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NESTABLE-STACKABLE RECEPTACLE

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2 Sheets-Sheet 2

Fig. 5

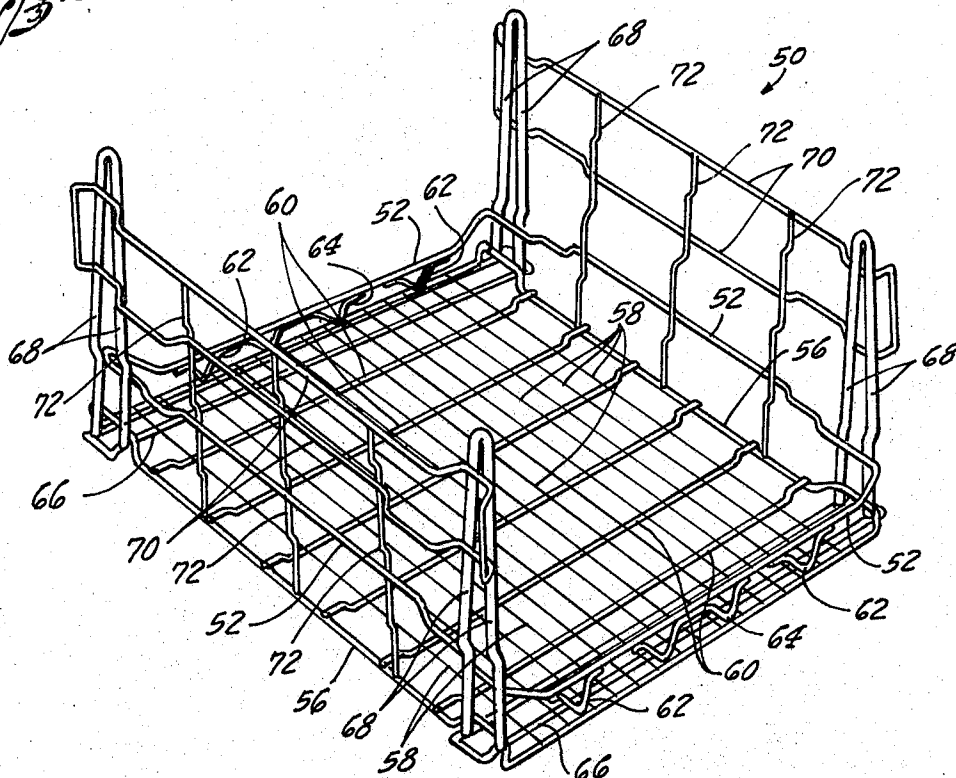
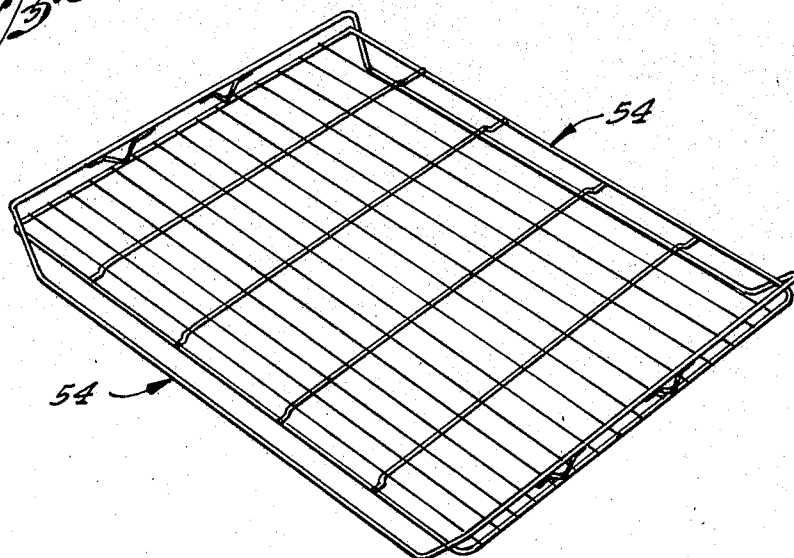


Fig. 6



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NESTABLE-STACKABLE RECEPTACLE

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U.S. Cl. 220—19

7 Claims

ABSTRACT OF THE DISCLOSURE

An improved wire-formed tray or receptacle is provided which may be stacked or tiered with other like receptacles when loaded with merchandise for transportation and display purposes, and which may be nested into other like receptacles when empty for storage and for return to the distribution center with a minimum of space requirements. The improved nestable-stackable receptacle of the invention is constructed in a manner so as to withstand relatively heavy loads, such as meat, without any likelihood of the sides collapsing, or of the receptacle jamming with other similar receptacles on which it is stacked, or for the receptacle being subject to any other damage.

