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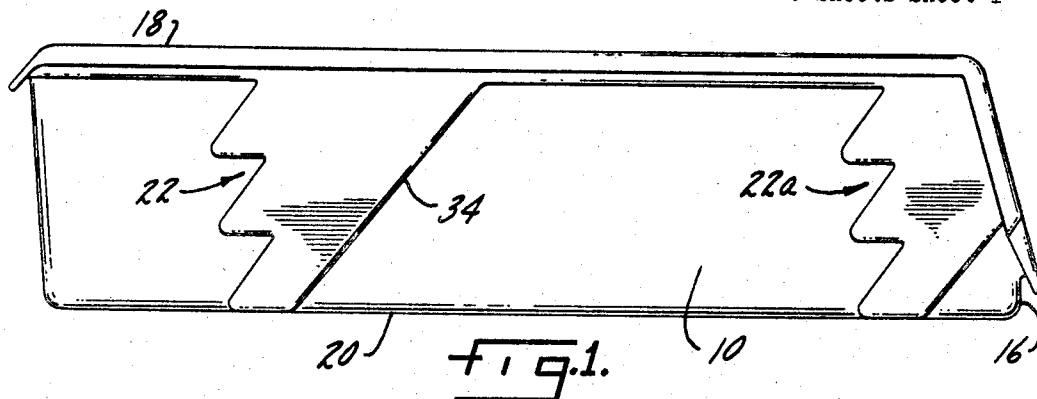
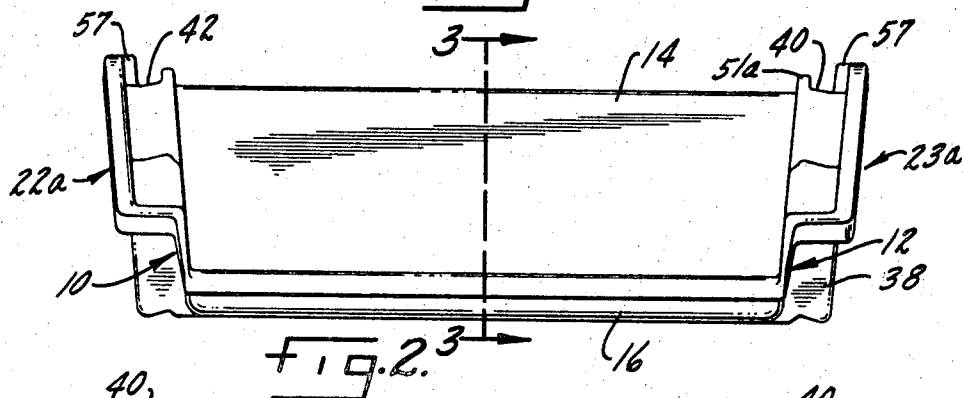
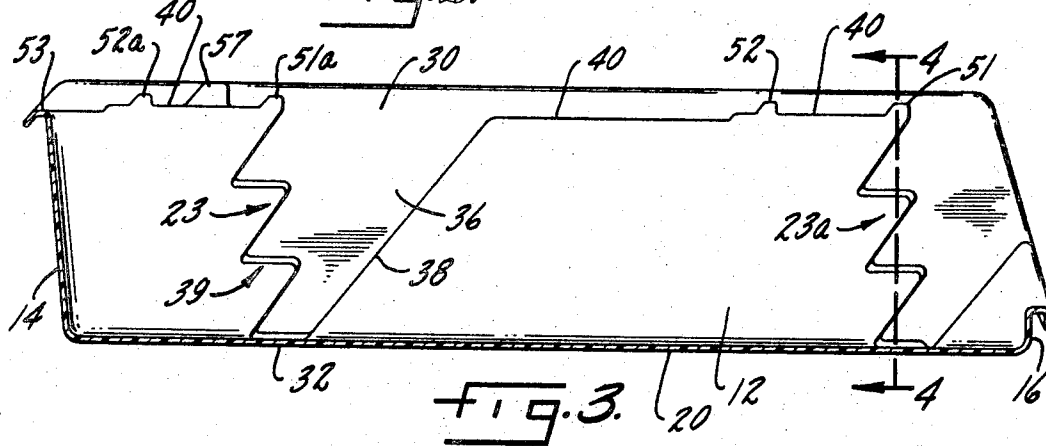
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3,404,804

