Oct. 30, 1934. W. J. NORCROSS 1,978,955

CRATE

Filed March 30, 1932

FIG. 1.

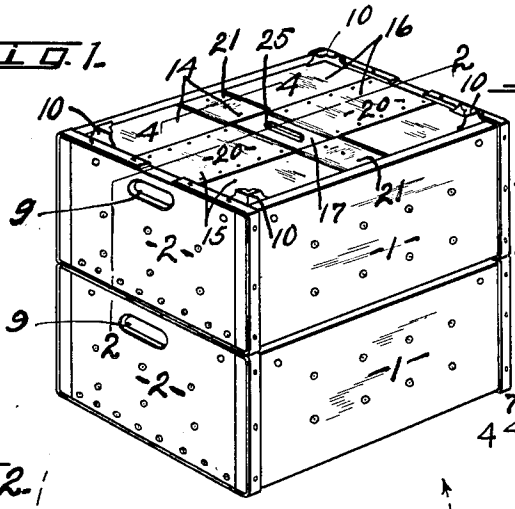


FIG. 3.

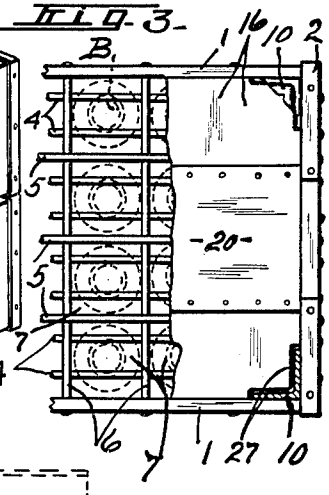


FIG. 2.

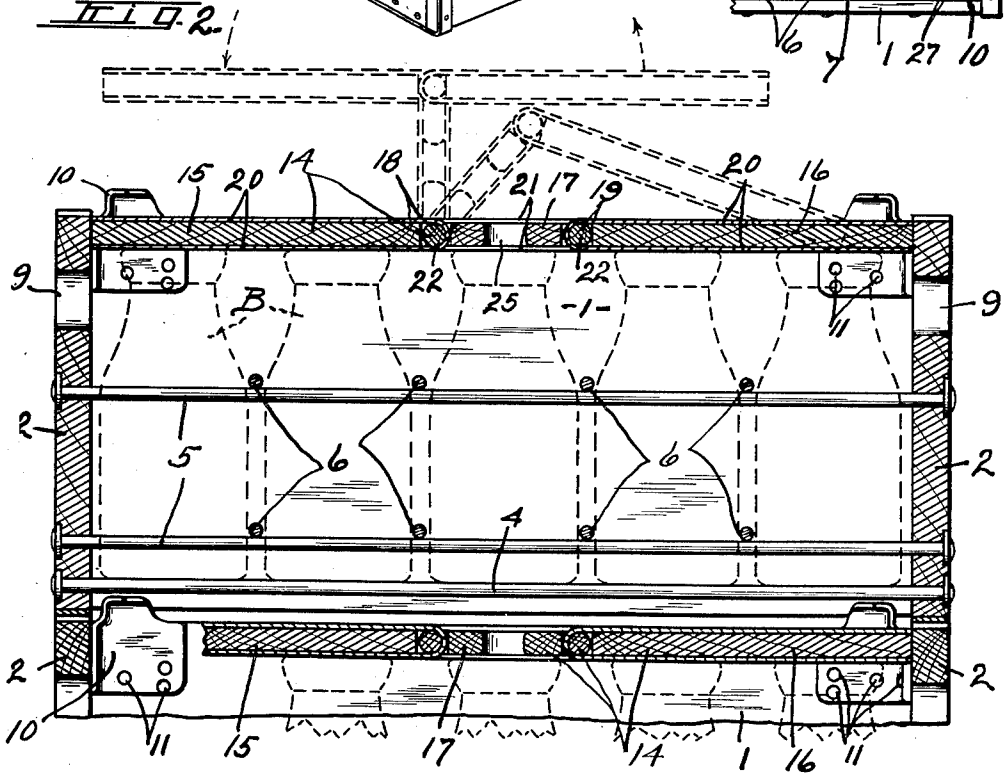
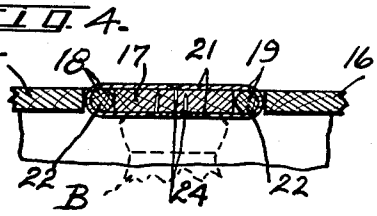


FIG. 4.



