Oct. 24, 1961 J. W. CLUNE ET AL 3,005,568

RECEPTACLE CASE

Filed Aug. 26, 1959 2 Sheets-Sheet 1

Fig. 1.

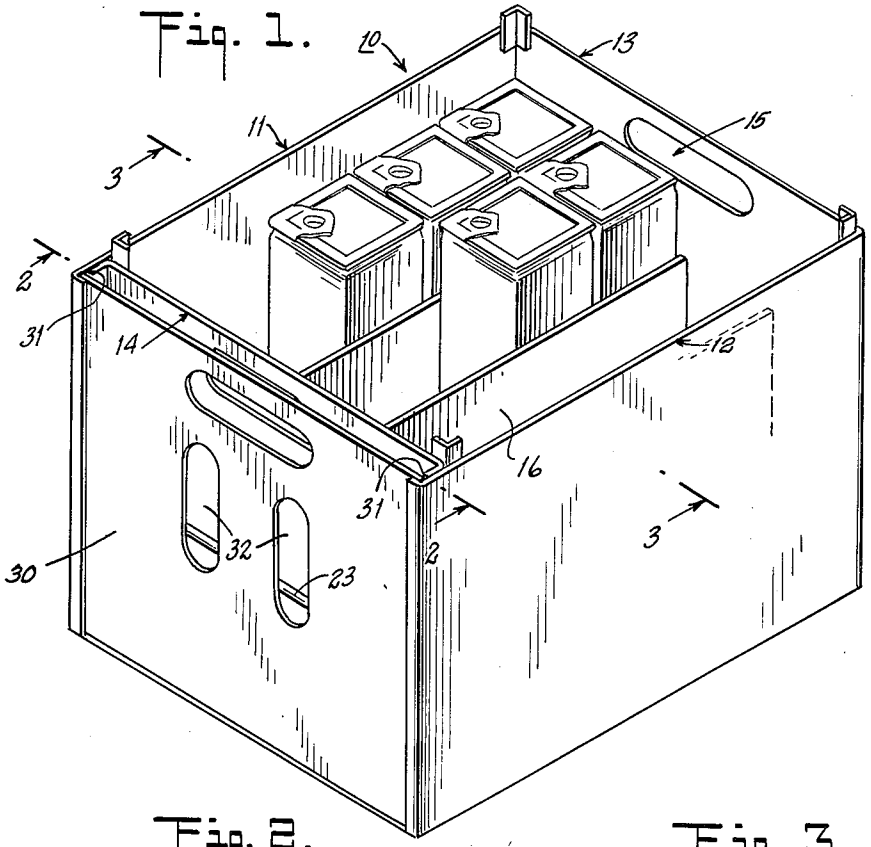


Fig. 2.

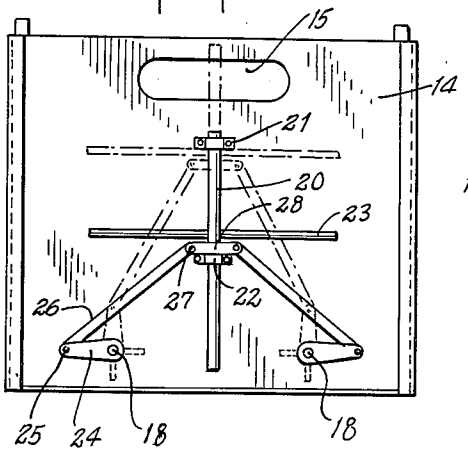
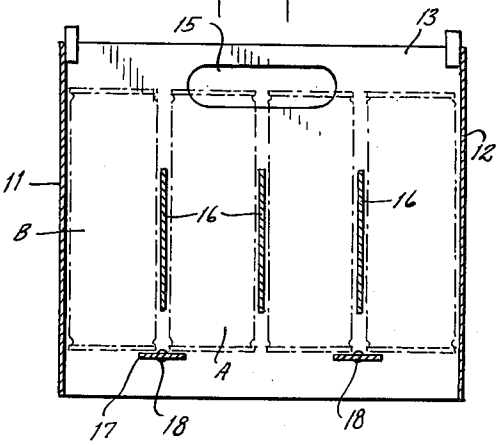


Fig. 3.