STACKABLE AND NESTABLE CONTAINER

Filed Aug. 15, 1966

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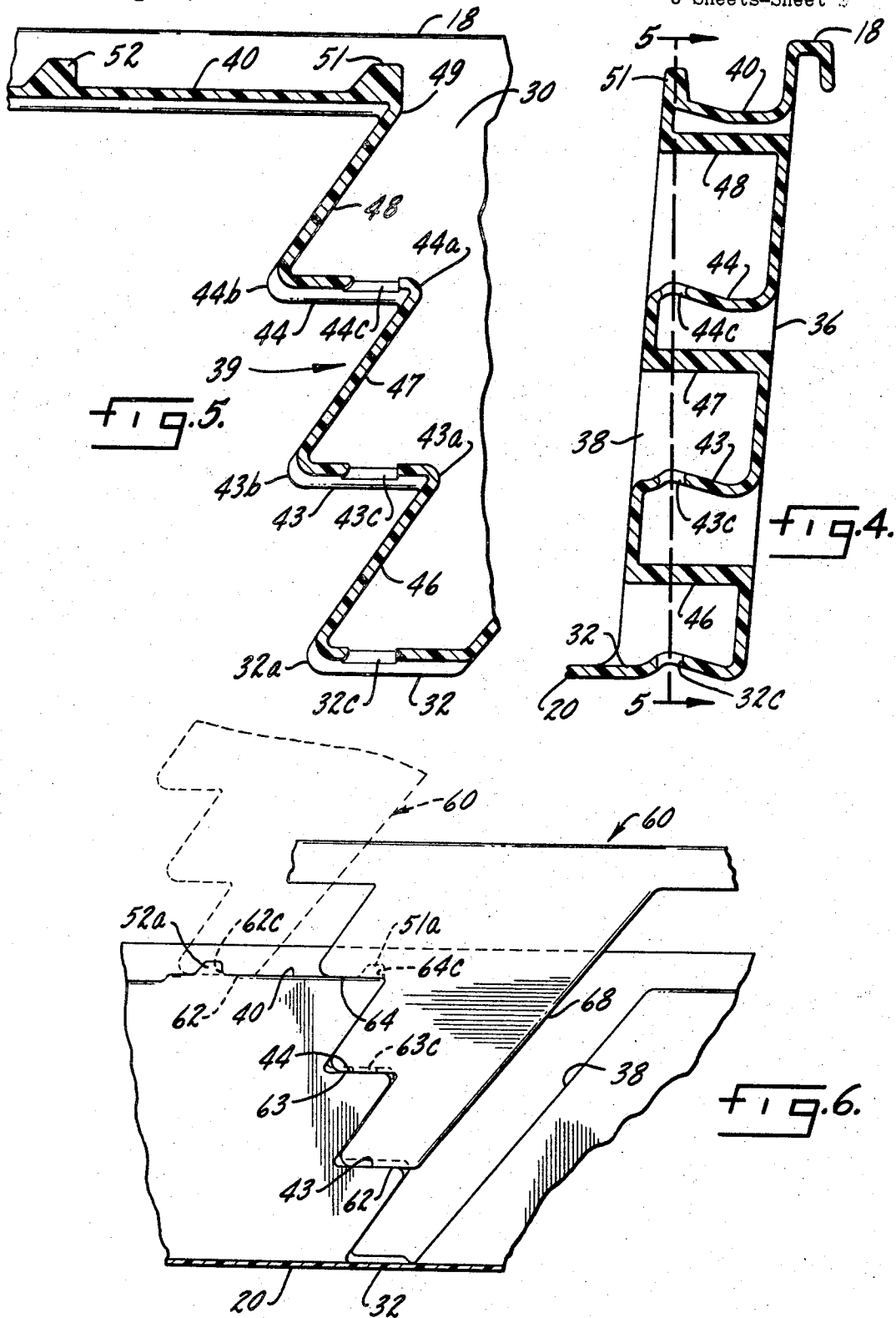
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STACKABLE AND NESTABLE CONTAINER

