Jan. 26, 1954 E. G. HOCH 2,667,284

MILK BOTTLE CRATE

Filed Feb. 27, 1950

2 Sheets-Sheet 1

FIG 1

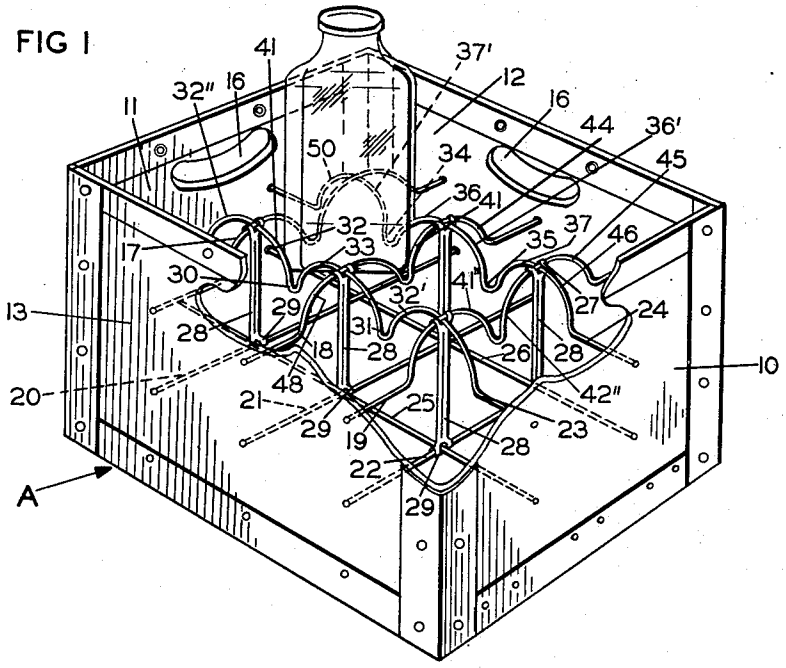
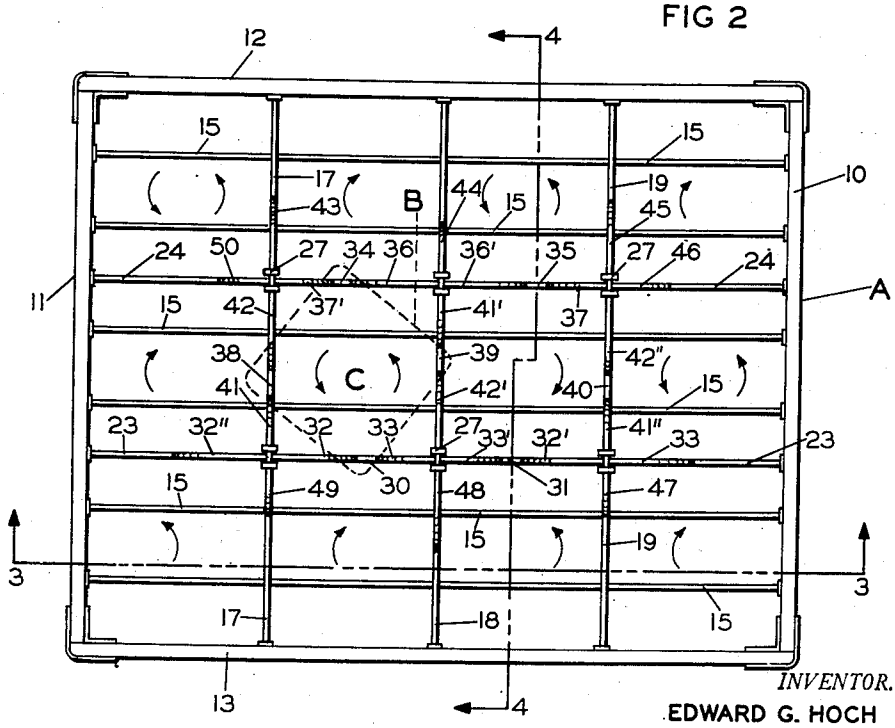


