MATERIAL HANDLING CONTAINER WITH OPENABLE SIDEWALL

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ABSTRACT
A wire mesh container comprises a plurality of upstanding sidewalls connected to a horizontally disposed bottom wall to define a storage compartment therein. Parallel track guides are disposed along the vertically disposed edges of one of the sidewalls and at the top of the container to permit such sidewall to be moved from its normally upstanding and closed position to a horizontally disposed and open position at the top of the container.

8 Claims, 5 Drawing Figures
MATERIAL HANDLING CONTAINER WITH OPENABLE SIDEWALL

BACKGROUND OF THE INVENTION

Manufacturing plants, having production line capabilities, normally utilize open top tubs or like containers for transporting various parts in-plant. Conventional tubs comprise a rectangular box section having solid, rigid sidewalls and are adapted to be stacked on each other for storage purposes. In such a stacked position, the parts retained in one of the lower tubs are inaccessible and can only be retrieved upon removal of the tubs which are stacked thereon. In addition, many such parts must be cleaned by a washing process or the like which necessitates removal of the parts from a tub and subsequent replacement therein after such cleaning.

SUMMARY OF THIS INVENTION

An object of this invention is to overcome the above, briefly described problems by providing an economically open topped container adapted to be opened from its side, even when stacked under one or more other containers. The container comprises a horizontally disposed bottom wall and a plurality of vertically disposed sidewalls connected thereto to define a storage compartment in the container. Continuous track guide means, disposed vertically along at least one of the sidewalls and horizontally at the top of the container, cooperate with slide means on such one sidewall to permit it to be moved from its closed position to an open position at the top of the container. In the preferred embodiment of this invention, the bottom and sidewalls each comprise wire mesh screening to facilitate cleaning of parts while they are retained in the container.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects of this invention will become apparent from the following description and accompanying drawings wherein:

FIG. 1 is an isometric view illustrating a container embodying this invention;

FIG. 2 is a partial sectional view taken in the direction of arrows II—I in FIG. 1;

FIGS. 3 and 4 are sectional views taken in the direction of arrows III—III and IV—IV, respectively, in FIG. 2; and

FIG. 5 is an isometric view illustrating two of the containers stacked on a conventional tub-like container.

DETAILED DESCRIPTION

FIG. 1 illustrates an open top material handling container comprising a horizontally disposed bottom wall and four vertically disposed sidewalls, connected together to the bottom wall to define a hexahedral shaped storage compartment therein. The bottom wall or floor comprises a rectangular frame comprising rigid bars suitably secured together and to a pair of reinforcing bars by welds or the like. Upstanding guides are secured to the bottom wall adjacent to front sidewall. A flat, wire mesh screening is disposed on and is secured to the bottom frame to support parts which are disposed in the container's compartment. A pair of parallel, U-shaped members or support brackets are secured beneath the bottom frame and have a pair of upstanding brace members secured thereto and to a respective bar. Downwardly facing and horizontally spaced notches are formed in the brace members to adapt them for stacking purposes hereinafter described.

An angle bar is secured to the bottom frame at each corner of the container and terminates at its lower end at a generally conically shaped pedestal extending vertically below bottom wall. Back sidewall comprises a channel bar, secured to parallel channel bars and bars. Bars, Bars, and Bars are thus structurally integrated to define a rigid rectangular frame for each sidewall with each having a flat, wire mesh screening secured thereon.

Front sidewall or gate comprises a wire mesh screening, having a lateral width slightly less than the lateral distance between adjacent angle bars, secured to a pair of vertically spaced and horizontally disposed rods or slide members. As shown in FIG. 2, the ends of the transversely extending rod comprise slide means normally positioned in first parallel guide portions of a continuous track guide means, disposed vertically along the sides of front sidewall. Each guide portion is defined between a flange of a respective front angle bar and a parallel flange of a second angle bar secured thereto (FIG. 3).

The continuous guide means further comprises horizontally disposed and parallel guide portions (one shown) each defined between parallel rods secured to a respective channel bar (FIG. 4). As illustrated by phantom lines in FIG. 2, the movable front sidewall is thus adapted for movement from its normal, vertically disposed closed position to a horizontally disposed open position at the top of the container.

FIG. 5 illustrates two containers stacked on each other by engaging each pedestal of upper container with a socket defined at the upper end of a respective angle bar of container which is positioned thereunder. Container comprises a modification of container wherein a back sidewall thereof has been constructed like front sidewall (shown in its open position) to be moved to an open position in a common guide means. Such guide means would, of course, duplicate parallel guide portions on the sides of second movable sidewall or gate. The containers are shown stacked on a conventional tub-like container, having hairpins (one shown) secured thereon to engage notches of each overlying support member.

It should be noted that containers and, due to their wire mesh bottom wall and sidewall construction, are adapted to have their retained parts washed or otherwise suitably cleaned without removing such parts from the container. In addition, movable sidewalks and facilitate removal of the parts while the containers remain in situ. The containers can be handled by a fork-lift truck, a platform lift truck or by pallet jacks. For example, the open box-like construction of the containers facilitates reception of the tines of a fork-lift truck thereunder, on any one of its four sides, for carrying purposes.

What is claimed is:

1. An open top container comprising a horizontally disposed bottom wall, the container comprising three vertically disposed sidewalls each extending vertically substantially the full height and width of said container and connected together and to said
bottom wall to define a storage compartment in said container, each of said bottom and sidewalls comprising a plurality of vertically and horizontally disposed bars, a fourth vertically disposed sidewall comprising a rigid rectangular frame including a plurality of vertically and horizontally disposed bars extending substantially the full height of said container but having a width slightly less than the width of said container, continuous guide means, comprising first parallel guide portions disposed interiorly on a pair of said vertically disposed bars at said one sidewall and second parallel guide portions disposed interiorly on a pair of said horizontally disposed bars at the top of said container, slide means secured to opposite sides of said fourth sidewall, a given distance below the top thereof and engaging said guide means to permit movement thereof from its normal, vertically disposed closed position to a horizontally disposed open position at the top of said container and upstanding guide means rigidly mounted on the exterior of the edge of said bottom wall which corresponds to the bottom edge of said fourth sidewall when in its normal vertically disposed closed position, said upstanding guide means having a vertical height less than said given distance of said slide means below the top of said fourth sidewall whereby said bottom edge of said fourth sidewall is received behind said upstanding guide means when said fourth wall is in its normal vertically disposed closed position to rigidly restrain said fourth sidewall against horizontal forces exerted outwardly thereon from the interior of said container, and whereby said fourth sidewall may be raised vertically said given distance to disengage said bottom edge thereof from said upstanding guide means before it is pivoted to said horizontally disposed open position thereof at the top of said container by the engagement between said slide means thereon and said continuous guide means.

2. The container of claim 1 wherein each of said bottom and sidewalls further comprises wire mesh screening secured to a respective one of said frames to fully cover the same.

3. The container of claim 1 wherein said slide means comprises at least one slide member secured to and extending transversely across the full width of said one sidewall to have its ends disposed in said guide means.

4. The container of claim 3 wherein two of said slide members are secured to said one sidewall in horizontally disposed and vertically spaced relationship thereon.

5. The container of claim 1 wherein each of said vertically disposed bars constitutes an angle bar terminating at its lower end at a pedestal extending vertically below said bottom wall and terminating at its upper end at a socket constructed to receive a pedestal of another container stacked thereon.

6. The container of claim 1 further comprising a pair of parallel support brackets secured to said container, beneath said bottom wall, to define enlarged openings therethrough adapted to receive the tines of a fork-lift truck therein.

7. The container of claim 6 further comprising a brace secured between each of said support brackets and said bottom wall and having downwardly facing and horizontally spaced notches formed thereon adapted to engage a hairpin bracket of an underlying container therein.

8. The container of claim 1 wherein a front sidewall and a parallel back sidewall of said container are each movably mounted thereon by means of said guide means and said slide means.

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