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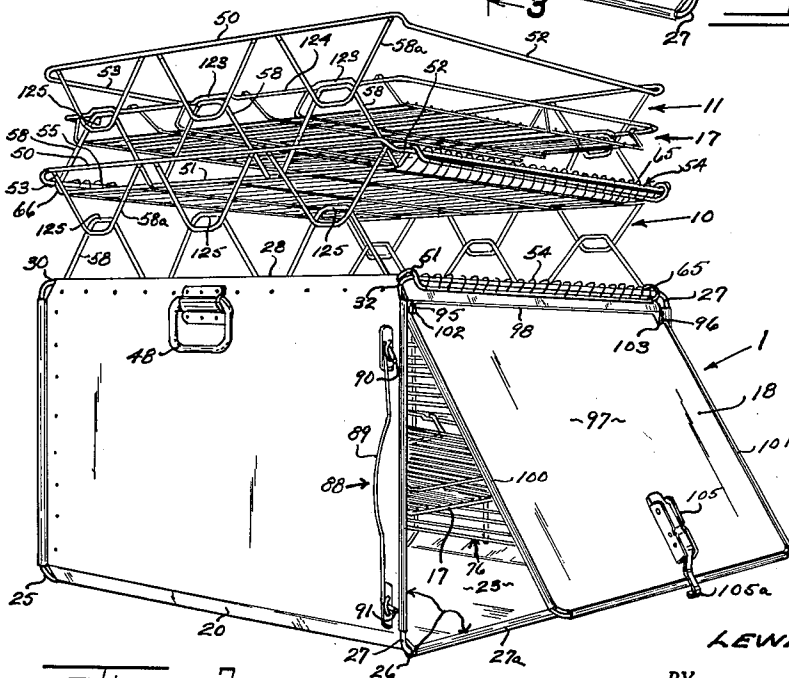
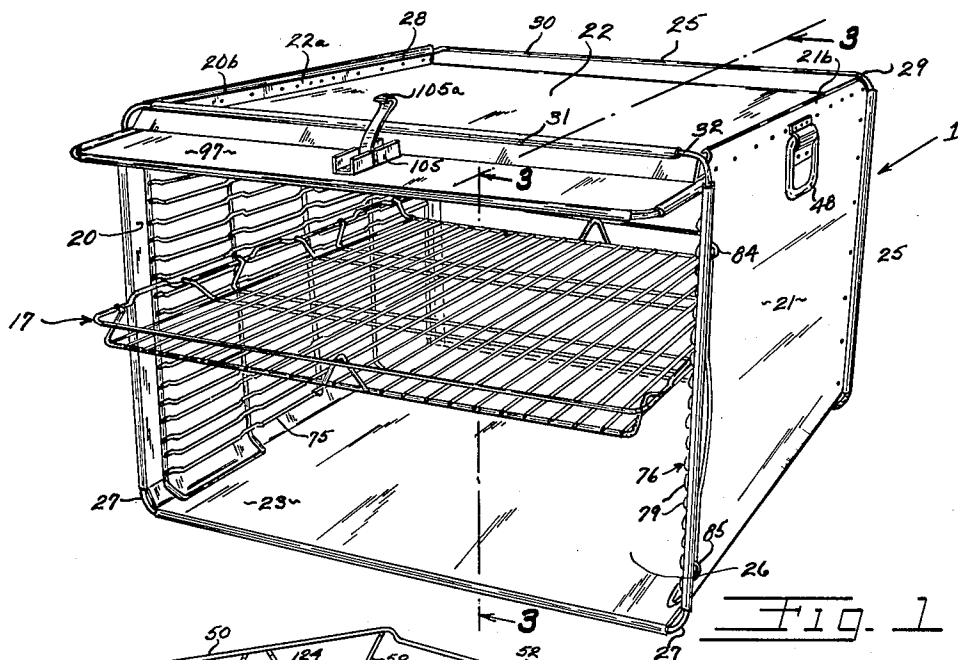
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3,079,206

KNOCK-DOWN AND STACKABLE CABINET WITH ACCESSORIES

Filed Nov. 18, 1959

6 Sheets-Sheet 1



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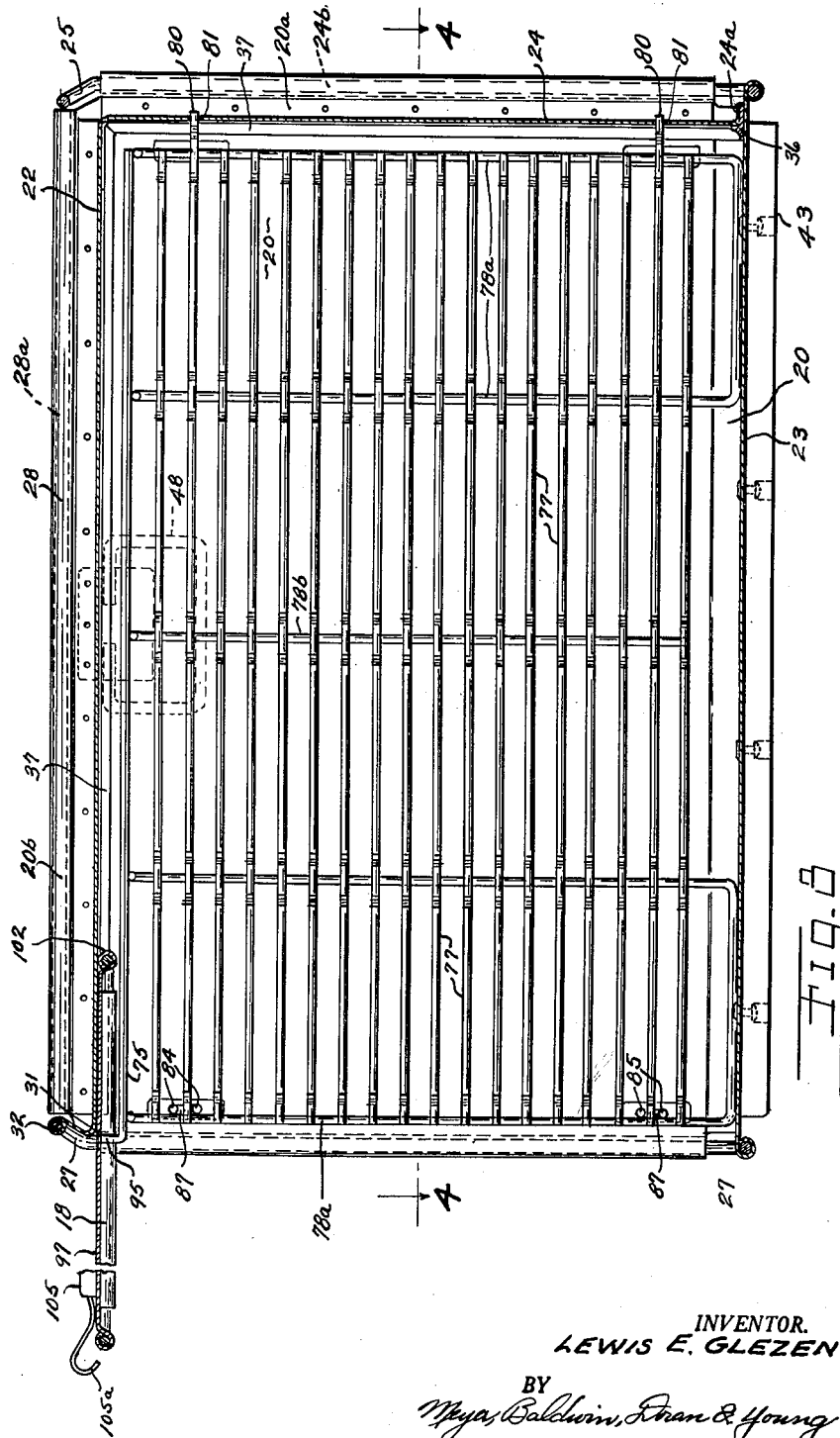
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KNOCK-DOWN AND STACKABLE CABINET WITH ACCESSORIES