FIG 2



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FIG 3

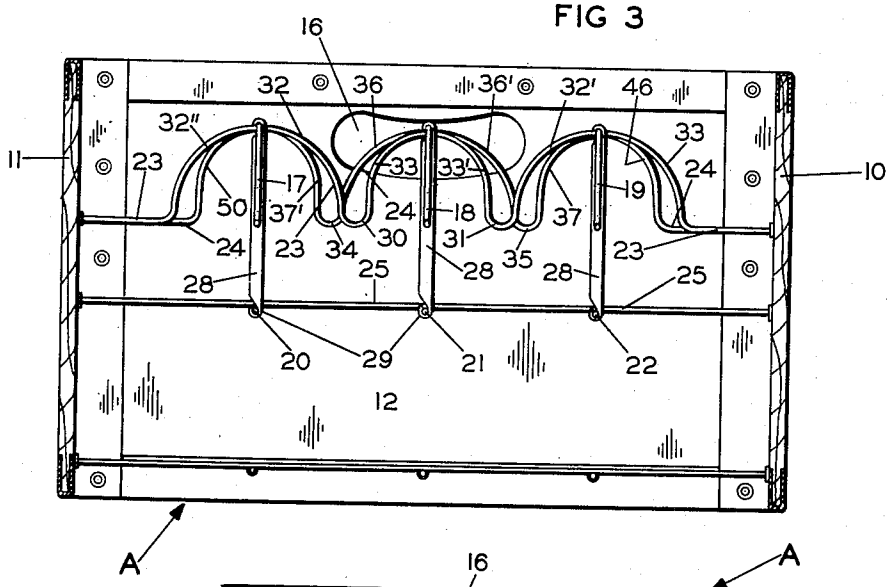


FIG 4

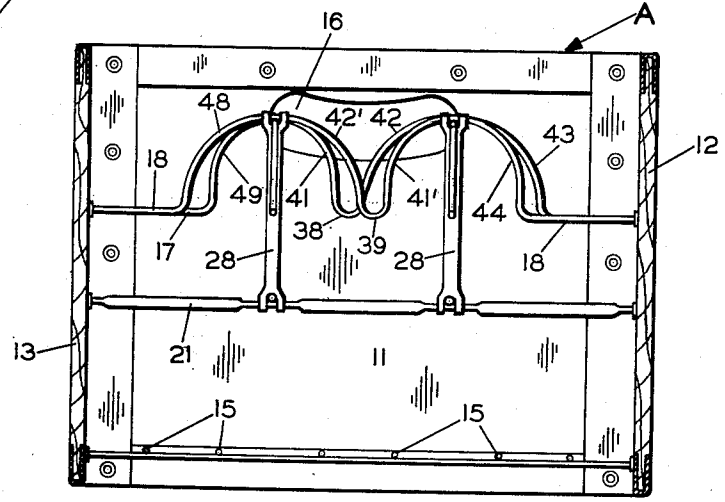
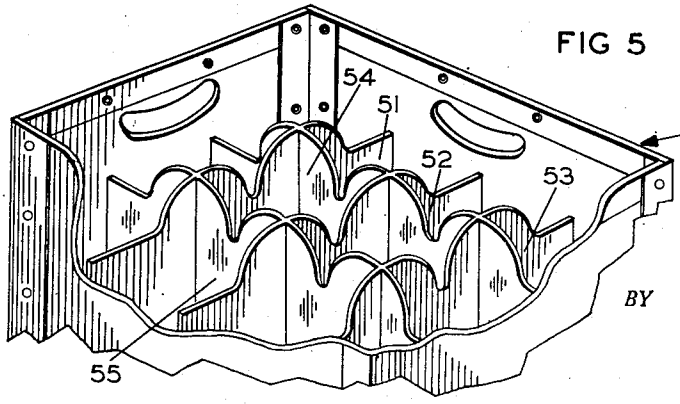


FIG 5



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MILK BOTTLE CRATE

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2 Claims. (Cl. 217—20)

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My invention relates to an improvement in a bottle crate and more particularly to a type having grid means which causes square or rectangular type bottles to automatically drop into the compartments or pockets of the crate, the construction also facilitating removal of the bottles.

Present day milk bottle crates, which receive both round and squared milk bottles, are divided into compartments by top dividers having scroll or slant depressions to facilitate entry or removal of the bottle into or from a compartment. The bottom of the scroll or slant depressions of the present day type formed on each side of the compartments are equally centered between the sides of the compartments, and when a square bottle is casually or quickly attempted to be placed in a compartment, the square bottle often assumes a position with the square corners of the bottle directly over the center of the depressions on the four walls of the compartments. In this position the bottle must be lifted slightly and rotated so that the sides of the bottle tend to be more or less parallel with the sides of the compartments or pockets in which position the squared bottle will be able to fall to the bottom of the compartment or pocket. This problem is more acute when two or more bottles are virtually thrown into the crate at one time.