WITNESS

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CRATE

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2 Claims. (Cl. 217—57)

This invention relates to new and useful improvements in crates, and pertains more particularly to crates adapted to contain bottles of milk, cream or the like and which are often arranged one upon the other in stacks.

Crates of the above-mentioned class are exceptionally rigid and durable in construction having the end and side walls practically closed and imperforate and the bottoms more or less perforate, said bottoms being usually composed of wire mesh or a network of rods or metal strips adapted to maintain the bottles in the crates when in the upright position. This construction combines rigidity and durability with lightness, but at the same time, permits air to circulate upwardly through the crates and around the bottles.

It has been found, however, that when the crates are filled with bottles taken from a cooler and containing cooled milk, and stacked one upon the other, that warm summer air or inside heated air passing upwardly through the superposed crates, will quickly warm the bottles and the contents thereof to such a degree that it requires an excessive amount of ice or other artificial cooling medium to maintain the contents of the bottles in a cool sanitary condition.

It is an object of this invention to provide simple and inexpensive means for conventional milk bottle crates for preventing circulation of air through the crates so that the contents thereof, when moved from a cool into a relatively warm atmosphere will be maintained in the cooled sanitary condition for a maximum length of time without the use of artificial cooling means.

Another object of the invention is to provide deflector plates or covers for crates of the above-mentioned class which may be quickly and easily placed in position on the loaded crates or be removed therefrom.

A further object is to provide a cover or baffle plate for milk bottle crates which will readily permit free access to each end and the central portion of the crate so that bottles may be quickly and easily placed therein or removed therefrom without it being necessary to entirely remove the cover from the crate.

Other objects and advantages pertaining to the structure of the device and the form and relation of the parts thereof, will more readily appear from the following description taken in connection with the accompanying drawing in which:—

Figure 1 is a perspective view of a pair of conventional milk bottle crates arranged in stacked relation with my novel cover or baffle plate in operative position thereon.

Figure 2 is an enlarged longitudinal vertical sectional view taken in the plane of the line 2—2, Figure 1.

Figure 3 is a plan view, partly in section, of one end of a milk bottle crate and the adjacent portion of my novel cover.

Figure 4 is an enlarged detail sectional view taken on line 4—4, Figure 1.

The crates shown in the drawing are of the conventional type for containing milk bottles, each consisting of substantially imperforate closed side walls 1 and end walls 2 secured together at their ends in any well-known manner to form a rectangular frame. One open side of the frame is provided with a plurality of, in this instance eight, bottom rails 4 which extend longitudinally of the crates, with their ends secured in a respective end portion 2 of the crate. These bottom rails 4 are arranged in pairs in spaced relation transversely of the crate, each pair being adapted to support a row of bottles as B.

Above the bottom rails 4 is positioned two rows of lontigudinally extending spacing rails 5 arranged in vertical spaced relation and which cooperate with a like number of rows of transversely disposed rails 6 which extend at right angles to the longitudinal rails 5, with the rods of each row arranged in longitudinal spaced relation for cooperating with the rods 5 in forming individual bottle-receiving pockets 7.

Each end portion 2 of the crates is provided with a finger slot 9 near the upper edge thereof adapted to assist the user in handling the crates by providing convenient means whereby the crate may be grasped with the hands. At each corner of the upper open side of the crate is positioned a suitable guide ear 10 composed of sheet metal or the like, and secured to the adjacent side and end walls of the crate by rivets 11 or their equivalent.

The guide ears 10 extend upwardly a relatively short distance above the plane of the upper edge of the crate with their upper ends terminating a short distance inside of the inner marginal edge thereof for the purpose of extending a short distance within the bottom of the crate placed thereon for maintaining the crates in stacked relation one upon the other in the usual manner.

The cover 14 which comprises my invention, consists of three sections, two end sections 15 and 16 and an intermediate section 17, each of which is composed of wood, fiber or other suitable material. The combined length and the width of these sections are such that the cover will have an easy fit between the end and side

walls 1 and 2 respectively of the crate while the intermediate section 17 is so constructed that when the cover is on the crate, it will be positioned substantially midway between the end walls 2, and is of a length equal to or greater than the diameter of the bottles contained in the crate to permit the easy removal of the centrally located bottles from the crate or the placement thereof into the crate when the section 17 is in the open position, as will hereinafter more clearly appear.