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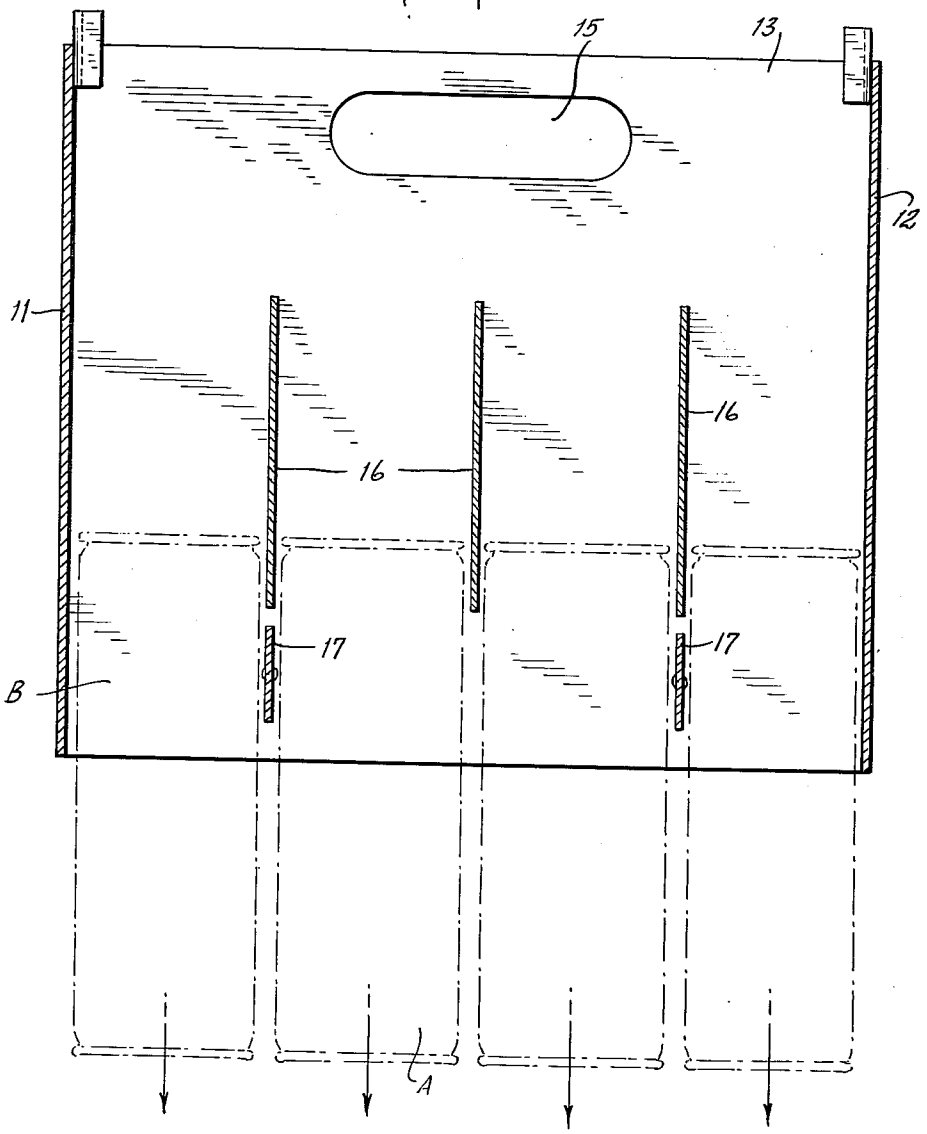
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Fig. 4.



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3,005,568

RECEPTACLE CASE

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7 Claims. (Cl. 220—21)

This invention relates to a receptacle case or container and more particularly to a receptacle case which has no top or bottom and is provided with means to conveniently and quickly dispense the receptacles held within the case through the bottom.

The receptacle cases that are normally used today for carrying cartons and bottles of milk and other beverages are provided with a solid or wired bottom which acts as a resting platform for the base of the receptacles. To remove the receptacles, it is necessary to manually lift them out of the case and place them in a freezer or display shelf of a store or the like. This removal operation is very time consuming since it is usually impossible to withdraw manually more than four containers or bottles at one time and it is also a tiring operation on the person required to perform the task. Since today, especially in supermarkets, it is most common to empty an entire case of receptacles at one time, manual unloading becomes even more burdensome.

It is, therefore, the primary object of this invention to provide a receptacle case which will dispense the receptacles through the bottom thus eliminating the inconvenient burden of manually emptying the container by removal of the receptacles through the top.