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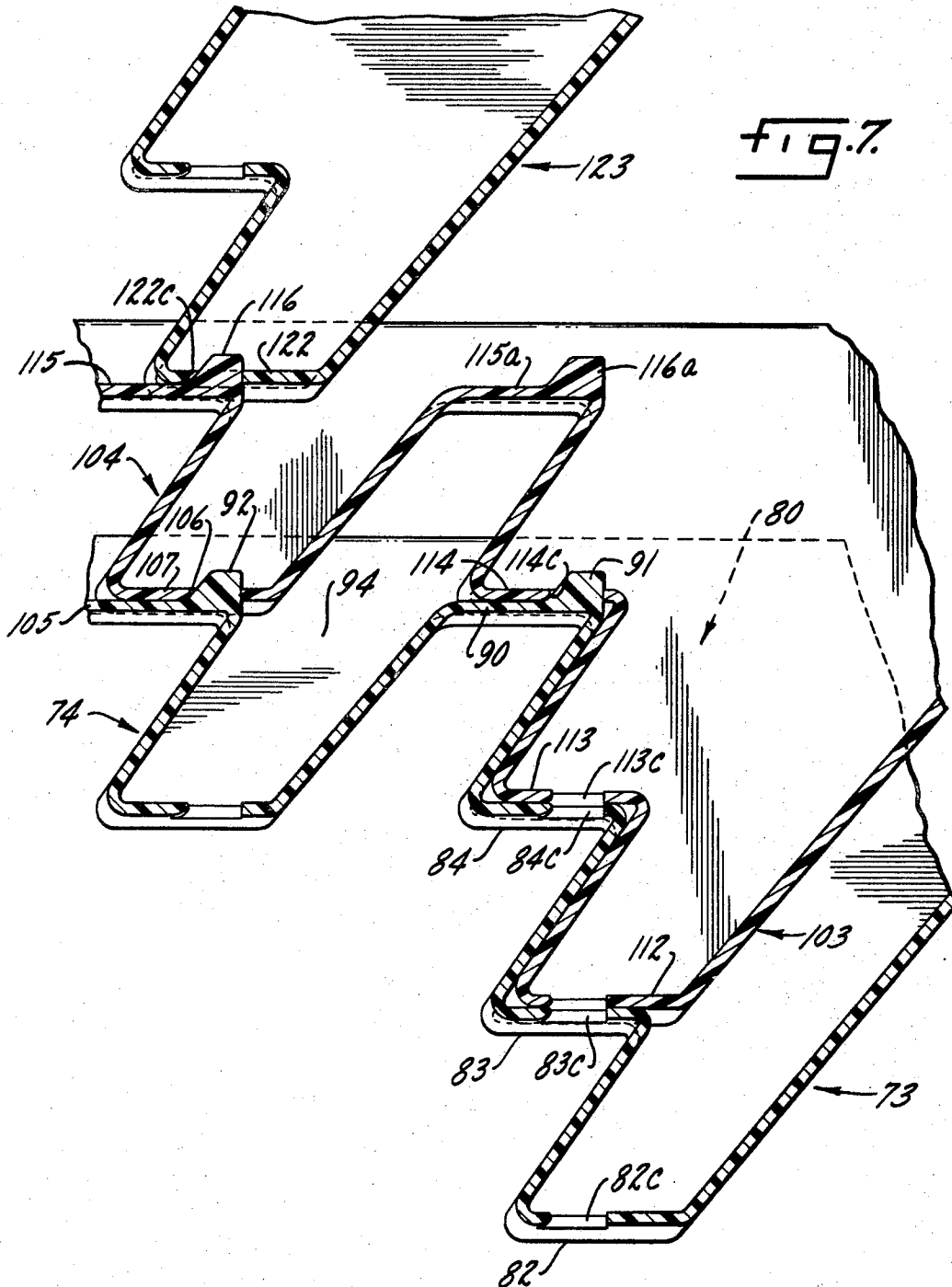
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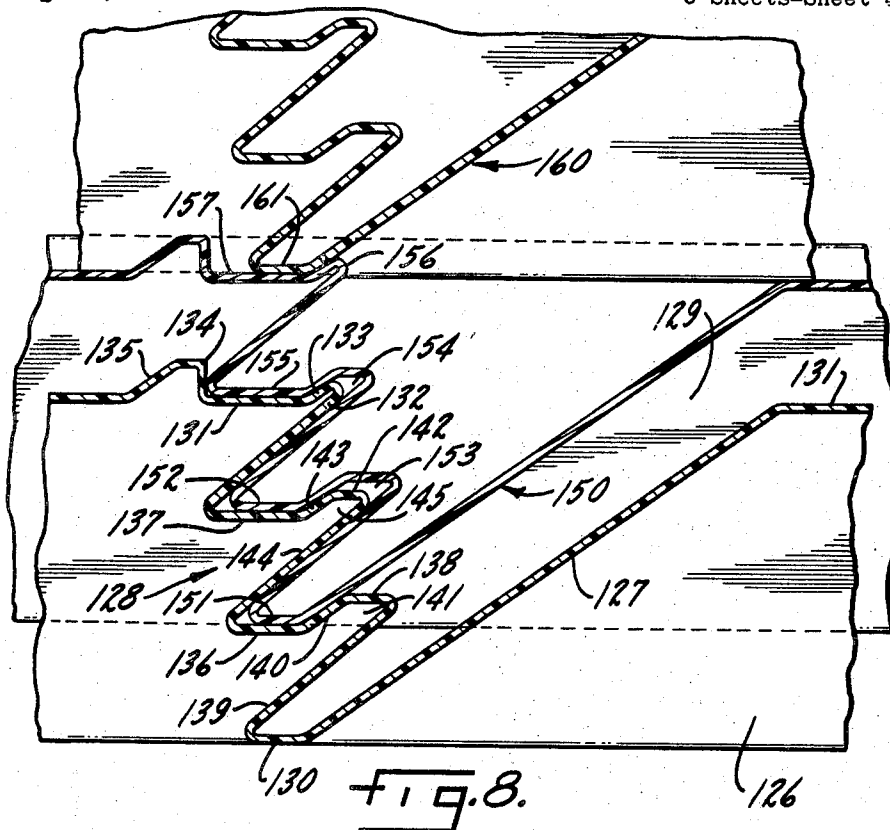
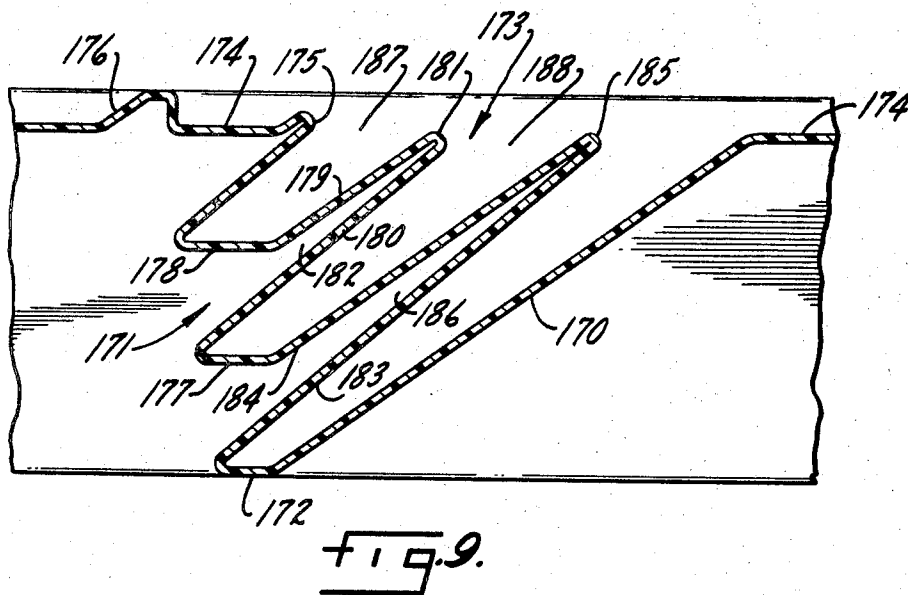
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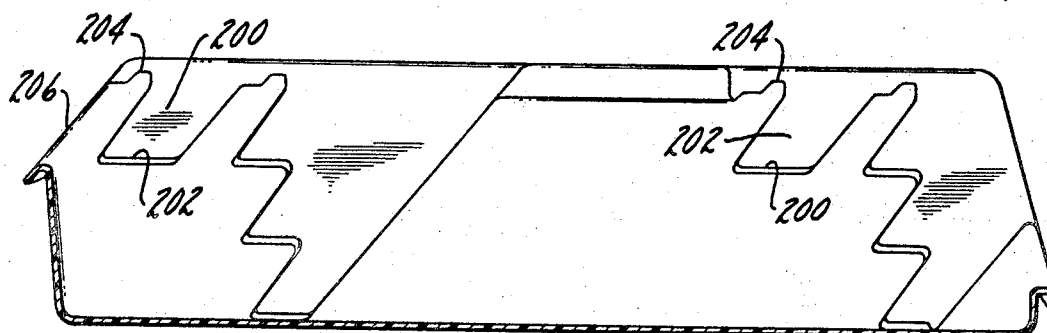
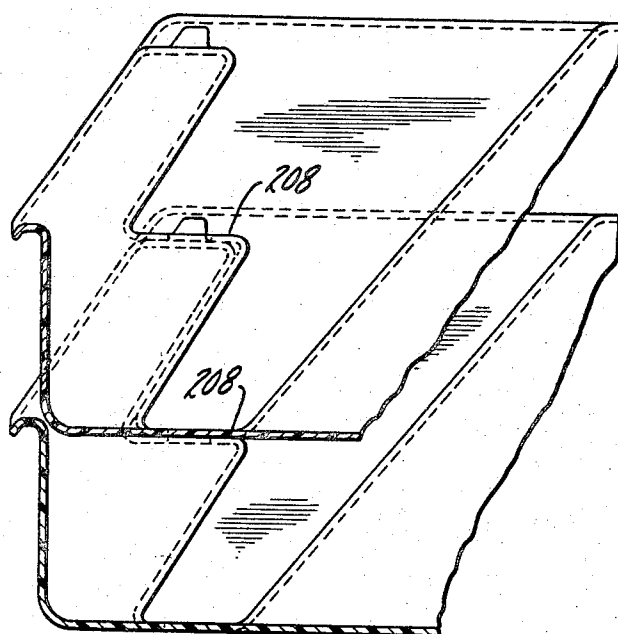
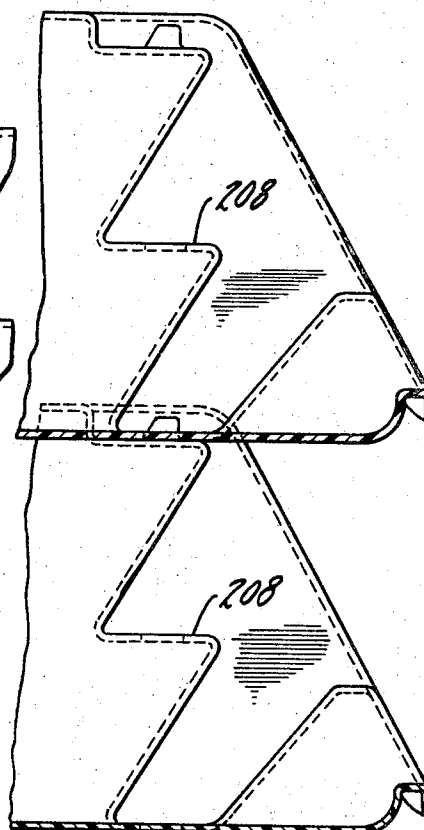