This application is a continuation-in-part of copending application Ser. No. 774,401 which was filed Nov. 8, 1968 now abandoned.

BACKGROUND OF THE INVENTION

U.S. Pat. 3,082,879, which issued Mar. 26, 1963, to the present inventor, describes a wire-formed tray or receptacle which is stackable and nestable, as is the receptacle of the present invention. As described in the aforesaid patent, receptacles of this general type find wide use in the transportation and display of merchandise. For example, when the receptacles described in the patent are used in conjunction with bakery goods, they may be loaded at the bakery and stacked on top of one another into individual tiers. The tiers may then be transported by truck to the retail stores and markets. The loaded, tiered receptacles, upon their arrival at such a retail outlet, are moved on dollies to the desired positions on the floor of the market where the products may be displayed for purchase. Then, when the receptacles are empty, they may be nested into one another for space conservation when they are stored and when they are returned to the bakery.

The receptacles of the present invention are generally similar to those described in the aforesaid patent. However, the receptacles described in the patent are intended primarily for use in conjunction with light merchandise, such as bakery products; whereas, the trays of the present invention are constructed in a different manner, so as to make them more appropriate for supporting heavier loads, such as meats.

SUMMARY OF THE INVENTION

The receptacle of the present invention, in the embodiment to be described, has open ends for the convenient withdrawal of the merchandise therein. Each receptacle has upper projections, in the form of upstanding wire loops, at the corners of its upper edge, and each receptacle has corresponding horizontal wire loops formed at the corners of its bottom and in respective alignment with the aforesaid upper projections, the receptacle of the invention may be stacked on a like receptacle by placing its horizontal bottom loops over the upstanding upper loops of the lower receptacle. In this way, the receptacles stacked on one another in each tier may be firmly and rigidly held in their stacked position.

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Likewise, each receptacle may be nested down into a lower receptacle, merely by displacing it longitudinally with respect to the lower receptacle, and permitting it to move down into the lower receptacle, as will be described.

The receptacles of the present invention are constructed so that an upstanding elongated looped wire side bracket extends from each horizontal bottom loop of the receptacle to the corresponding upstanding upper loop. With such a construction, any load supported on the upper projections of a receptacle is directly supported by the compressive stress of the corresponding side brackets, and no bending stress or strains are relied upon for load support.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a receptacle constructed in accordance with the concepts of the invention;

FIG. 2 is a partial side elevation showing two receptacles, of the type illustrated in FIG. 1, nested within one another;

FIG. 3 is a side elevation, showing a partial view of the two receptacles, in a first stacked condition for support, for example, on a dolly in an inclined manner, so that the merchandise therein is fed by gravity towards the forward edge of the receptacle, as the individual items are removed;

FIGURE 4 is a side elevation showing a partial view of two receptacles of the type shown in FIGURE 1, in a second stacked condition, with one receptacle directly over the other, so as to constitute a vertical tier for support on a horizontal surface;

FIGURE 5 is a perspective view of a receptacle constructed in accordance with a second embodiment of the invention; and

FIG. 6 is a perspective view of an insert tray which may be supported within the receptacle of FIG. 5, effectively to provide a shelf for the receptacle of FIG. 5.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENTS

The receptacle illustrated in FIG. 1 is indicated generally as 10. In the receptacle 10, a first wire rod 12 extends as a closed rectangular loop around the periphery of the receptacle. The closed rectangular loop formed by the wire rod 12 has spaced and parallel side portions as shown, and spaced and parallel end portions. The side portions of the loop formed by the wire rod 12 define the upper side edges of the receptacle, and the end portions of the loop formed by the wire rod 12 are displaced down from the side portions into the plane of the bottom of the receptacle.

A plurality of spaced and parallel wires 14 extend between the end portions of the aforesaid rectangular loop formed by the wire rod 12. The wires 14 are welded, otherwise affixed to the rod 12, and they constitute the bottom of the receptacle. The parts of the wire rod 12 which form the upper side edges of the receptacle are looped to form four individual upper support members 16. Each such loop is turned inwardly from the respective side edges, and each has an extremity which is turned up and which extends upwardly beyond the plane of the upper side edges formed by the wire rod 12.

The receptacle 10 also includes two wire rods 18 which extend as transverse loops across the bottom wires 14 to be positioned directly under corresponding pairs of the upper support members 16. The bottom wires are fixed to the loops formed by the wire rods 12, for example, by welding. The ends of the loops formed by the wire rods extend beyond the side limits of the bottom wires 14, and they define horizontal lower support loops 18a for the receptacle. The lower support loops 18a are positioned directly under corresponding ones of the upper support members 16, in vertical alignment therewith.

The receptacle 10 further includes wire rods 20 which are looped to form four side brackets. The side brackets are each shaped into a continuous loop, and each extends between respective ones of the upper support members 16 and lower support loops 18a. Each side bracket formed by the wire rod 20 has its lower end turned over to rest on a corresponding loop 18a, as shown. The lower ends of the side brackets are welded, or otherwise affixed to the loops 18a. The upper ends of the side brackets engage the underside of the intermediate portions of each of the upper support members 16, and they are welded or otherwise affixed thereto.

Therefore, the side brackets 20 provide a positive support between the upper and lower support members of the receptacle. This means that a substantial weight may be stacked on the receptacle, without any tendency for the sides to collapse or bend, since the major portion of the weight is taken by the compressive strength of the wire rods forming the upright side brackets 20.

A further stiffening rod 22 may be provided, and the stiffening rod 22 extends transversely across the center of the bottom of the receptacle, as formed by the wires 14. The wires 14 may be welded to the transverse rod 22. A side rod 24 extends down each side of the bottom of the receptacle, as shown. These latter side rods are welded, or otherwise attached, to the loops 18, to the rod 22, and to the corners of the continuous looped rod 12. The side rods 24 have rectangular loops 24a formed therein which permit out-of-line stacking of the receptacles, as shown in FIG. 3, for inclined tiering thereof for the gravitational feed of merchandise displayed therein, as described briefly above.

Finally, the receptacle 10 has a continuous looped rod 26 extending around its periphery as a closed rectangular loop. The loop formed by the rod 26 has side portions displaced down from the side portions of the loop formed by the wire rod 12. The loop formed by the rod 26 has end portions which are displaced down from its side portions but which are displaced up from the end portions of the rod 12. The end portions of the loop formed by the rod 26 prevent the merchandise from sliding out of the ends of the receptacle. The loop 26 defines loops 26a which engage the upper support members 16 of a lower receptacle when like receptacles are nested, as shown in FIG. 2, so as to prevent jamming of the nested receptacles.

It will be observed that the two receptacles shown nested in FIG. 2 are displaced longitudinally with respect to one another. In order to form a stable tier, when a multitude of such receptacles are nested one above the other, they should be successively nested displaced first in one direction and then in the other. FIG. 3, as noted above, shows how the receptacles may be stacked on one another in a vertical displaced relationship for gravity feed of the merchandise, as explained above. FIG. 4, on the other hand, shows how the receptacles may be stacked one on top of the other, in vertical alignment. In the latter case full use is taken of the support capabilities of the side brackets 20.

The embodiment of FIG. 5 is similar in some respects to the embodiment of FIG. 1, except that the construction is somewhat different. Moreover, the latter embodiment is not capable of displaced stacking, such as shown in FIG. 3 for the embodiment of FIG. 1. However, the latter embodiment includes an intermediate support rod, as will be described, which permits a removable tray to be supported within the receptacle, so as to constitute a shelf permitting relatively small merchandise to be carried within the receptacle in two levels without crushing.

The receptacle shown in FIG. 5 is of a somewhat different construction than the receptacle of FIG. 1, although it is predicated on the same basic concepts. The latter receptacle is indicated generally as 50. In the receptacle 50, an intermediate wire rod 52 extends as a closed rectangular loop around the periphery of the receptacle.

The closed rectangular loop formed by the wire rod 52 has spaced and parallel side portions, as shown, and spaced and parallel end portions.

The side portions of the loop formed by the wire rod 52 provide supports for the wire formed trays 54 shown in FIG. 6, and permit the tray to be supported in a spaced relationship from the bottom of the receptacle 50, so that two tiers of goods may be supported within the receptacle without crushing. The end portions of the loop formed by the wire rod 52 are displaced down from the side portions toward the bottom of the receptacle, so as to permit goods to be inserted into and withdrawn from the receptacle, and yet to form a barrier to prevent goods from sliding out.

