle and provided with main and auxiliary transverse slots, a handle slidably mounted within the main slots and including side members, stop rods connecting the lower ends of said side members, a locking device carried by the handle and provided with resilient arms extending through the auxiliary slots and having offset shoulders adapted to engage the walls of the auxiliary slots for holding the openings in the plates in registration with each other, said side members of the handle being provided with upwardly tapered portions adapted to engage the walls of the main slots for shifting the movable plate laterally to cause the walls of the openings in said plate to grip the neck of a bottle when the locking device is released.

7. A device of the class described including relatively stationary and movable plates, one of which is provided with inturned flanges forming a guide for the other, said plates being provided

with main and auxiliary transverse slots and having openings formed therein adapted to receive the neck of a bottle, a handle having side portions slidably mounted within the main slots, stop rods connecting the lower ends of said side members, a locking device secured to the handle and provided with resilient arms having tapered terminals and provided intermediate their ends with offset shoulders adapted to engage the walls of the auxiliary slots for holding the openings in the plates in registration with each other, and means carried by the side members of the handle and adapted to engage the end walls of the main slots for shifting the movable plate laterally to reduce the size of the openings and cause the walls of said openings to grip the neck of a bottle when an upward pull is exerted on the supporting handle.

8. A device of the class described including relatively stationary and movable plates having registering openings therein adapted to receive the neck of a bottle, a supporting handle mounted for vertical movement through said plates, a locking device carried by the handle and engaging said plates for holding the openings in registration with each other, and means carried by the handle and cooperating with said plates for first releasing the locking device and then shifting the movable plate laterally to reduce the diameter of the openings and cause the walls of said openings to grip the neck of a bottle when an upward pull is exerted on the supporting handle.

9. A device of the class described including relatively stationary and movable plates having main and auxiliary transverse slots formed therein and provided with openings adapted to receive the neck of a bottle, an operating handle including side members having their lower ends provided with upwardly tapered portions coacting with the end walls of the main slots, and a locking device secured to the handle and having spaced spring arms extending through the auxiliary slots with their lower ends deflected laterally and tapered downwardly, said spring arms having their intermediate portions bent laterally to form offset shoulders for engagement with the walls of the auxiliary slots, the tapered portions of the side members of the handle by engagement with the end walls of the main slots serving to shift the movable plate laterally to cause the walls of the openings to grip the neck of a bottle when an upward pull is exerted on said handle.

10. A device of the class described including relatively stationary and movable plates having main and auxiliary transverse slots formed therein and provided with registering openings adapted to receive the neck of a bottle, a supporting handle having side members operating within the main slots, a locking device carried by the handle and cooperating with the walls of the auxiliary slot for locking the openings in registration with each other when a downward pressure is exerted on the handle, and means carried by the side mmebers of the handle and cooperating with the end walls of the main slots to first release the locking means and subsequently shift the movable plate laterally to cause the walls of said openings to grip the neck of a bottle when an upward pull is exerted on the handle.

11. A device of the class described including relatively stationary and movable members having registering openings adapted to receive the neck of a container, and a supporting handle provided with means coacting with said members for actuating the movable member to grip a container neck when an upward pull is exerted on the handle and to release said movable member from gripping engagement with the container neck when the handle is depressed.

12. A device of the class described including relatively stationary and movable members having registering openings adapted to receive the neck of a container, a supporting handle for said members, means for locking the walls of the openings in registration with each other, and means carried by the handle and cooperating with said members for causing the walls of said openings to grip the container neck when the locking means is released.

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