A further object of this invention is to provide a receptacle case which eliminates the heavy bottom commonly found on most containers today.

An additional object of the present invention is to provide a bottomless receptacle container which has balancing bars or the like for retaining the receptacles, which balancing bars may be easily pivoted by manipulating a simple linkage arrangement permitting the displacement of the receptacles through the bottom of the case.

A still further object of the present invention is to provide a bottomless receptacle container which may be constructed to accommodate any size or number of receptacles.

Still another object of the present invention is to provide an inexpensive, light-weight bottomless receptacle case which is simple to operate and has a minimum of moving parts.

Other additional objects and advantages of the present invention will be recognized during a reading of the following description taken in conjunction with the accompanying drawings referred to, wherein:

FIG. 1 is a perspective view of the invention;

FIG. 2 is an end view taken along line 2—2 of FIG. 1;

FIG. 3 is a cross-sectional view taken along line 3—3 of FIG. 1 showing the receptacles contained within the case; and

FIG. 4 is a similar view as shown in FIG. 3 wherein the receptacles are being displaced through the bottom of the case.

Briefly described, the invention comprises a receptacle case which has side walls and end walls. The case is open at both the top and bottom. Spaced between the end walls and affixed thereto are longitudinal separating members which are commonly found in containers used today. These separating members function to align the receptacles contained in the case. Below the longitudinal separating members and pivotally attached to the end walls, are small flat longitudinal bars or the like which are normally held in a horizontal position. These bars are affixed to the end walls by a pivotal shaft which permits

the bars to be rotated from the horizontal position to the vertical position. When rotated to a vertical position, the bars are aligned with the longitudinal separating members. The rotation of the shafts on these holding bars is controlled by a simple linkage mechanism which is attached to the outside of one of the end walls.

When the case is being loaded, the longitudinal bar members rest in their normal horizontal position which provides an overlapping lip area. The bottom edge of the receptacles rests on this lip area and are retained within the case. When the bars are rotated to their vertical position, the horizontally protruding lips of the bars no longer contact the bottom of the receptacles, thus permitting the receptacles to dispense themselves through the bottom of the case.

Referring now to the drawings, FIG. 1 shows a normal carrying case 10 which is provided with side walls 11 and 12 and end walls 13 and 14. The side and end walls may be made of any conventional material and may be slotted or wired to decrease the weight of the case. It has been found preferable to use a light material such as sheet steel or alloyed aluminum sheet for the receptacle case walls. The end walls 13 and 14 are provided with the regular handle openings 15 for carrying the case, which are similar to most of those found in cases today.

The inside of the case may be provided with any suitable webbing to retain the receptacles in an aligned position within the case. This webbing may be solid or wired and may be both longitudinal and horizontal. FIG. 1 illustrates one type of webbing which has been found preferable for retaining milk cartons in the case 10. This webbing consists of thin longitudinally extending, vertical separating members 16 which are affixed by any suitable manner to the inside of the end walls 13 and 14 of case 10. The vertical spacing members 16 can be of any height or size depending upon the particular receptacles contained within the case. Those shown in the drawings are about one-half the height of the side walls 11 and 12 and are centrally attached to the end walls 13 and 14. It is essential that the spacing members do not extend all the way down to the bottom of the case as will be explained later in detail.

Below the spacing members 16 and aligned vertically therewith, are thin, flat bar holding members 17 pivotally attached to the end walls 13 and 14 by shafts 18. The bar members 17 have an approximate width of one and one-half inches so that when they are in a horizontal position they extend three-quarters of an inch on each side of the spacing members 16. This horizontal extension provides a resting place for contacting the edge of the base of the receptacles and holding them within the case. The longitudinal bar 17 extends the entire length of the case and may be made of thin, flat steel having a thickness of about one-quarter of an inch or it could be constructed of aluminum or steel rods.

FIG. 3 shows a case having three longitudinal separating members 16. When this construction is used, it is only necessary to provide the case with two horizontal bar members 17; each bar member being disposed below the separating members adjacent the sides of the case. With this arrangement, an extending horizontal section of each bar member protrudes into all spaces between the separating members and provides a retaining surface to hold all the receptacles when the case is completely filled.