In order to provide a crate which will remedy this situation it is a primary feature of my invention to provide top divider members in which the scroll or angle depression formed at the top of the sides of each of the compartments is offset from the depression opposite thereto. This construction produces on each of the four sides of the bottle receiving pocket a wide and narrow angle shoulder or downwardly inclined cam surface. The wide angle shoulder on each side of the pocket forming a side of the depression directs the corner of the bottom of the bottle toward the depression facilitated by the fact that the complementary shoulder is narrower in comparison. This construction tends to rotate the bottle within the top of the pocket or compartment so that the sides of the bottle tend to be brought in parallel relation with the sides of the pocket or compartment and due to gravity the bottle is directed downwardly due to the angle shoulders above mentioned.

My divider construction lends itself to be made of solid wall materials such as wood, metal, plastic, paper, rubber or the like.

It is a further feature to provide a bottle crate that not only facilitates greatly the entry of bottles into the compartments but which also

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saves time in handling bottles while safeguarding the bottles from breaking or bruising those bottles already in the crate. My invention also permits the use of a minimum size and overall crate construction and may be used with rectangular shaped containers and/or round containers.

It is a feature to form the dividers of my crate of either the wire or wall type construction with top edge cam surfaces which tend to engage the corners of the square type bottle and cause the bottle to rotate and fall automatically into the bottle section or compartment formed by the dividers. The depressions in the cam edges forming the top opening of the crate compartments are offset one from the other.

Squared type glass milk bottles are formed with rounded vertical corners as well as rounded bottom edges. Therefore when these rounded surfaces strike against the downwardly inclined cam surfaces of the dividers the bottle is automatically rotated as it falls by gravity to direct the bottle squarely into the bottle compartment.

The invention will appear more clearly from the following detailed description when taken in connection with the accompanying drawings, showing by way of example a preferred embodiment of the inventive idea.

In the drawings forming part of the application:

Figure 1 is a perspective view of my bottle crate with a portion broken away and illustrating a bottle in a position from which it will automatically fall into the pocket or section of the crate.

Figure 2 is a top plan view of my crate illustrating in broken lines the outline of a square-like bottle or container in a position from which the bottle is automatically moved to coincide with the section and drop thereinto due to gravity. Arrows indicate the rotation of the bottle produced.

Figure 3 is a section on the line 3—3 of Figure 2.

Figure 4 is a section on the line 4—4 of Figure 2.

Figure 5 is a perspective view of an alternative form of my crate with a portion thereof broken away.

My bottle crate A having sectional dividers which facilitate entry and removal of bottles therefrom is composed of the end walls 10 and 11 and the side walls 12 and 13. A supporting bottom for the crate consists of the rod-like supports 14 secured to the end walls 10 and 11 and positioned below the bottle receiving sections

hereinafter described. The crate may be provided with the hand hold apertures 16.

The crate A is divided into 12 compartments adapted to receive containers such as squared milk bottles and also round bottles. The compartments are composed of the transverse upper dividers 17, 18 and 19 and the transverse lower dividers 20, 21 and 22, the ends of the dividers being secured to the side walls 12 and 13. The sections are further composed of the longitudinal upper dividers 23 and 24 and the lower longitudinal dividers 25 and 26 which also aid in supporting a bottle in an upright position in the compartments. The upper longitudinal dividers 23 and 24 are secured to the transverse upper dividers 17, 18 and 19 by means of the upper bifurcated crimped ends 27 of the vertical support members 28. The lower bifurcated crimped ends 29 of the vertical support members 28 are secured to the intersection of the lower longitudinal members 25 and 26 with the lower transverse members 20, 21, and 22 to position the respective parts to form 12 container or bottle receiving sections illustrated, as a preferred embodiment, in the drawings. It is apparent that my crate may have any number of bottle receiving compartments.

