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R. M. HARROVER.

BOTTLE CRATE.

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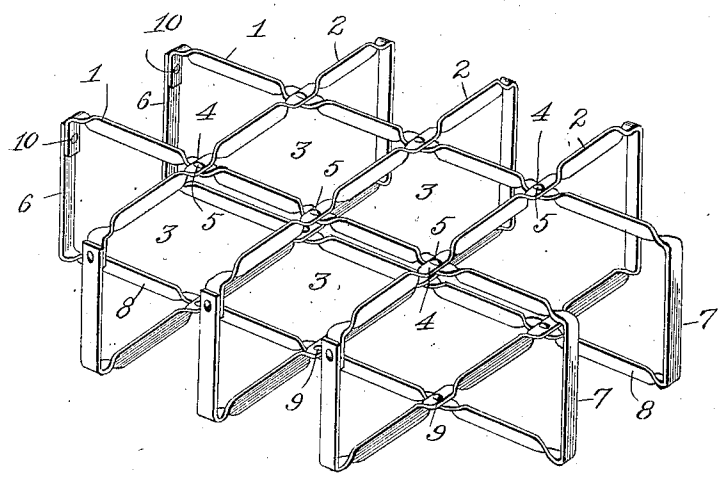

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BOTTLE-CRATE.

No. 813,699. Specification of Letters Patent. Patented Feb. 27, 190

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To all whom it may concern:

Be it known that I, ROBERT M. HARROVER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Bottle-Crates, of which the following is a specification.

My invention has relation to new and useful improvements in bottle racks or cages for use in connection with crates or cases in which bottles, jars, and similar receptacles are stored or shipped, and more especially to racks or cages adapted to be used in connection with metallic cooling cases or containers for bottles of milk.

The primary object of the invention is to provide a rack or cage which is extremely simple in construction, which will prove durable in use, and which will be readily removable as an entirety from within the case in connection with which it is used.

A further object is to provide a rack the top and bottom of which will be substantially the same in form and construction, so that the rack will be reversible, which facilitates the placing of the rack in position in the case, as it may be placed in position without regard to which side is uppermost.

I have fully and clearly illustrated my invention in the accompanying drawing, to be taken as a part of this specification, and wherein the figure is a perspective view of a cage or rack constructed according to my invention.

Before proceeding with the detailed description of my invention I would state that I am aware that cooling-crates for milk-bottles have heretofore been made consisting of a suitable metallic case or receptacle containing a grid or rack to support a plurality of bottles upright therein, said rack being permanently fixed in position within the container and immovable therefrom. The construction just briefly stated is very unsatisfactory for the reason that the cases cannot be maintained in such sanitary condition as is necessary and proper, owing to the fact that the racks being immovable it is impossible to thoroughly clean the bottoms of the cases, the racks preventing access to the lower part thereof. In the existing structures it is also difficult to clean the racks themselves, the under sides thereof being accessible only with difficulty, and also for the reason that the many crevices formed at the points at which the racks are connected to the case cannot be reached by ordinary cleaning implements. It is therefore one of the important and salient features of this invention to make the rack removable to permit a thorough cleansing thereof and so that there will be no obstruction or hindrance to the proper cleaning of the case.

Proceeding with the description of the invention, 1 designates longitudinal cross-bars disposed in a horizontal plane and arranged in parallel spaced relation, said bars being made, preferably, of metal bands or ribbons, which have been rendered non-corrodible by galvanizing or other process. Crossing the cross-strips 1 at right angles thereto and also arranged in parallel spaced relation are transverse bars 2, the said transverse and horizontal bars forming a plurality of pockets or cells 3, in which the bottles to be stored or transported may be placed. The cross-bars 1 and 2, as heretofore stated, are preferably made of band metal, and these bands are disposed on edge throughout the greater portions of their length, except where they cross each other, at which points said bars are twisted to have their flat surfaces lie in a horizontal plane, as at 4, where the bars are rigidly secured to each other by means of rivets 5.

It will be seen that in the arrangement shown in the drawing the longitudinal and transverse cross-bars are made to cross each other at points removed from the opposite ends thereof, so that a rack is formed embodying a plurality of cells, some of which are bounded on all sides by the longitudinal and transverse bars and others of which (those on the sides of the rack) are open in the plane of the bars. By this arrangement it will be seen that the walls of the case form the sides for said open cells. This is of advantage for the reason that I am able to dispense with a marginal band or frame, which would take up considerable room within the crate and would add to the expense of production and the weight of the reversible rack.

The cross-bars 1 and 2 are made of a length slightly less than the inside length and width of the case, so that when the cage is placed in position in the case it will fit snugly therein and not be liable to move or shift about when the case is lifted and moved from place to place.

At one of their end portions, as shown in the drawing, the transverse and longitudinal cross-bars are bent downwardly at right angles to their horizontal portions to form

vertical portions 6, and at the opposite end portions the strips from which the cross-bars are made are similarly bent to form vertical portions 7, parallel with the vertical portions 6, said vertical portions being of the same length and constituting legs or supports for the cross-bars to sustain the rack formed by the latter in horizontal position at the desired elevation within the case, said supports resting with their lower ends on the bottom of the case when the rack is in position therein. From the lower ends of the vertical supports 7 the bands are bent back in a horizontal plane, as at 8, parallel with each other and also parallel with the cross-bars 1 and 2, the lower set of cross-bars thus formed crossing each other in a manner similar to that of the bars 1 and 2 and secured to each other at their points of crossing by rivets, as shown at 9. The ends of the lower set of cross-bars are secured to the lower ends of the vertical legs 6 by rivets, as shown at 10, so that said legs or supports are securely braced and maintained in proper position to support the rack.

It will be seen from the construction just described that a cage is formed having upper and lower supporting-racks maintained in spaced parallel horizontal planes by the legs or supports 6 and 7, so that the cage is rendered readily reversible to facilitate the placing of said cage in the case or crate, as no care need be exercised as to which of the racks is placed uppermost.

It will be seen that when the rack or cage is in position in the crate the upper set of bars will embrace the bodies of the bottles, while the lower set will serve to confine and hold the lower ends or bottoms of the bottles and prevent lateral movement thereof.

From the above description, taken in connection with the drawing, it will be seen that a bottle-supporting rack is provided which is readily movable into and out of position within the case or crate. This removable feature of the rack, as heretofore stated, constitutes a very important feature of the invention, as it permits ready access to all parts of the case, so that the latter may be easily and thoroughly cleaned and maintained in a perfectly sanitary condition, which is especially desirable in receptacles of this character. When the rack forms a permanent part of the crate, it is impossible to obtain access beneath the same to properly clean the bottom of the receptacle, where all the settling of sediment and objectionable substances takes place; but with my invention the rack is readily removed, so that access to all parts of the receptacle is gained, and the rack itself may be thoroughly cleaned at all points.

While I have shown the rack as made from band or ribbon metal, as the latter is a very satisfactory material to employ, it will, however, be understood that wire or other suitable material may be employed, if desired.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A reversible bottle-rack for a crate, comprising upper and lower sets of transverse and longitudinal bars, the bars in each set crossing each other in spaced relation to provide pockets for the bottles, the bars in one set being in vertical alinement and parallel to the corresponding bars in the other set, and the ends of the bars of the upper and lower sets being connected by legs or supports whereby the said sets are maintained in spaced relation.

2. A reversible bottle-rack for a crate comprising upper and lower sets of transverse and longitudinal cross-bars, the bars in each set crossing each other in spaced parallel relation to provide pockets for the bottles, the bars in one set being in vertical alinement with and parallel to the corresponding bars in the other set, the corresponding alining bars in the upper and lower set being formed of a single band of metal bent to form said bars and vertical supports or legs connecting the ends of said bars.

3. A reversible bottle-rack of skeleton form, consisting of a plurality of endless loops each formed from a single strand of metal, said loops being arranged in spaced parallel relation and some of which are located at right angles to and overlap others, whereby to provide a plurality of cells, and the strands of said loops being rigidly connected at their points of intersection.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBT. M. HARROVER.

Witnesses:
THOMAS DURANT,
J. GRANVILLE MEYERS.