Affixed to the pivotal shaft 18, which extends through the end wall 14, is a linkage mechanism which is adapted to pivot the bar members 17 from the horizontal position to a vertical position as shown in FIG. 4. The details of this linkage mechanism are shown in FIG. 2 wherein a vertical slidable rod 20 is held against the end wall 14

by bearings 21 and 22. Rod 20 is provided with a cross-handle 23 or the like for moving it upwardly. The linkage mechanism comprises a short arm 24 pivotally attached at 25 to a longer arm 26 which is pivotally attached at 27 to collar member 28.

The linkage mechanism is constructed in such a manner that when collar 28 rests upon the lower bearing 22, arm 24, which is attached to shaft 18 of bar member 17, retains said bar member in a horizontal position. The force of gravity will normally position the linkage mechanism in this arrangement which always provides a resting surface for receptacles to be contained with the case. When the shaft is moved upwardly by means of handle 23, the collar 28 also moves upwardly along with arms 24 and 26. The upward movement of the linking arm 24 pivots shaft 18 which in turn pivots the bar member 17 to a vertical position. As previously described, when bar member 17 is in the vertical position, it aligns with the vertical separating member 16 below said member and consequently there is no retaining surface to hold any receptacles within the case and they will fall through the bottom as shown in FIG. 4.

It has been found that when the receptacles are filled and rest upon the bar member 17, which is in the normal horizontal position, very little force is needed to move rod 20 upwardly since the weight of one carton counterbalances the weight of the adjacent carton when the bar member 17 is pivoted. Thus, when carton A pushes down on its side of bar 17 it displaces the same force upwardly against carton B on the other side of bar 17 until the bar has moved into the vertical position at which time both cartons A and B would fall simultaneously through the bottom.

It can be seen that by the simple vertical movement of rod 20, all the cartons within the case 10 may be displaced through the bottom without the exertion of any undue force. In operation, the filled case is placed on the stand or display surface where the receptacles are to be deposited, the handle 23 is pulled upwardly, the receptacles fall off the bar 17 onto the display surface. When the cartons have fallen through the bottom, they are aligned in the same position that they were in the case and thus do not require rearrangement for display or storage purposes. Once the cartons have fallen through, it is a simple matter just to lift the case up and remove it from the display area.

To prevent excessive exposure, it has been found desirable to encase the linking mechanism with a second end wall 30 as shown in FIG. 1. This second end wall is constructed to slidably fit within grooves 31 in side walls 11 and 12 so that it may be conveniently removed for inspection of the linking mechanism. Suitable elongated vertical slots 32 are provided in end wall 30 to enable the insertion of the fingers below the lifting handle 23 and the upward movement of the same.

It can readily be seen from the above description that the present invention affords a new receptacle case which efficiently and conveniently disposes of all the receptacles through the bottom by simply lifting a cross bar handle upwardly. The deposited receptacles drop through the bottom of the case and position themselves in a display or storage arrangement. Although the invention has been shown and described herein, it is understood that certain changes and additions may be made without departing from the spirit and scope of this invention.

We claim:

1. A rectangular receptacle case having side and end walls, a plurality of spaced longitudinal separating members within said case walls and affixed to the inside of said end walls, said separating members being vertically spaced above the bottom of end walls, longitudinal bar members having a shaft extending from each end thereof, said shaft pivotally mounted in said end walls below said separating members, linkage means having handle means connected to said bar member shafts whereby said bar members may be pivoted within said receptacle case below said separating members and above the bottom of said end walls from a horizontal to a vertical position when moving said handle means, said bar members providing a retaining surface for receptacles on each side of each of said separating members when said bar members are in a horizontal position.

2. A rectangular receptacle container having end and side walls, a plurality of horizontally spaced longitudinal separating members within said case walls and affixed to the inside of said end walls, said separating members being vertically spaced above the bottom of said end walls and adapted to longitudinally align a plurality of receptacles, flat bar members having a shaft extending from each end thereof, said shafts pivotally affixed within said end walls below said separating members, linkage means connected to said bar member shafts, said linkage means provided with holding means to hold said bar members in a horizontal position below said separating members to retain a longitudinally aligned plurality of receptacles on each side of each of said separating members, said linkage means provided with handle whereby said bar members may be pivoted about said bar member shafts from said horizontal position to a vertical position aligned with said separating members and above the bottom of said container walls when moving said handle means.