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6 Sheets-Sheet 2



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KNOCK-DOWN AND STACKABLE CABINET WITH ACCESSORIES

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6 Sheets-Sheet 3

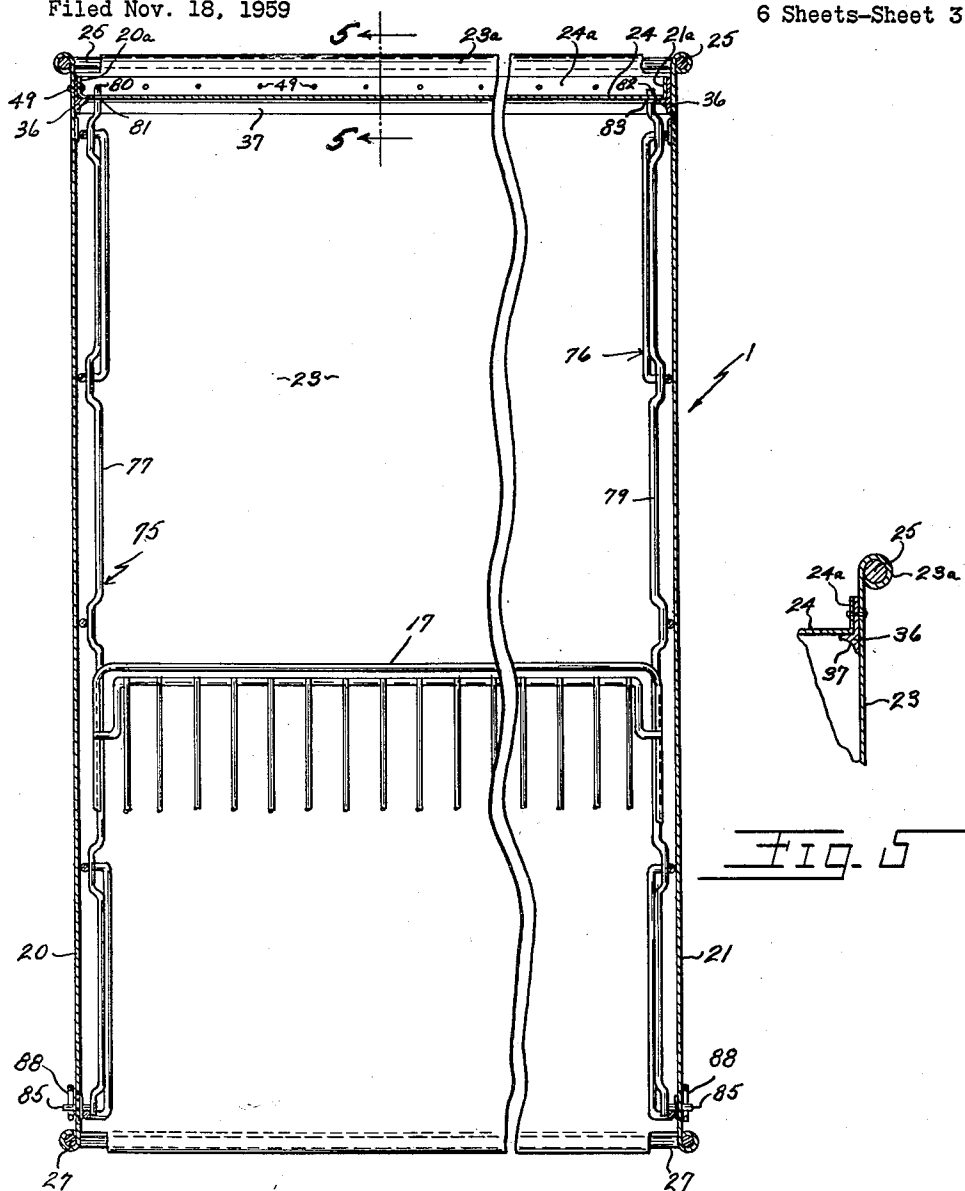


Fig. 5

Fig. 4

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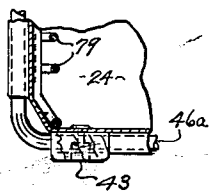
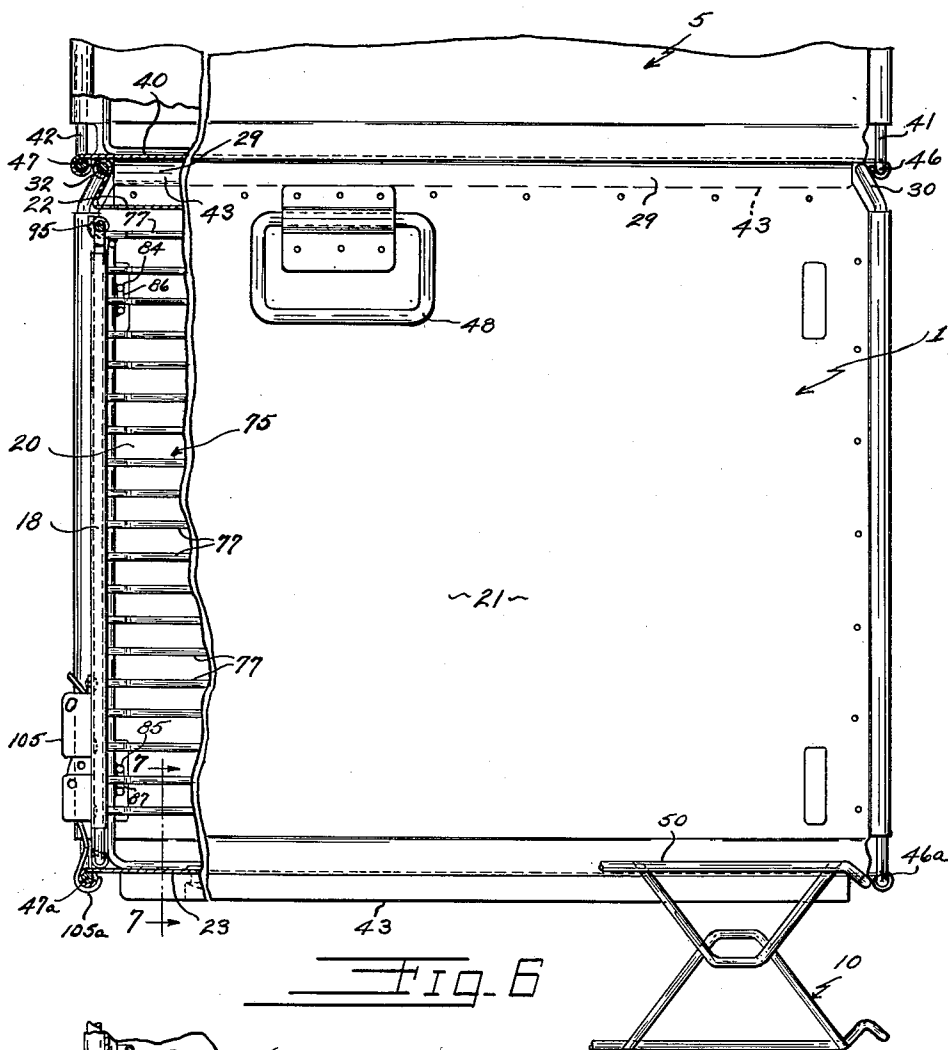
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KNOCK-DOWN AND STACKABLE CABINET WITH ACCESSORIES