A further wire rod 56 extends around the periphery of the receptacle 50 at the bottom of the receptacle, and the wire rod 56 forms a support for bottom wires 58 which extend longitudinally in spaced parallel relationship, and which are welded to the end portions of the wire rod 56. The wire rod 56 also forms a support for transverse rods 60 which are of somewhat larger diameter than the bottom wires 58, and which serve to reinforce the bottom. A plurality of V-shaped individual wire rods 62 and 64 extend between the end portions of the wire rod 52 and of the wire rod 56, so as to complete the barrier referred to above.

The bottom support members for the receptacle of FIG. 5 are formed by continuous loops of wire rods 66 which extend across the receptacle at each end thereof, and which are welded to the lower rod 56. The upper supports are formed by V-shaped wire rods 68 of relatively large diameter, and which are welded to the rods 66, as well as to the rods 56 and 52.

The sides of the receptacle are formed by wire rods 70 which extend as closed loops between the V-shaped upright members 68 on both sides of the receptacle, and which are welded or otherwise affixed thereto. Also, upright rods 72 are provided at each side to complete the side structure, as shown.

As in the previous embodiment, the side brackets 68 provide a positive support between the upper and lower support members of the receptacle, so that a substantial weight may be stacked on the receptacle, without any tendency for the sides to collapse or bend.

The invention provides, therefore, an improved receptacle which is nestable and stackable, and which includes side brackets interposed between its upper and lower support members. This construction permits the receptacle to be stacked on other like receptacles while bearing a material load; and to support similarly loaded like receptacles stacked on top of it. The receptacle of the invention is capable of being easily stacked in vertical alignment or, insofar as the first embodiment is concerned, in a displaced relationship for gravity feed. Moreover, each receptacle may be easily and conveniently nested into a like receptacle, without any tendency for jamming to occur. As an additional feature, the second embodiment is constructed so that it may receive an intermediate tray, and support the tray firmly in an intermediate position, so as to permit relatively small merchandise to be supported within the receptacle at two levels, and without tendency of crushing.

What is claimed is:

1. A receptacle capable of being stacked or nested within receptacles of like construction, including: a first wire rod extending as a closed rectangular loop around the periphery of the receptacle, said closed rectangular loop having spaced and parallel side portions and spaced and parallel end portions, wire means extending across said loop defining a bottom for the receptacle; means including wire means affixed to said loop defining sides for the receptacle in substantially coplanar relationship with said side portions of said loop and extending upwardly from the plane of said bottom; upper support members supported adjacent each corner of the upper edge of the

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aforesaid sides of said receptacle; a plurality of lower support members mounted adjacent said bottom in substantially coplanar relationship therewith and in vertical alignment with respective ones of said upper support members; and elongated side brackets extending directly between each of said lower support members and corresponding ones of said upper support members.

2. The receptacle defined in claim 1, in which said wire means defining said bottom comprises a plurality of spaced and parallel wires extending from one of said end portions to the other and affixed to said end portions and a plurality of spaced and parallel transverse support rods extending under said wires from one side of the receptacle to the other.

3. The receptacle defined in claim 1, in which said upper support members are formed by loops of said first wire rod.

4. The receptacle defined in claim 1, in which said lower support members are formed by the looped ends of respective ones of a pair of elongated continuous looped wire rod members respectively extending transversely across the bottom of said receptacle.

5. The receptacle defined in claim 1, in which said elongated side brackets are each formed as a continuous elongated looped wire rod, with one end of each loop being affixed to the corresponding one of said upper support members, and with the other end of each loop

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being bent over and affixed to respective ones of said lower support members.

6. The receptacle defined in claim 1, in which said elongated side brackets are each formed as an elongated inverted U-shaped wire rod, with the apex thereof forming a corresponding one of said upper support members and with the lower end thereof affixed to a corresponding one of said lower support members.

7. The receptacle defined in claim 1, and which includes a second wire rod extending as a closed rectangular loop around the periphery of said receptacle at an intermediate position therein, and a tray adapted to be positioned within said receptacle and to be supported on said last-named closed rectangular loop.

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U.S. Cl. X.R.

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