3. A receptacle case having end and side walls, a posed separating members within said case walls and affixed to the inside of said walls, longitudinal thin flat bar members pivotally affixed to said end walls below said separating members and above the bottom edge of said case walls whereby said bar members may pivot from a horizontal to a vertical position below said separating members and above the bottom edge of said case walls, each of said flat bar members adapted to retain two rows of longitudinally aligned receptacles within said case, linkage means connected to said bar members adjacent one of said end walls, said linkage means comprising a pair of pivotally joined arms, one end of each of said arms being connected to one of said bar members, and means cooperating with said linkage means for holding said bar members in a horizontal position, said linkage means provided with movable handle means, said handle means cooperating with said linkage means connected to said bar members whereby said bar members may be pivoted from said horizontal position to a vertical position within said case walls when said handle means is moved in a vertical direction.

4. A rectangular receptacle container having side and end walls and a plurality of vertical stationary receptacle separating members secured to the inside of said walls and spaced from the bottom thereof, longitudinal bar members pivotally mounted within said end walls below said separating members and adapted to pivot within said case below said separating members and above the bottom edge of said case walls, said bar members adapted to cooperate with the bases of two rows of longitudinally aligned receptacles retained within said separating members and normally remain in a balanced horizontal position, linkage means having handle means connected to said bar members whereby said bar members may be pivoted from said horizontal position to a vertical position and in alignment with said separating members when moving said handle means thereby moving said bar members out of cooperation with the base of said receptacles.

5. A receptacle case case having vertical side and end walls and open at the top and bottom, a plurality of thin flat bar holding members having extending shafts at each end, said end walls provided with bearing apertures, said shafts pivotally registering in said bearing apertures said bar members adapted to cooperate with the bottom edge of two longitudinally aligned rows of receptacles within said case when said bar members are in a horizontal position, linkage means cooperating with said shafts, said linkage means having stop means for re-

taining said bar holding members in a horizontal position and moving means for pivoting said bar holding members into a vertical position within said receptacle case above the bottom edge of said side and end walls out of cooperation with the bottom edge of receptacles within said case.

6. A rectangular receptacle case having end and side walls, a plurality of horizontally spaced vertical separating members, the ends of said separating members affixed to the inside of said end walls, said separating members adapted to longitudinally align a plurality of receptacles, flat bar members having a longitudinally extending shaft protruding from the ends thereof, said end walls provided with an annular bearing aperture near the bottom thereof and vertically aligned with said separating members, said bar member shafts pivotally registering within said bearing apertures, linkage means rotatably connected to the shafts of said bar means, said linkage means comprising a pair of interconnected linking arms, a vertical slidable rod having a centrally disposed cross bar handle, a pair of vertically spaced bearings affixed to said end wall and surrounding said vertical rod, a collar affixed to said shaft and movable therewith between said bearings, one end each of said pair linking arms pivotally affixed to said collar, the other end of each of said pair of linking arms integrally affixed to said bar member shafts, whereby said linking arms pivot said bar member from a normal horizontal position to a vertical position when said vertical rod and collar are moved upwardly.

7. A receptacle case having vertical end and side walls, a plurality of horizontal spaced vertical disposed

separating members affixed to the inside of said end walls, said separating members adapted to longitudinally align a plurality of receptacles having a base, thin flat bar members having shafts extending from the ends thereof, said shafts pivotally affixed to said end walls below said separating members, said flat bar members adapted to be vertically aligned with said separating members when pivoted from a horizontal to a vertical position, said bar members adapted to cooperate with the bottom edge of the base of receptacles aligned between said separating members, a vertically movable handle provided with a collar, a pair of vertically spaced bearings affixed to one of said end walls and adapted to retain said handle, said collar affixed to said handle between said bearings and having limited vertical motion therebetween, a pair of linking arms, one end of each of said pair of linking arms pivotally affixed to said collar, the other end of each of said pair of linking arms integrally affixed to said bar shaft member whereby said bar member is pivoted from a horizontal to a vertical position out of cooperation with the bottom edge of said receptacles when said vertical rod is moved upwardly.

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UNITED STATES PATENT OFFICE

CERTIFICATION OF CORRECTION

Patent No. 3,005,568 October 24, 1961

John W. Clune et al.

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 4, line 28, for "posed" read -- plurality of longitudinal and transverse vertically disposed --; line 66, strike out "case", second occurrence; column 5, line 24, after "end" insert -- of --; line 32, for "horizontal spaced vertical" read -- horizontally spaced vertically --.

Signed and sealed this 3rd day of April 1962.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents