Jan. 6, 1953 J. M. HINMAN 2,624,467

RECEPTACLE RACK

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FIG. 2

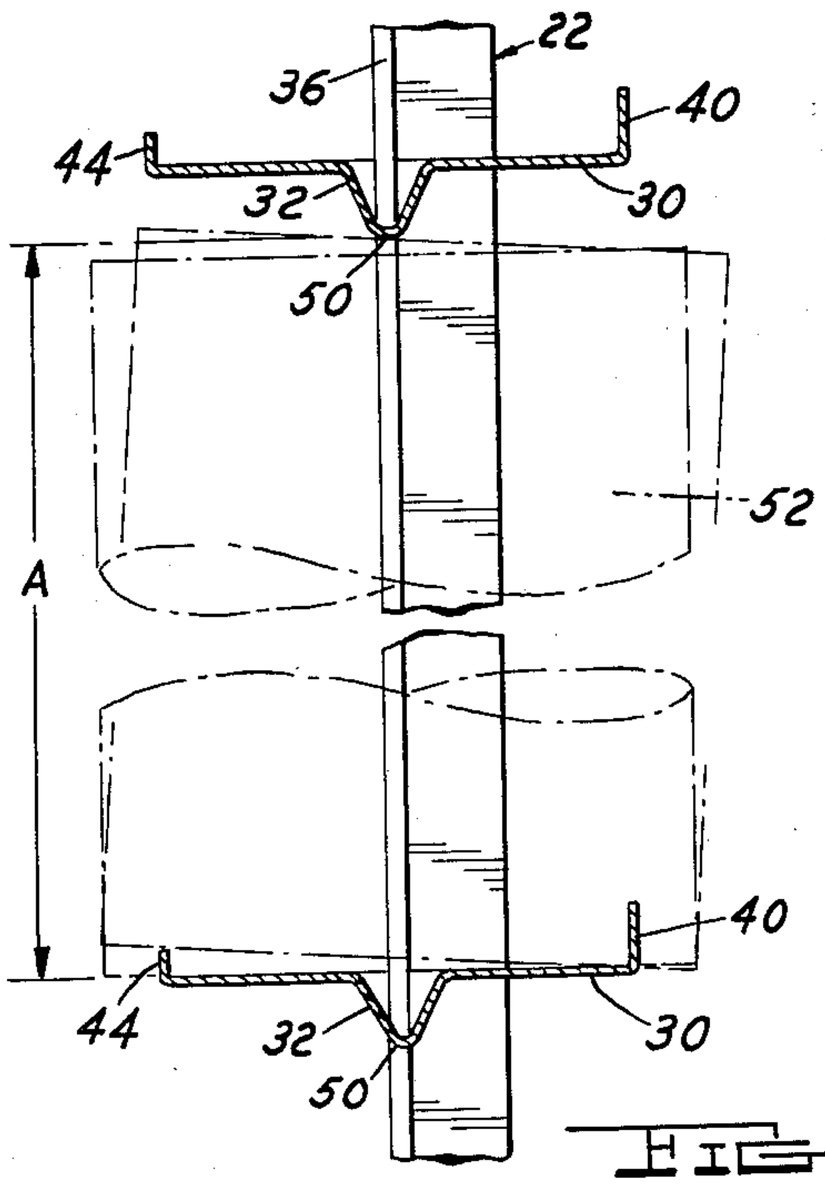

FIG. 1

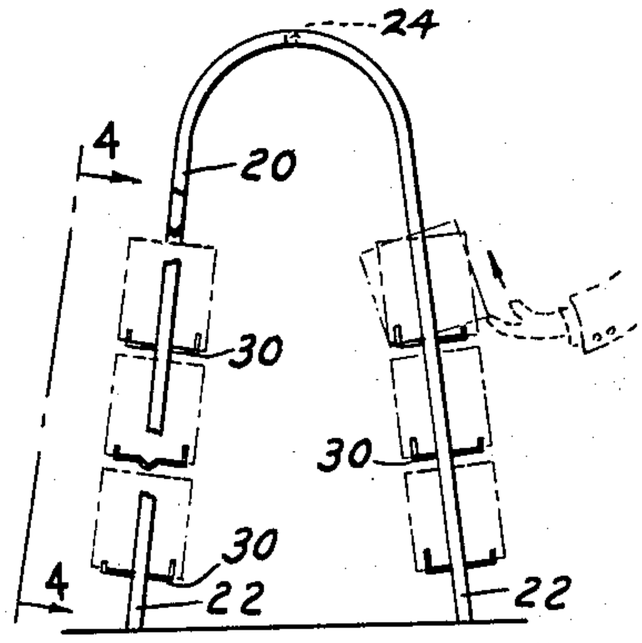

FIG. 4

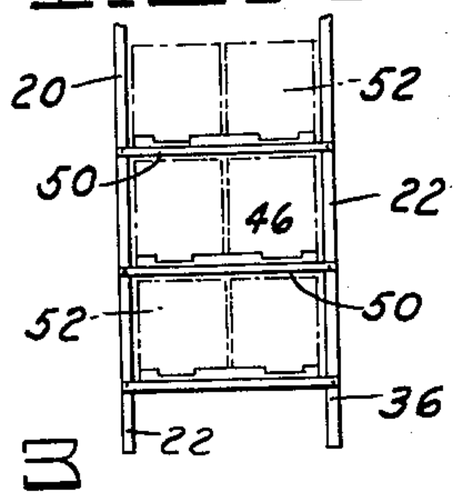

FIG. 3

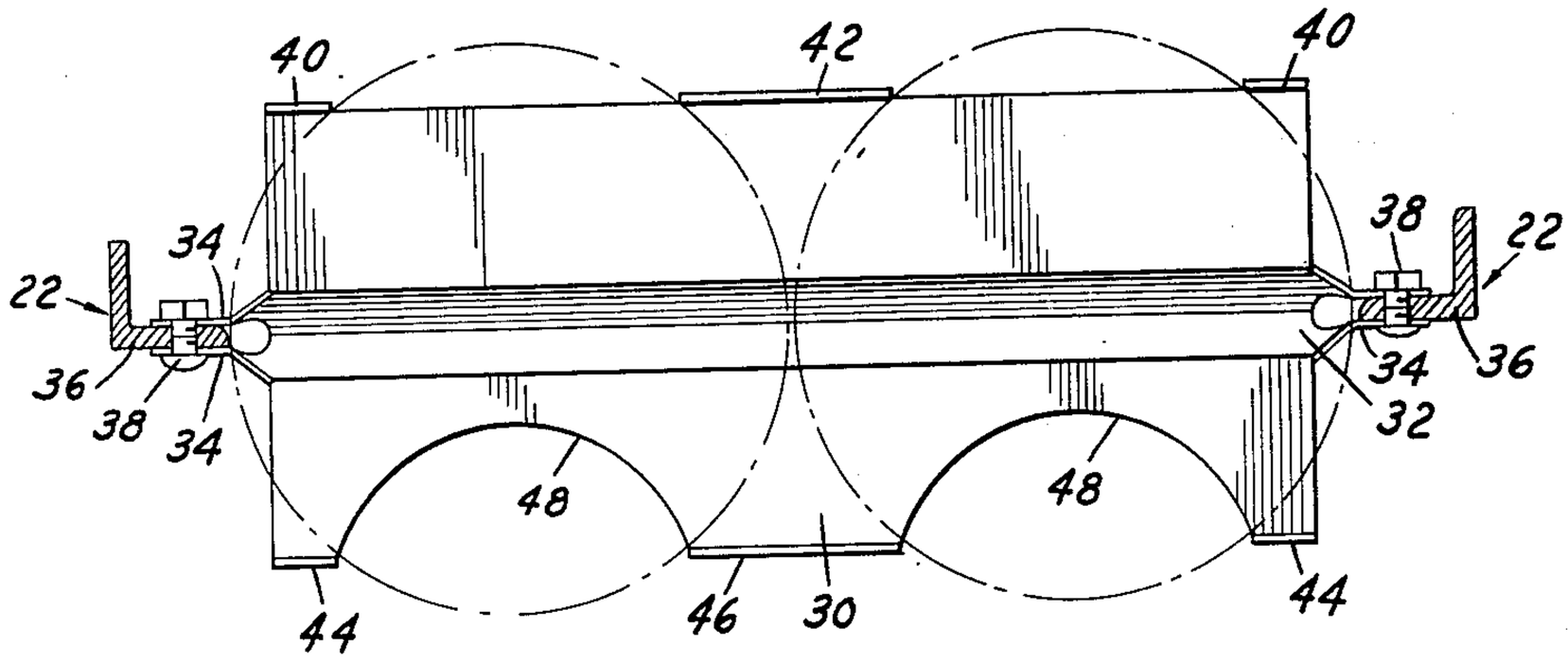

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FIG. 5

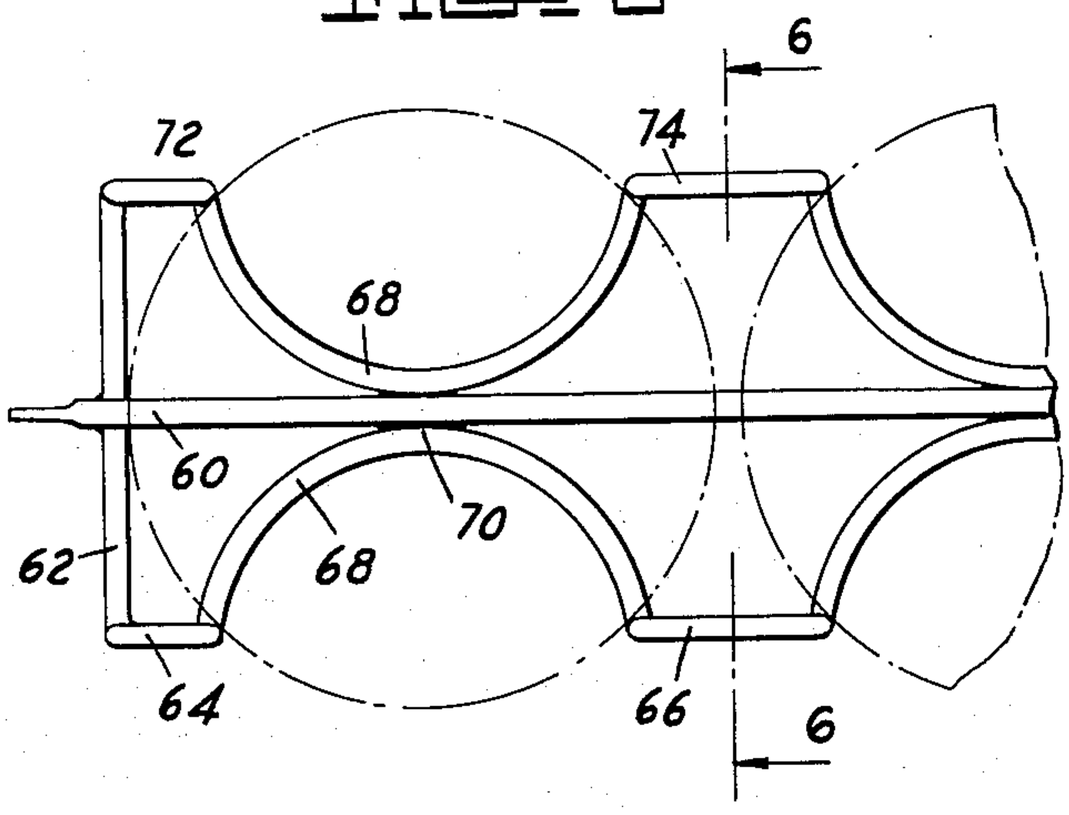


FIG. 6

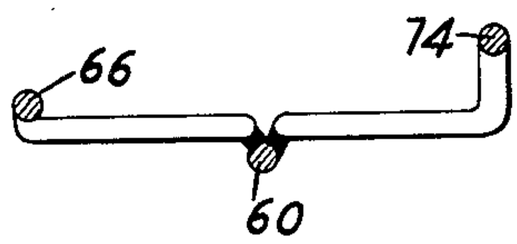


FIG. 7

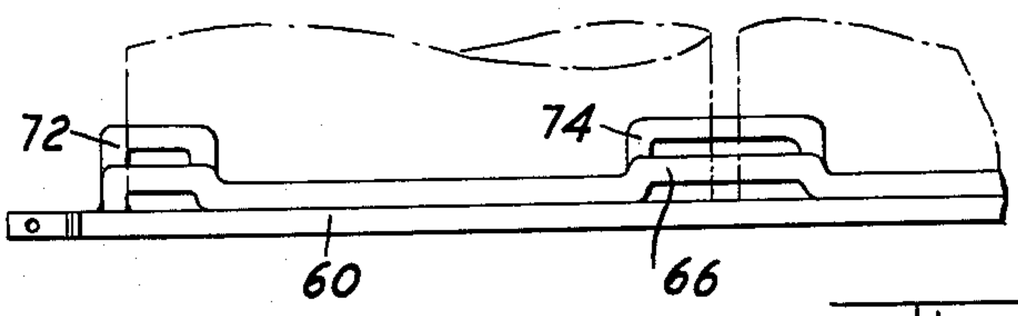


FIG. 10

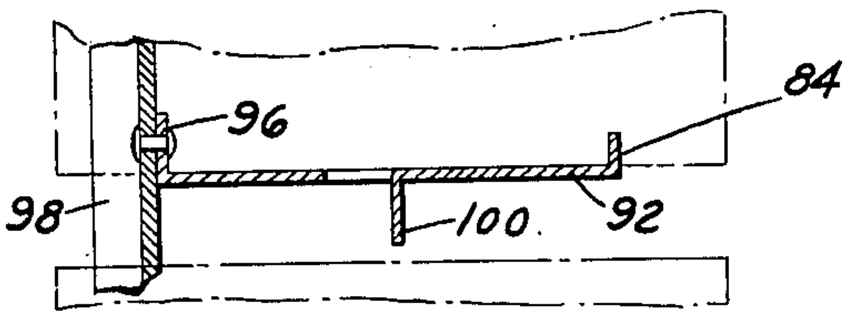


FIG. 8

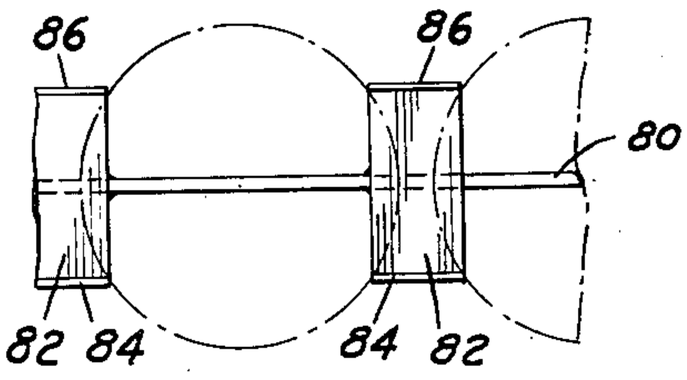
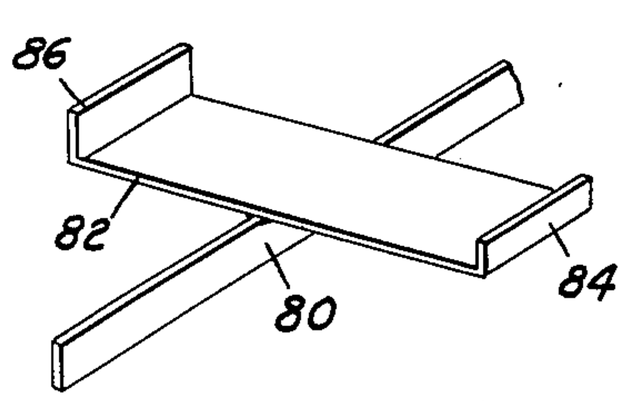


FIG. 9



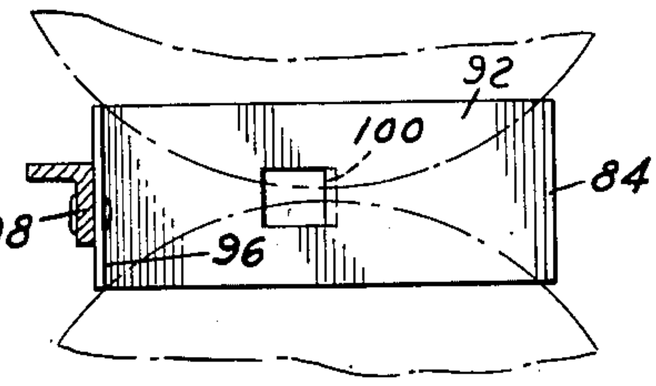


FIG. 11

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2,624,467

RECEPTACLE RACK

Joseph Moreland Hinman, Plumer, Pa.

Application August 4, 1949, Serial No. 108,545

3 Claims. (Cl. 211—71)

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This invention relates to a receptacle rack and has particularly to do with a rack for displaying and storing a plurality of receptacles in such a manner that they may be readily removed. It is an object of the invention to provide a portable rack, that is, one that can be moved in and out of doors, for example, or from a locked position to an unlocked position without disturbing the containers in the form of cans, bottles, or boxes which are held in the rack. It is a further object to provide a display rack which can be tilted at various angles without losing its contents and yet so designed that the individual containers may be readily removed therefrom when desired.

Another object of the invention is the provision of a display rack as above described which has the added feature that the display or advertising material to be found on the containers is not obscured by retaining bars or other portions of the rack.

Briefly, the invention consists of one or more shelves which support the containers and engage the bottom thereof in a way to prevent lateral shifting and so arranged with respect to a vertical locator that the container will not dislodge from the rack unless intentionally tilted to a certain angle and pulled forward in a manner to be described in more detail. Upon this forward movement, the container will tip into the hand of the operator and be ready for sale or use.

Other objects and features of the invention relating to details of the construction and operation and various embodiments of the invention will be found described in the following specification and claims.

Drawings accompany the specification, and the various views thereof may be briefly described as:

Figure 1, a side view of the rack showing the general layout.

Figure 2, a vertical section enlarged to show the details of the construction.

Figure 3, a plan view of one of the supporting shelves of the rack showing the relation to the containers to be held therein.

Figure 4, a front view showing the relationship of containers to the supports.

Figure 5, a plan view of a modification showing a shelf formed of wire.

Figure 6, a sectional view on line 6—6 of Figure 5.

Figure 7, a front view of the supporting shelf of Figure 5.

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Figures 8 and 9 illustrate a modified type of supporting unit with strip cross pieces on a supporting bar.

Figures 10 and 11 illustrate still another modification utilizing forward projecting lugs on a back support.

Referring to the drawings, an inverted U-shaped rack 20 has double legs 22 connected at the top by a supporting handle 24. See Figure 1. The legs 22 of the support 20 are connected also by supporting shelves 30.

As shown in Figures 2 and 3, the supporting shelf 30 consists of a flat sheet metal plate having a V-groove 32 struck down into the plate centrally thereof extending longitudinally of the shelf which is built for two containers. The sides of the V-shaped groove 32 extend at 34 to lie on either side of one flange of an angle 36 and may be welded or riveted or secured thereto by a bolt and nut combination 38. The rear edge of the shelf 30 has upwardly extending tabs 40 at each end thereof and a longer tab 42 centrally spaced between the tabs 40. The forward edge of the shelf 30 has tabs 44 at each end thereof with a longer centrally positioned tab 46 directly forward of the tab 42. Between the end tabs 44 and the central tab 46 is a semi-circular opening 48 extending back into the shelf for finger clearance as will be later described.

As viewed in Figure 2, it will be seen that the upper shelf 30 has the V-groove 32 projected downwardly to an apex 50. Thus the dimension between the apex 50 and the surface of shelf 30 is shown at A. The dimension of the container 52 shown in dotted lines is less than the dimension A, but the difference between the vertical dimension of the container and the dimension A is less than the vertical projection of the tab 44 or 46. The container 52 will generally be a standard can or other type of standard container which has a definite vertical dimension and which is a regularly shaped unit.

It will be seen that the apex 50 is positioned substantially centrally between the forward and rear edges of the container 52 although it extends across the container from side to side. If the container is tilted as shown in Figure 2, there is sufficient distance between the apex 50 and the top of the container that the forward bottom edge of the container will clear the forward tabs 44 and 46, thus permitting the container to be withdrawn forwardly. Since most cans have an outer rim on the lower surface thereof, the opening 48 permits the fingers of an operator to be

positioned behind such rim and the can may be tilted and withdrawn forward slightly. After a short movement, the can will tip easily into the hand removing it by gravity.

I have found that a rack such as shown in Figure 1 may be filled with cans and tipped sideways and inverted without losing the cans. On the other hand, a slight lifting and forward movement on the forward edge of the can will bring the can out with no difficulty. This enables an oil station attendant, for example, to carry the rack back and forth without losing the contents thereof and yet makes the rack an extremely fine display unit from which the cans may be readily removed by a person knowing how to remove them and in which the cans are not obscured by any cross bars or other retaining means. This permits the advertising material on the cans to be most effective.

In Figures 5, 6, and 7, I have shown a modification of my device made of formed wire. In this unit a central supporting wire **60** serves also as the top vertical locator for a combination unit, and the remainder of the shelf is formed by shaped wires having an outward extension **62**, a vertical end tab **64**, and a central tab **66**. A semi-circular portion **68** recedes to the bar **60** to be attached thereto at **70** to provide stability and strength to the shelf. The back tabs in a similarly shaped piece are located at **72** and **74**. The operation of this unit is identical with that described in connection with Figures 1 to 4. In Figures 8 and 9 a modified type of unit is shown in which a supporting horizontal cross bar **80** serves also as the vertical locator in a multiple unit and on this bar are spaced transverse plates **82** having a forward upward projection **84** and a rearward upward projection **86**. As shown in the plan view of Figure 8 a unit **82** on either side of a can location will serve to locate the base of the can except when lifted as described in Figure 1. In Figure 10 another modification somewhat similar to that of Figure 8 is shown in which a supporting plate **92** has a forward tab **94** and the rearward tab **96**, the rearward tab being fastened to a transverse supporting angle **98**. Struck out from the central portion from the plate **92** is a downward extending tab **100** which serves as the vertical locator or hold-down means to correspond to the bar **80** of Figure 8. The operation of this unit is also similar to the previously described modifications.

It will thus be seen that I have provided a display rack which is relatively inexpensive to manufacture, easy to maintain and keep clean, and which has definite operational advantages including the desirable feature of being portable while loaded with no chance of accidental displacement of the containers.

I claim:

1. A display and storage rack for regularly shaped containers, said rack of the type intended to retain said containers until intentionally removed regardless of the position of the rack which comprises a plurality of shelves arranged horizontally and one above the other for supporting a plurality of containers, each of said shelves having a V-shaped trough formed longitudinally thereof between the sides and extending downwardly, retaining means at the front and the back of the shelves to prevent transverse dislocation of the containers, said shelves being spaced such that the containers will be prevented from accidental dislodgment by the downwardly extending troughs of the upper shelves, said spacing being such that a lifting of the forward bottom edge of a container will cause tilting a sufficient distance to permit the container to clear the front retaining means on the supporting shelf.

2. A display and storage rack adapted to contain a plurality of regularly shaped uniformly dimensioned containers which comprises parallel supporting bars substantially vertical in at least one plane, means connecting said bars comprising shelves extending horizontally between said bars in spaced relation, each of said shelves having a downwardly extending trough-like formation extending lengthwise of the shelf between the supporting bars, retaining means at the back and front of said shelves to prevent lateral movement of said containers when resting on said shelves, each shelf above the bottom shelf being spaced from the next lower shelf a distance slightly greater than the vertical dimension of the containers, said trough-like formations being positioned approximately centrally of the space to be occupied by the containers whereby said containers may be tilted by an upward force on the lower forward edge thereof to permit them to clear the front retaining means on the supporting shelf to free the container from the rack.

3. A display and storage rack as defined in claim 2 in which the shelves are substantially horizontally disposed and dimensioned in width less than the fore and aft dimension of the containers to be held, said shelves being formed with vertical turned-up flanges notched to receive projecting portions of said containers, said shelves also being cut away below a fore part of the space to be occupied by the containers to permit easy application of removal pressure to the lower fore part of the containers when at rest on the shelves.

JOSEPH MORELAND HINMAN.

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