The upper longitudinal divider 23 is formed with the depressed lower portions 30 and 31 which are offset with relation to the upright supports 28 thus producing the wide inclined cam-like shoulder portions 32 and 32' and the narrow inclined cam-like shoulder portions 33 and 33'. The shoulders 32, 32', 33 and 33' and those similar are curved as shown in the drawings or may be straight angled. The upper longitudinal divider 24 is formed similar to the divider 23 and has the depressed lower portions 34 and 35 which form the wide inclined cam shoulders 36 and 36' and the narrow inclined cam-like shoulders 37 and 37'. The depressed portions 34 and 35 are offset with relation to the depressed portions 30 and 31 respectively. The upper transverse dividers 17, 18 and 19 are formed with the depressed portions 38, 39 and 40 respectively which are offset with relation to each other and produce the narrow inclined shoulders 41, 41' and 41'' and the wide inclined shoulders 42, 42' and 42'' on the dividers 17, 18 and 19.

When a bottle, formed virtually square, as illustrated by the broken lines B in Figure 2, is not placed in line with the sides of the section C, but as illustrated by the broken lines, the bottom edges of the bottle are forced by the wide shoulders 42, 32, 42' and 36 towards the complementary narrow shoulders 41, 33, 41' and 37' respectively. As a result the bottle is of necessity rotated in the direction of the arrows in Figure 2 by gravity to a position so that it tends to be aligned with the sides of compartment C and drops to the bottom thereof. The remaining 11 compartments produce a similar effect in facilitating the placing of bottles into the compartments by my new constructions.

The wide shoulder 43 and the narrow shoulder 44 coact with the wide shoulder 36 and the narrow shoulder 37. Similarly the narrow shoulder 44 and the wide shoulder 45 coact with the wide shoulder 36' and the narrow shoulder 37'. This coactive relationship of wide and narrow shoulders is illustrated in the drawings particularly in Figures 1 and 2 with regard to the rest of the bottle receiving sections. Bottles are tended to be rotated into the various compartments in the direction of the arrows in Figure 2 no matter how the bottle is introduced into the compartment or compartments. The dividers above mentioned not only produce the above effects, but, in addition, protect the bottles being inserted from those which may be in a compartment of my crate similar to that designated at C.

In addition, the narrow shoulder 46 coacts with the wide shoulder 45 or the wide shoulder 42''. The narrow shoulder 47 coacts with the wide shoulder 33 or the wide shoulder 32'. The wide shoulder 48 coacts with either the narrow shoulder 33 or 33'. The narrow shoulder 49 coacts with either the wide shoulder 32 or the shoulder 32''. The narrow shoulder 50 also coacts with the wide shoulder 42 or 43. The wide shoulder 43 coacts with either the narrow shoulder 50 or the narrow shoulder 37'.

In Figure 5 I illustrate an alternative form B of my invention in which the dividers 51, 52 and 53 are made of sheet material and which may or may not extend to the bottom of the crate. The upper edge surface of the transverse dividers 51, 52, and 53 corresponds to the formation of the dividers 17, 18 and 19. The upper edges of the longitudinal dividers 54 and 55 correspond to the formation of the longitudinal dividers 23 and 24.

In old forms of crates where the depressed portions similar to 30 and 34, for example, were directly opposite each other and centrally disposed with relation to the sides of a compartment similar to C and likewise with the depressions 38 and 39, it was difficult to place squared bottles in the compartments when the corners of the bottle were directly above the depressions last mentioned. In this position the bottle would have to be lifted slightly and aligned. This condition is not possible with my new construction and as a result my crate may be filled with squared bottles in much less time than formerly and with less effort on the part of the operator.

The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claims without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:

1. A crate for storing either square or round bottles, comprising individual bottle receiving, rectangular compartments disposed within said crate, some of said receiving compartments being formed of a series of partition members, the remaining compartments being formed by said side and end walls and said partition members, each of said partition members having a pair of downwardly inclined cam surfaces forming shoulders on the top edge thereof in some of said compartments, one of said shoulders being wide and the other narrow, with the wide shoulder of one partition member opposite the narrow shoulder of an immediate adjacent parallel partition member, whereby a square bottle of milk is caused to rotate automatically and fall into its respective compartment when the corners of the bottle engage said cam surfaces.

2. Sectional dividers for crates including parallel longitudinal members having spaced apart depressed portions, parallel transverse members having spaced apart depressed portions and means for securing said longitudinal members and said transverse members at right angles to

each other to form bottle receiving compartments, said depressed portions in one longitudinal member being offset with respect to said depressed portions in an immediately adjacent oppositely disposed parallel longitudinal member to form cam-like shoulders to provide means for imparting a turning movement to a square type bottle and thereby preventing the same from wedging in said depressions.

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