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6 Sheets-Sheet 4



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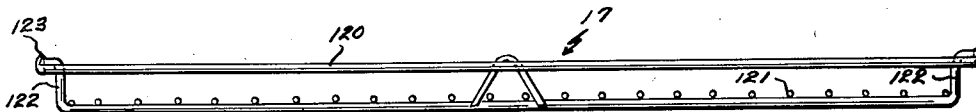
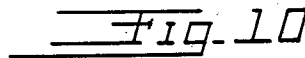
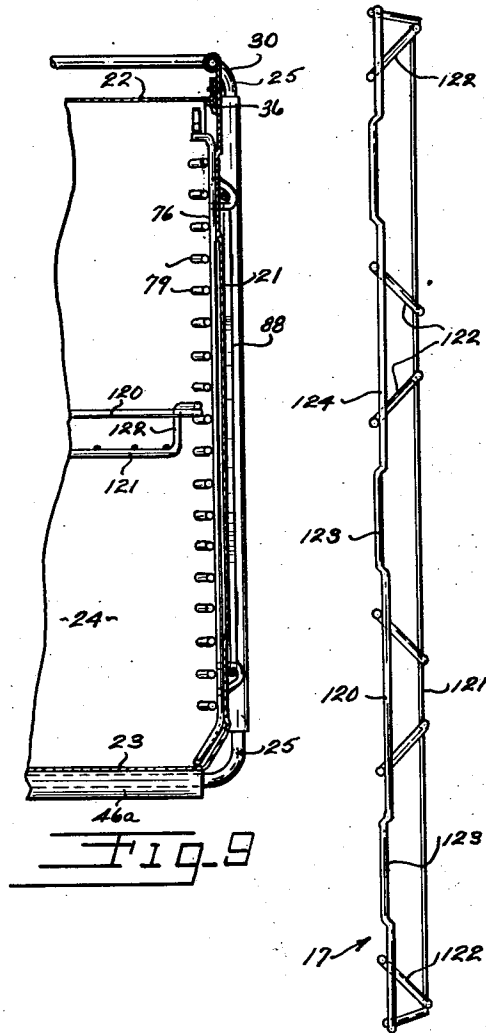
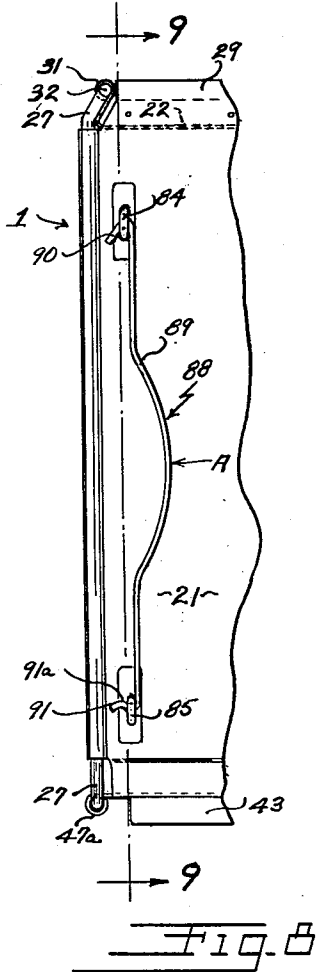
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KNOCK-DOWN AND STACKABLE CABINET WITH ACCESSORIES

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6 Sheets-Sheet 5



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KNOCK-DOWN AND STACKABLE CABINET WITH ACCESSORIES

Filed Nov. 18, 1959

6 Sheets-Sheet 6

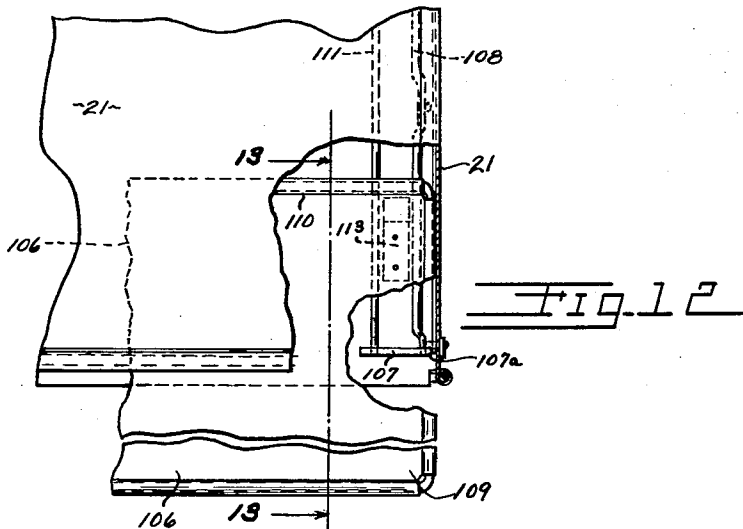


Fig. 12

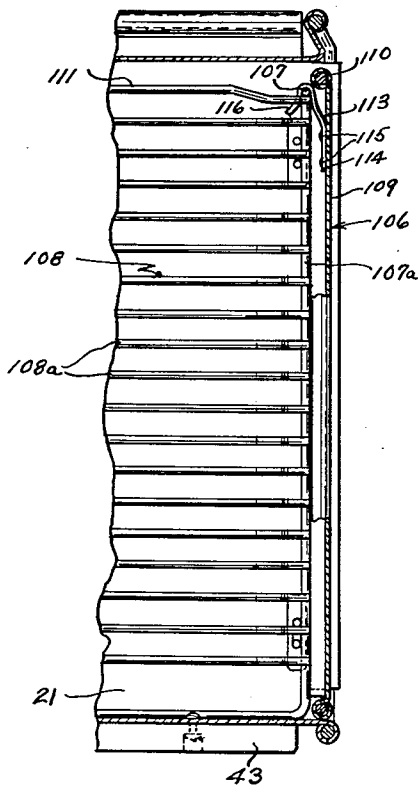


Fig. 14

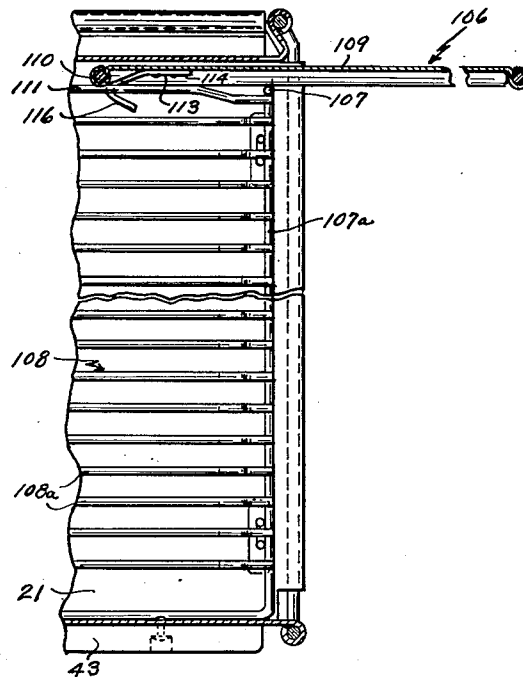


Fig. 13

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3,079,206

KNOCK-DOWN AND STACKABLE CABINET WITH ACCESSORIES

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Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 18, 1959, Ser. No. 853,910
5 Claims. (Cl. 312-109)

The present invention relates to tierable cabinets and tierable racks and particularly to tiered assemblies thereof which can be put together quickly, used for transporting food products, and thereafter disassembled quickly for thorough cleaning of the cabinets and racks.

It is desirable to have cabinets and racks which can be easily stacked in a variety of arrangements in order to transport particles of various character, for instance, food products such as bread, doughnuts, cakes, pies, vegetables, fruits and the like for short distances such as from wholesalers to retailers. However, the assembly of cabinets and racks used should be so constructed that it can be easily knocked down for thorough cleaning. The cabinets, in particular, should be free of obstruction for cleansing when disassembled since it is of great advantage to be able to thoroughly and quickly clean the cabinet and yet avoid any possibility of food particles remaining therein to decay and spoil.

It is therefore, an object of the present invention to provide a cabinet having upper and lower support means which is adaptable for tiering with cabinets of like construction and also which can be easily disassembled for cleaning.

It is an object to provide a cabinet which can be easily tiered with a cabinet of like construction and/or a rack having a stacked height which is an aliquot part of the cabinet height such as one-third the height of the cabinet so that an assembly of one cabinet and three racks is the same height as an assembly of two cabinets.

It is an object of the present invention to provide a tierable cabinet having a novel means of supporting shelves therein which is readily detachable for cleaning the interior of the cabinet.

It is an object to provide a cabinet adapted for tiering with cabinets of like construction which has a cabinet door hingeably mounted on the front of cabinet in a novel manner.

It is an object to provide a relatively shallow rack shelf for an assembly of tierable cabinets and racks, which is adapted for use as a shelf inside the cabinet or for use as a divider in the rack to make two shelves available therein for holding relatively flat baked foods such as doughnuts, rolls, etc.

It is an object to provide a rack shelf adapted for use inside a cabinet and also adapted for nesting with another shelf.

It is an object to provide a shelf having inside dimensions which fit both a cabinet and a rack and also provide said rack and said cabinet with outside dimensions which permit the stacking of either on the other.

Other objects will be apparent from the specification, appended claims, and the drawings, in which:

FIG. 1 is a perspective front elevational view of a cabinet having a rack shelf therein and which is adapted for tiering with a cabinet of like construction according to the present invention;

FIG. 2 is a perspective elevational view showing the cabinet of FIG. 1 supporting tierable racks thereon according to the present invention;

FIG. 3 is a sectional view of the cabinet with the shelf removed and taken along the line indicated at 3-3 in FIG. 1;

FIG. 4 is a sectional view of the cabinet showing the

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bottom of the cabinet with the shelf partially removed and taken along the line indicated at 4-4 in FIG. 3;

FIG. 5 is a fragmentary sectional view taken along the line indicated at 5-5 in FIG. 4;

FIG. 6 is a fragmentary side elevational view of the cabinet of FIG. 1 tiered with a cabinet of like construction with parts broken away and shown in section and with a partial view of a rack tiered beneath the lower cabinet;

FIG. 7 is a fragmentary sectional view taken along the line indicated at 7-7 in FIG. 6;

FIG. 8 is a fragmentary side elevational view of the cabinet of FIG. 1 showing a detachable means of fastening the shelf guide members to the cabinet walls;

FIG. 9 is a fragmentary side elevational view taken along the line indicated at 9-9 in FIG. 8;

FIG. 10 is a side elevational view of the rack shelf of the present invention;

FIG. 11 is a front elevational view of the rack shelf;

FIG. 12 is a fragmentary top view showing an alternate embodiment of a cabinet and a door thereon in an open position and having parts broken away and shown in section;

FIG. 13 is a fragmentary side elevational view taken along the line indicated at 13-13 in FIG. 12 showing the door, top and bottom of the cabinet in section; and

FIG. 14 is a fragmentary side elevational view of the cabinet and the alternate embodiment of the door therefor in a closed position.

The present invention provides a cabinet and a rack which are tierable with each other, or the cabinet is tierable with other like cabinets, or the rack with racks of like structure. The cabinet is provided with a means defining upper and lower supports for tiering with a second cabinet of like construction or with one or more racks. The cabinets and racks are adapted for use in transporting and storing food. Even though they may be assembled together in a variety of ways, the resultant assemblies are easily and quickly knocked down for cleaning or for re-stacking.

Adding to the versatility of the tierable cabinets and racks above discussed, other features of the present invention are the provision of supporting means for holding a plurality of shelves in the cabinet, an easily detachable mounting means for holding the supporting means in place, means for hingeably holding a door on the front of the cabinet, and means for dividing or shelving either the interior of the cabinet or the rack, or both.

Thus, a shelf has been provided having inside dimensions which fit both a cabinet and a rack and also provide said rack and said cabinet with outside dimensions which permit the stacking of either on the other.

Also adding to the utility of the assemblies, the cabinets are preferably made of aluminum which makes the assemblies light, strong, and corrosion resistant.

Referring to the drawings, FIG. 1 shows a cabinet 1 adapted for tiering with a second cabinet 5 of like construction (see FIG. 6) or with racks 10 and 11 (see FIG. 2). The present invention provides the cabinet 1 with a means of upper support for tiering with the cabinet 5, a means including shelf guide members for supporting a plurality of rack shelves 17, and a means of detachably fastening the shelf guide members to the cabinet. As previously indicated, the tiered racks 10 and 11 and cabinets 1 and 5, with shelves therein, are easily assembled for transporting food products and readily disassembled for cleaning.

Also as seen in the drawings, the cabinet 1 has a door 18 adapted to form a front therefor when the door is closed as shown in FIGS. 6 and 14. Means for hingeably mounting the door on the cabinet front will be discussed later.

Cabinet With Means Defining Support for Tiering With Cabinet of Like Construction

The cabinet 1 has a pair of generally parallel sides 20 and 21, a top 22, a bottom 23, and a generally rectangular back 24 having a frame member 25 of relatively large diameter spring wire extending around its periphery. The cabinet also has a rectangular front opening 26 having a front frame member 27 of large diameter spring wire extending around opening 26 along the four sides thereof. In accordance with the present invention, a means defining an upper support in a plane generally parallel to and spaced above the cabinet top is provided for tiering thereon a cabinet of like structure. The above described means comprises a pair of side flanges 28 and 29 located on parallel sides 20 and 21 respectively and located along top marginal edges thereof. These two flanges do not support a receptacle tiered above the cabinet but they do prevent relative lateral movement there. In addition to each of the flanges 28 and 29 which lie in the plane of upper support, the means defining the upper support also includes an upper leg 30 of the back frame member 25 which lies in the plane of upper support and is generally perpendicular to the pair of side flanges. The means also includes a front flange 31 along the front marginal edge of the top 22 lying in the plane of upper support and generally perpendicular to the side flanges 28 and 29 and parallel to upper leg 30. The flange 31 is looped to form a nearly tubular end portion. The means defining the upper support also includes an upper leg 32 of the front frame member 27 which passes through the tubular end portion.

As seen in FIGS. 2 and 6, the upper support of cabinet 1 is adapted to support a cabinet of like construction or a rack thereon or a combination of cabinets and racks. In FIG. 6, the cabinet 5 is stacked on top of cabinet 1 and supported thereon by the upper support means. The cabinet 5 is exactly like cabinet 1 and has a bottom 40, a back frame member 41, a front frame member 42 and a pair of wooden runners 43 rigidly fastened to the bottom 40. As seen in FIG. 6, the bottom 40 of the upper cabinet 5 rests and is supported on the upper leg (or back rail) 30, and front rail 31 of the upper support of cabinet 1. Movement of the cabinet 5 relative to cabinet 1 along its longitudinal axis is prevented by the abutting arrangement of the wooden runners and the front and back rails 30 and 31. Likewise the movement of cabinet 5 relative to cabinet 1 along a direction perpendicular to its longitudinal axis is prevented by the abutting arrangement of the wooden runners 43 and the side flanges 28 and 29. The wooden runners are only slightly shorter in length than the distance between the back rail 30 and the front rail 31 so that the runners nest between the rails for tierable storage. Each of the runners 43 are fastened on the bottom 40 in a position where its longitudinal axis is generally parallel to the side flanges 28 and 29 and the outside edge of runner 43 abuts and lies against one of the side flanges.

It is also seen in FIG. 6, that the back frame member 41 of cabinet 5 has a bottom back rail 46 which is parallel to and spaced slightly outwardly from back rail 30. Also the front frame member 42 of cabinet 5 has a bottom front rail 47 which is parallel to the front rail 31 and is spaced outwardly therefrom in a direction away from the back of the cabinet. It is thus seen that the bottom rails of cabinet 5 prevent horizontal movement thereof with respect to cabinet 1 and helps to keep the cabinet 5 stacked on cabinet 1.

It is also noted that cabinet 1, in turn has a bottom front and back rail construction. Again, as in cabinet 5, the distance between the bottom rails 46a and 47a is slightly greater than the distance between top rails 30 and 31.

Thus, as noted in FIG. 6, the bottom 40 of cabinet 5 is held in a position parallel to the top 22 of cabinet 1

and is generally spaced therefrom a distance equal to the height of the side flanges 28 and 29, the wooden runners 43 being generally of a height of about $\frac{1}{3}$ to $\frac{2}{3}$ the height of the side flanges. When the cabinet 5 is unstacked and placed on a floor, the wooden runners 43 serve as skids for the cabinet and, therefore, the bottom 40 is spaced from the floor a distance equal to the height of the runners.

It is seen from the preceding description that a variety of assemblies of tierable cabinets and racks readily and conveniently can be made and used to transport food products. For further ease in handling the cabinet 1, a pair of handles 48 are provided on the sides of the cabinet. Also, the cabinet and rack assemblies may be stacked on suitable movable mounting means such as a dolly (not shown).

The cabinet may be made from two large relatively flat sheets of aluminum of, say, 8 to 16 gauge in thickness, by folding one sheet to form the top 22 and back 24 of the cabinet and folding the other sheet to form the sides 20 and 21 and the bottom 23. The sheets may be formed with flanges adapted for securing the folded sheets together with suitable fastening means such as rivets.

As seen in FIG. 5, the bottom 23 has a flange 23a and the back 24 has a flange 24a. The bottom and back are fastened together by means of the suitable fasteners such as rivets 49. It is also noted in FIG. 5 that the flange 23a is looped at its free end to receive a portion of the back frame member 25 which was previously described.

In a similar manner, the flange 24b extends along the side edges of the back 24 and is secured to back flanges 20a and 21a of the sides 20 and 21 by rivets 49. The flanges 20a and 21a are also looped at their free ends to house the heavy wire back frame member 25.

The top 22 has side flanges 22a similar to the flange 24a just described. The top 22 is secured to sides 20 and 21 by its side flanges 22a which are riveted to the top side flanges 28 and 29 of the sides 20 and 21, respectively. The upper edges of sides 20 and 21 are respectively folded at 20b and 21b around large diameter wires 28a and 29a.

As seen in FIG. 5, a metal gasket strip 36 is disposed between the flanges 23a and 24a. The strip 36 has a marginal portion 37 which forms a beveled interior edge between the back 24 and the bottom 23 to prevent food particles from getting between the flanges and thus facilitate quick and thorough cleaning of the cabinet interior. Metal strips may also be inserted between flange 28 and side flange 22a of the top and between flange 29 and the other side flange 22a of the top 22. Thus, there is no chance for bread crumbs and the like to become lodged in cracks between the flanges, since there are no cracks along the folded juncture between the bottom 23 and the sides 20 and 21 or between the top 22 and the bottom 24.

Thus, a cabinet that is easily cleaned can be made conveniently and inexpensively from two sheets of metal and two wires.

Support Means for Cabinet Also Adapted for Tiering With Racks

As previously indicated the upper support means of cabinet 1 is also adapted to supporting a rack or series of racks. As seen in FIG. 2, rack 10 is supported in tiered relationship upon the cabinet 1 and rack 11, in turn, is tiered upon rack 10.

Racks 10 and 11 are of like construction and have a stacked height wherein each rack preferably uses space which is an aliquot part of the space occupied by one cabinet, and here shown are equal to a used space one-third of the height used by a cabinet in the stack so that an assembly of one cabinet and three racks is the same height as an assembly of two cabinets.

Thus an assembly of the present invention may comprise at least one cabinet and at least one rack having a height equal to an aliquot part of the height of the

cabinet. As seen in FIG. 2, each of the racks 10 and 11 has top and bottom frame members 50 and 51. Top frame member 50 has generally parallel front and back rack rails 52 and 53 while bottom frame member 51 has parallel front and back sides 54 and 55. Each of the racks 10 and 11 has a plurality of connector portions 58, 58a rigidly holding the top and bottom frame members in a spaced parallel position. The bottom frame member 51 has marginal support portions 65 and 66 adjacent to and parallel to the front side 54 and back side 55, respectively, which are adapted to engage the front rail 30 and back rail 31 of the cabinet or the front and back rails of a top frame member of a rack of similar construction. For example, a tiering arrangement of two racks is shown in FIG. 2 where it is noted that curved support portions 65 and 66 of the bottom frame member 51 of rack 11 engage the front rack rail 52 and back rack rail 53 of the rack 10.

As also noted in FIG. 2, upper front rack rail 52 and upper back rack rail 53 of top frame member 50 of rack 10 or 11 are adapted to support another rack of like construction or cabinet 1 in a tiered relationship.

Also adding to the convenience and utility of the tierable rack of the present invention, the racks can be stored separately apart from the cabinet. The rack 10 is adapted for tiering and nesting with a rack of like construction such as rack 11. The nesting of racks is easily accomplished holding one rack over another and tilting the upper rack endwise and sliding the lowermost projection of the forward end of the rack bottom (i.e., the front side 54) under the top rail of the bottom rack. The top rack is slid further so that its back end (i.e., the back lower rail 55) clears the back top rail 53 of the bottom rack. The top rack may then be dropped down into a nesting position, being directed to a centered position by slightly convergent connector portions of the racks.

Other features of the present invention, in addition to the tierable cabinets with upper support means and tierable racks for assembly therewith, are supporting and fastening means for holding a plurality of shelves in the cabinet, a removable mounting means for holding the shelf supporting means in position which is easily detachable and which leaves the interior of the cabinet unobstructed for cleaning, and means for hingeably swingably holding a door for the cabinet in a closed position.

Supporting and Fastening Means for Holding Shelf Guide Members in Cabinet and Removable Means for Easy Disassembly Thereof

A supporting means for holding one or more shelves 17 within the cabinet 1 is provided which comprises pair of shelf guide members 75 and 76, the member 75 being located along the inside of side wall 20 and parallel thereto, and member 76 being located along the inside of side wall 21 and parallel thereto. Since the shelf guide members are identical in construction, except that member 75 is for the left hand side and 76 is for the right hand side of the cabinet interior, only member 75 will be discussed in detail. The guide member 75 comprises a series of generally parallel shelf supporting wires 77 which are spaced from and parallel to side 20 of cabinet. Each of the supporting wires is generally parallel to side 20 and bottom 23 and horizontally aligned with a corresponding shelf supporting wire 79 of the other guide member 76.

As best seen in FIG. 3, a pair of U-shaped wires 78a and a center vertical wire 78b is provided to hold the wires 77 parallel to each other, each of the wires being welded to the wire 78b and the wires 78a. The central portion of the U-shaped wires 78a rest on the bottom 23 to help hold the member 75 in place. Also to hold members 75 in place, the forward wire 78a has loops 84 and 85 welded to one of its vertical legs as hereinafter described in more detail.

Each shelf guide member has two fastening means one near the front and back, respectively, of the cabinet

1, or other suitable container. The fastening means of member 75 near the back wall 24 of the cabinet comprises a pair of rearwardly extending interengaging parts 80 adapted to pass through the back wall 24, there being a pair of generally vertically aligned openings 81 through back wall 24 to receive the interengaging parts 80. In a similar manner, the shelf guide member 76 has rear fastening means comprising a pair of rearwardly extending projections or interengaging parts 82 which are adapted to pass through openings 83 in back wall 24. Thus the interengaging parts of the shelf guide member and the back wall hold the back end of the guide member in place when the parts are engaged. These parts are engageable and separable by movement of the guide member respectively into and out of the cabinet from the open front thereof. Even when the parts are engaged, the guide member can be moved away from its adjacent side wall. However when the front fastening means is secured, the shelf guide member is locked in its shelf supporting position.

Each of the front fastening means for each of the shelf guide members comprises a pair of loops or generally U-shaped lug members 84 and 85. The loops 84 and 85 are projections of the guide member adapted to pass through the side walls of the container, there being openings 86 and 87 in each of the side walls 20 and 21 to permit passage of loops 84 and 85, respectively. Each loop is adapted to extend laterally through the associated side wall when the parts are assembled. The upper opening 86 on side wall 20 is vertically aligned with opening 87 on side wall 20 and horizontally aligned with its corresponding opening 86 on side wall 21.

Removable securing means is provided for holding the front end of guide member 75 in place which is easily detachable to permit quick disassembly for cleaning the interior of the cabinet. The removable securing means includes a retainer wire 88 having an elongated central portion 89 and two hook shaped end portions 90 and 91 adapted to engage and hold the lug members 84 and 85, respectively, in a lug-engaging position on the outer face of the cabinet side 20 to hold the front end of guide member 75 in place. As previously indicated, another retainer wire 88 also holds the front end of shelf guide member 76 in place on the outer face of side 21 in the same manner as described for member 75. The central portion 89 of each retainer wire has spring characteristics and is easily flexed to disengage the hook portions 90 and 91 from the lug members to thereby remove the retainer wire from its lug engaging or locking position. The portion 90 is preferably generally V-shaped while portion 91 is generally L-shaped. When fastening the shelf guide member in place, the V-shaped portion 90 of retainer wire 88 preferably is first inserted through loop 84, and then the L-shaped portion 91 is forced into place, the free end of portion 91 passing through the loop 85. The bump 91a snaps through the loop 85 and prevents accidental disengagement. When disassembling the shelf guide member, the portion 91 can be removed from loop 85 only by simultaneously exerting pressure at the arrow A in FIG. 8, and thereafter the portion 90 can be disengaged from loop 85 to thereby remove retainer wire 88 from both loops. This retaining member 88 is disclosed and claimed per se in the co-pending application of Lewis E. Glezen, S.N. 845,024, filed October 7, 1959, now Patent No. 3,018,993, issued January 30, 1962.

Means for Hingeably Holding Door in a Closed Position

As indicated previously, another feature of the present invention is the provision of means for hingeably, swingably holding the door 18 for movement between an open and a closed position. The door is also movable to a partially open position as seen in FIG. 2 or a wide open position as seen in FIG. 1 where a major part of the door is stored inside the cabinet near its top.

The hingeable mounting means in FIGS. 1 to 11 comprises a pair of hook portions or upstanding projections 95 and 96 at the front end of the top of each of the guide members 75 and 76 and rigidly connected to the front ends of each of the top supporting wires 77 of shelf guide members 75 and 76. In the embodiment shown the top wires are of a one piece length with their front ends bent at approximately right angles upwardly away from the cabinet bottom 23 to form the projections 95 and 96 on the free end of the top wires.

The door 18, as seen in FIGS. 1, 2 and 3, has a main wall 97, a top marginal strip 98 thicker than the rest of the door therebelow, a bottom edge and sides 100 and 101.

The projections 95 and 96 terminate short of the cabinet top 22 by a distance which is greater than the thickness of the main wall 97 of the door but less than the thickness of the marginal strip 98. The marginal strip 98 lies back of the projections 95 and 96 when the door is assembled in the cabinet whereby the door may slide back in the cabinet parallel to the top 22. When the door is pulled out and swung down to a closed position, the door is held in the cabinet by the thicker marginal strip 98 which engages the projections 95 and 96.

The main wall 97 of the door is provided with wall openings 102 and 103 adapted to hook over the projections when the door is pulled forwardly as far as possible. Thus, it is seen that the door swings between its open and closed positions by means of the openings 102 and 103 hooked over said projections. As best seen in FIG. 2 opening 102 is located near the junction of top 98 with side 100 and the other opening 103 is located near the junction of top 98 with side 101. The door 18 can be moved to its full open position where it is swung generally parallel to the cabinet top 22 and held in the position where at least a major part of the door is adjacent the top and within the interior of the cabinet. In its open position shown in FIG. 1, the door 18 has been lifted and swung so the openings 102 and 103 are cleared from the projections 95 and 96 and then the door slid over top of the hooks in a direction toward the cabinet back 24. The rearward movement of the door is stopped by latching means 105 normally used to hold the door in the closed position. When the door is pushed inside the cabinet as far as permitted to a position where the door is out of the way for loading bread, cakes, doughnuts or the like into the cabinet, the door is supported near the top of the cabinet by its marginal strip 98 which rests on the top supporting wires 77 and the main wall 97 which rests on the projections 95 and 96. The height of each of the projections is about equal to the thickness of the marginal strip 98 so that the main wall 97 of the door 18 is generally parallel to the top of the cabinet when the door is in its open position.

An alternate and preferred means of hingeably holding a door 106 in a closed position is shown in FIGS. 12, 13 and 14. The preferred embodiment of the door 106 is shown in its open position in FIGS. 12 and 13 and in its closed position in FIG. 14.

The preferred hingeable mounting means, which eliminates the necessity of making openings in the door 106 such as the holes 102 and 103 in door 18, comprises a pair of mounting rails 107 which are provided at the upper front ends of a pair of shelf guide members 108. The guide members 108 are of a construction generally similar to that of guide members 75 and 76 having a plurality of shelf supporting wires 108a and are used for the purpose of guiding and supporting shelf members inside the cabinet. In the embodiment shown each vertical wire 107a, connecting the front ends of wires 108a, is bent horizontally inwardly at its upper end at right angles to side wall 20 or 21 whereby the horizontal leg forms the mounting rail 107. A wire parallel to 107a connects wires 108a at the rear of the cabinet and has a projection parallel to

107. Then a horizontal wire 111 rigidly connects the free ends of 107 and its parallel projection at the rear.

The door 106 as seen in FIGS. 12, 13 and 14 has a main wall 109 and a top marginal strip 110 which is thicker than the main wall of the door. The door 106 is very similar in construction to that of the door 18. The main difference between the doors is that there are no openings required in the door 106 such as the openings 102 and 103 in door 18.

The mounting rails 107 are spaced from the cabinet top 22 by a distance which is greater than the thickness of the main wall 109 or the thicker marginal strip 110. When the door is assembled in the cabinet and moved from its closed position to its open position, the door slides back in the cabinet generally parallel to and just underneath the top 22. When resting in its open position, the door is supported on the mounting rails 107 as well as on the wire 111.

The door 106 is provided with a pair of generally hook-shaped lug members 113 which are adapted to hook over mounting rails 107 when the door is pulled forwardly as far as possible and swung into its closed position. The door may also be equipped with a latch, like 105, not shown, with which to securely fasten the door in a closed position.

The hooked shaped lugs 113 have a relatively flat portion 114 which is secured to the main wall 109 of the door by suitable fastening means such as rivets 115. Each of the lugs 113 has a hook portion 116 at its distal end which is adapted to hook over one of the mounting rails 107 of the shelf guide members 108 to provide a hingeable mounting means for the door.

When the door is moved from its closed position to its open position it is seen that the lug member 113 rides along near the top of the cabinet 22 in a channel between the top horizontal wire 111 and the cabinet side 20 or 21. As previously indicated, the preferred embodiment of the door has the lug members 113 which cooperate with mounting rails 107 of the guide members because no holes are required in the door and the hinging action is more positive than the hinging action of the projections 95 and 96 and the holes 102 and 103 of door 18. Using the lugs 113 and the mounting rails 107, the door is more easily swung and pivoted about the mounting rails 107 and folded inside the cabinet. A more definite guiding action is provided for the lug members as they are moved inside the cabinet in a path generally parallel to the top 22 of the cabinet than is provided by the projections 95 and 96 and the holes 102 and 103 of door 18.

Means for Shelving the Cabinet Interior and the Racks

Still another feature of the present invention which adds to the versatility and adaptability of the tiered assemblies of cabinets and racks, means for shelving the cabinet interior and/or the racks is provided including a plurality of trays or shelves 17. Each shelf 17 (FIGS. 10 and 11) is adapted to fit either in the cabinet or in a rack 10 or 11 and comprises generally parallel top and bottom rack shelf frame members 120 and 121, respectively, and a plurality of generally parallel shelf connector members 122 for holding the frame members in spaced parallel arrangement. The upper frame 120 is preferably of a one piece length and each side thereof has raised side recess portions 123 and lower side portions 124.

Each of the shelves has a height less than that of the rack. Each rack has shelf supporting means comprising a plurality of upper horizontal legs 125 of the connector portions 58 to receive a plurality of the generally parallel raised side recess portions 123 of the upper frame member 120. Thus, the shelf is supported in a position generally parallel to the bottom of the rack. In this manner, the rack can be divided into two portions by the shelf.

The same shelf is also adapted to fit in cabinet 1. As previously described, the cabinet has shelf guide members

75 and 76 (or 108) along opposite sidewalls thereof spaced and adapted to receive the lower side portions 124 of each upper rail 120 in slidable engagement therewith. The top frame member 129 of each of the shelves 17 has width dimensions slightly more than that of the bottom frame member 51 of rack 10 and/or of the bottom 23 of the cabinet. The bottom frame member 121 is slightly smaller in dimensions than frame member 120 so that bottom frame 121 clears the supporting wires 77 of the guide members of the cabinet, but top frame member 120 rests on horizontally aligned supporting wires 77 and is slidably mounted thereon. Bottom frame 121 also clears the connectors 58 of rack 10 when used as a divider therein, an example of the use of the shelf is when the rack is converted from a container for the transportation of loaves of bread to a container for doughnuts and rolls.

The top frame 120 clears the upper connector portions 58a but does not clear the lower connector portions 58 of the rack and is generally supported on the connectors interposed between the top frame 50 and bottom frame 51 preferably at about the midpoint of each of the connectors, namely, on the upper end of connector portions 58. Note that top and bottom frame members 50 and 51 of each rack are rigidly connected by V-members 58a and inverted V-members 58 which are welded to each other.

Also adding to the versatility of the rack, cabinet, and shelf assemblies, the shelves 17 are so constructed that they nest within each other and so can be stored conveniently in the cabinets or racks or apart therefrom if desired.

It has been noted that when the cabinet is assembled, the front door is prevented from being pulled out of the cabinet by means of the thickened portion 98 at the top of the door and, in like manner, the door 106 is prevented from being pulled out of the cabinet by the lug 113 near the top thereof. However, the door and all parts inside of the cabinet are quickly and easily removed for cleaning. First the retaining members 88 at both sides of the cabinet are removed. This permits the shelf guide members 75 and 76, or 108 to be removed easily from the interior of the cabinet. For example, the front end of shelf guide member 75 is moved toward the center of the cabinet to clear the loops 84 and 85 and then they are pulled forwardly so as to disengage the members 80 from the openings in the back wall of the container, and thence out the front opening 26. Since the front door is held in position by means of the hooks 95 and 96, or 107, which are rigidly attached to the shelf guide members, the removal of these shelf guide members permits the removal of the door also and this leaves the interior of the cabinet completely free of any obstructions so that it is very easily cleaned.

It can thus be seen that I have provided a shelf having inside dimensions which fit both a cabinet and a rack as seen in FIG. 1 and FIG. 2, respectively. At the same time, the rack and the cabinet have been provided with outside dimensions which permits the stacking of either on the other. As seen in FIG. 6, the cabinet is stacked on a rack 128 which has substantially the same structure and dimensions as the racks 10 and 11 previously described, while in FIG. 2, the rack (rack 10) is stacked on the cabinet.

It should be borne in mind that the latches 105 are of a well known toggle type but attention is called to the fact that the hook member 105a of the latch engages around the thickened member extending horizontally across the bottom of the door opening 26. This thickened member involves the heavy wire 27 around which the bottom sheet 23 is wrapped. In this type of toggle latch, with the hook member 105a in extended position, below the member 27a, the latch lever is rotated in a direction to shorten the toggle member and to pull

up on the hook portion 105a so as to engage it snugly beneath the member 27a.

It is to be understood that modifications and variations of the present invention other than those described herein may be made which are within the scope of the present invention according to the patent statutes.

What is claimed is:

1. A container having a pair of generally parallel side walls, a top, a back wall, a bottom and a door which is adapted to form a front of the container when it is in a closed position; the combination therewith of means for supporting a plurality of shelves in said container comprising two shelf guide members each located along the inner face of one of said side walls wherein each of the shelf guide members is generally parallel to one of said side walls on the inside of said container, and there being two fastening means for each of said guide members one near the front and back of said container respectively, one of said fastening means comprising interengaging parts respectively on said guide members and on one of said walls preventing movement of said guide member away from said one side wall when said parts are engaged, said parts engageable by movement of each said guide member into said container from the open front thereof, and the other said fastening means comprising at least two projections of each said guide member adapted to pass through a respective side wall of said container, there being an opening through the wall permitting said projection to pass through when the parts are assembled, and spring clip means engaging each said projection outside of said container to hold said parts assembled, said spring clip means engaging at least two of said projections when the parts are assembled and holding said projections against movement axially inwardly of said spring clip means whereby said guide members may be easily disassembled by removing said removable means and withdrawing said guide members and door out of the open front of the cabinet leaving the inside of said container unobstructed for cleansing.

2. In a cabinet having a pair of generally parallel sides, a top, a bottom and a door with top and bottom edges and two side edges which is adapted to form a front of the cabinet when it is in a closed position, said cabinet being adapted for tiering with cabinets of like construction; the combination therewith of a means for supporting a plurality of shelves comprising a pair of shelf guide members, each having front and back ends and a top and bottom and mounted one along each of the sides of the cabinet and inside thereof, each said shelf guide member comprising a series of generally parallel vertically spaced shelf supporting wires which are generally parallel to the bottom of the cabinet, each of said guide members having a top supporting wire which has a hook portion rigidly attached to its front end, said hook portion extending upwardly and means for hingeably and swingably holding said door for movement between open and closed positions comprising said hook portions and two openings which are provided in the door near the junction of its top edge with each side edge thereof, each opening being adapted to receive one of said hook portions as said door approaches closed position, each said opening and said hook portion arranged to permit the door to be moved from its closed position to an open position in which each of the hooked portions is disengaged from its corresponding opening in the door and at least a part of the door is supported by said top supporting wires.

3. In a cabinet having a pair of generally parallel sides, a top, a bottom, a back and a door with top and bottom edges and two side edges which is adapted to form a front of the cabinet when it is in a closed position, said cabinet being adapted for tiering with cabinets of like construction; the combination therewith of a means for

supporting a plurality of shelves comprising a pair of shelf guide members, each having front and back ends and a top and bottom and mounted one along each of the sides of the cabinet and inside thereof, each said shelf guide member comprising a series of generally parallel vertically spaced shelf supporting wires which are generally parallel to the bottom of the cabinet, each of said guide members having an upper outside rail in vertical alignment with said shelf supporting wires and an upper inside rail parallel and horizontally spaced inwardly from the upper outside rail, an upper mounting rail at the front of said upper inside and outside rails and rigidly interconnecting the same, said mounting rail being near the top and front of the cabinet and generally parallel to the bottom and back of the cabinet, said door having a pair of spaced generally hook-shaped lug members mounted near the top corners of the door, said lug members adapted to hook over the mounting rails of the shelf guide members when the door is in its closed position and thereby secure the same to the front of the cabinet.

4. In a cabinet having a pair of generally parallel sides, a top, a bottom, a back and a door with top and bottom edges and two side edges which is adapted to form a front of the cabinet when it is in a closed position, said cabinet being adapted for tiering with cabinets of like construction; the combination therewith of a means for supporting a plurality of shelves comprising a pair of shelf guide members, each having front and back ends and a top and bottom and mounted one along each of the sides of the cabinet and inside thereof, each of said shelf guide members comprising a series of generally parallel vertically spaced shelf supporting wires which are generally parallel to the bottom of the cabinet, means for hingeably holding said door for movement between open and closed positions comprising a pair of mounting rails at the top front edge of each of the shelf guide members and each guide member having an upper outside rail in vertical alignment with said shelf supporting wires and an upper inside rail parallel and horizontally spaced inwardly from the upper outside rail, an upper mounting rail at the front of said upper inside and outside rails and rigidly interconnecting the same, said mounting rail being generally parallel to the back of the cabinet and a pair of hook-shaped lug members mounted on the door near the junction of its top edge with each side edge, each lug so constructed and arranged as to fit over one of the mounting rails when the door is in a closed position, and when the door is in an open position it is supported by the top supporting wires of the shelf guide members and the mounting rails, said door having an upper portion that is thicker than the door wall and adapted to slide along the top of each of the shelf guide members when it is moved from its closed to its open position.

5. In a container having a pair of generally parallel side walls, a top, a back wall, a bottom and a door which is adapted to form a front of the container when it is in a closed position; the combination therewith of means for supporting a plurality of shelves in said container comprising two shelf guide members each located along the inner face of one of said side walls, each of said guide members having a series of generally parallel shelf supporting wires which are spaced from the container sides and generally parallel thereto, there being two fastening means for each of said guide members one near the front and back of said container, respectively, one of said fastening means comprising interengaging parts respectively on said guide members and on one of said walls preventing movement of said guide member away from said one side wall when said parts are engaged, the other of said fastening means comprising projection means on each of said guide members adapted to pass through a respective side wall of said container, there being an opening through each of said walls permitting said projections to pass through when the parts are assembled, and removable means engaging each said projection means outside of said container to hold said parts assembled, means supporting said door for movement between an open position where said door is slid into said cabinet parallel to said top and adjacent thereto and a closed position where said door provides a front of said cabinet there being coacting hinge forming means on the upper front end of each of said shelf guide members and on the upper portion of said door adapted to hingedly support said door as it is swung between open and closed positions, the upper portion of said door and said hinge forming means having a vertical dimension greater than the clearance between the upper portion of each of said shelf guide members and said top, whereby said door is retained as part of said cabinet so long as said shelf guide members are attached to their associated side walls, and whereby removal of said means attaching said shelf guide members to the associated side walls permitting the removal of said shelf guide members and said door from said cabinet.

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