Each of the end sections 15 and 16 is hingedly connected as at 18 and 19 to the adjacent side of the intermediate section 17. These hinges 18 and 19 comprise a central strap 20 and two end straps 21 arranged one at either side of the central strap 20. Each of the central straps 20 is preferably composed of relatively thin sheet metal formed U-shaped, with the legs thereof extending across the upper and lower faces of the respective end section 15 or 16 and secured thereto by rivets or other means to reinforce said end section, while the central or transverse portion of the strap is extended a short distance beyond the inner edge of the respective section to form a socket for receiving the hinge bolt 22 therethrough.

Each of the end sections 21 of the hinge is composed of sheet metal similar to the strap sections 20, and as illustrated in Figure 4, extends across the upper face of the intermediate cover section 17, with the ends thereof extended a short distance beyond the opposite edges of the cover section 17 and bent downwardly to form a recess for receiving the hinge bolts 22 and then bent inwardly towards each other along the underface of the cover section to which they are secured by nails or rivets 24. This hinge construction not only provides a very rugged durable hinge, but also one which reinforces the cover sections and permits the free movement of each section relative to the other, and at the same time, will maintain each section at substantially right angles to the adjacent cover section when the cover is in the open position to permit the ready access to the interior of the crate.

When in use, the cover 14 is placed over the upper end of the crate and rests upon and is supported by the bottles B, and it is obvious that it will prevent air circulating upwardly through the crate and around the bottle to a maximum degree and thus prevent air passing directly upwardly into the next crate positioned thereon.

When it is desired to gain access to the interior of the crate, one or the other of the end sections 15 or 16 of the cover may be withdrawn from beneath the respective guide ears 10 by grasping the intermediate section 17 at the slot 25 and rocking said intermediate section about one of the pivots 18 or 19 so as to elevate the opposite side of the intermediate section. If, for instance, it is desired to gain access to the end of the crate beneath the cover section 16, it is only necessary to rock the intermediate section 17 about the axis of the hinge 18, which will cause the hinge 19 and adjacent portions of the intermediate section 17 and end section 16 to swing about the axis of the hinge 18, as illustrated by dotted lines in Figure 2. This movement of the intermediate section will draw the outer edge of the end section 16 from beneath the guide ears 10 positioned at that end of the crate 1, after which the end section 16 may be rocked upwardly until the intermediate section assumes a vertical position, after which the end section 16 may be rocked about the hinge 19 until said section assumes a horizontal position over the opposite end section 15.

It is now evident that the bottles contained in that end of the crate over which the cover sections 16 and 17 were positioned, is now readily accessible for removing the bottles contained therein or for placing bottles in the crate. Likewise, the opposite end of the crate may be uncovered by the reverse movement of the intermediate section 17, that is, by first swinging said section about the hinge 19 to withdraw the end section 20 from beneath the guide ears 10 positioned at the left hand side of the crate after which the end section 20 may be moved to the horizontal position over the opposite end section 16, and it is obvious that the cover may as readily be returned to the closed position by the reverse operation.

Although I have shown and particularly described the preferred embodiment of my invention, I do not wish to be limited to the exact construction shown, as various changes in the form, size and relation of the parts thereof may readily be made without departing from the spirit of this invention, as set forth in the appended claims.

I claim:

1. In a crate adapted to contain a plurality of rows of bottles and having each corner thereof provided with inwardly extending guide ears, a cover for the crate adapted to extend beneath said ears to be releasably maintained in the closed position thereby and consisting of an intermediate section adapted to cover a single row of bottles and two end sections, and a double acting hinge connecting opposed sides of the intermediate section with a respective end section whereby the intermediate section and either of the end sections may be swung about the other end section as a pivot to permit the swinging end section to be withdrawn from beneath the respective guide ears and to expose the row of bottles covered by said intermediate section.

2. The combination with a crate of the class described having cover-retaining means associated therewith, of a cover for said crate consisting of two end sections adapted to move into holding engagement with a respective retaining means when in the closed position and an intermediate section, and a double-acting hinge connecting opposed sides of the intermediate section with a respective end section whereby the intermediate section and either end section may be swung about the other end section as a pivot from the closed position to the open position over said pivotal end section.

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