FIG. 10.

FIG. 12.

FIG. 11.



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STACKABLE AND NESTABLE CONTAINER

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Continuation-in-part of application Ser. No. 489,801,
Sept. 13, 1965. This application Aug. 15, 1966, Ser.
No. 573,760.

13 Claims. (Cl. 220-97)

ABSTRACT OF THE DISCLOSURE

A stacking and nesting receptacle capable of being stacked and nested in vertical in-line positions in which one receptacle is moved along a straight line path from a full stacked elevation to a full nest position, and vice-versa, relative to another like receptacle.

This is a continuation, in part, of Serial No. 489,801, filed Sept. 13, 1965, now abandoned.

This invention relates to receptacles which can be nested, stacked, and particularly relates to containers in which multiple nesting positions can be obtained.

A primary object of this invention is a container which can be manipulated by short, simple and quick movements to assume either a stacking position or one of several nesting positions in a novel way.

Another object is an integral open top container in which the opposed side walls are provided with means which permit like containers to be fully stacked thereon, to be partially nested by a short longitudinal movement and to be fully nested by a short, longitudinal movement.

Another object is an open top unitary container formed of substantially rigid material in which various means in the side walls are formed as a series of projections and recesses, which means permit multiple nesting positions and stacking of an upper container on a lower like container.

Another object is an open top container which, together with a like container, results in different nesting positions so that volumes of space may be provided between an upper container and a lower container to accommodate deposited items of different sizes.

Another object is an open top container having means in its side walls which will allow similar containers to be variously nested, and a plurality of containers to be stacked in any desired combination without encountering an expected probability of instability of the stack and consequent overbalance, toppling, or collapse of the stack of containers.

Another object is a unitary container of a substantially rigid plastic which can be manufactured in one operation with means in the side walls to provide versatility of stacking and nesting with a like container to accommodate various uses, while at the same time allowing full nesting to permit storage.

Another object is an open top container in which means in the opposed side walls permit a stacking position which is essentially in line so that unbalance is reduced in stack-

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ing a number of such containers together, and which means also permit a partial and a full nesting position.

Another object is a container which, together with a like container, may be differently nested and differently stacked, both in line and offset.

Another object is a container with means in opposed walls which permit a plurality of containers to be differently nested at in line positions so as to maintain a high degree of stability.

Another object is a container in which troughs or projections in the side wall are more simply manufactured because means to effect stacking and different nesting positions are provided only along one junction line between the trough and the side wall.

The foregoing objects are attained together with other objects which will become apparent from the following disclosure, which includes drawings wherein:

FIGURE 1 is a side elevational view of the container;

FIGURE 2 is a front elevational view of the container;

FIGURE 3 is a sectional view along line 3-3 of FIGURE 2;

FIGURE 4 is a sectional view, on an enlarged scale, along line 4-4 of FIGURE 3;

FIGURE 5 is a sectional view along the line 5-5 of FIGURE 4;

FIGURE 6 is a schematic portion in side elevation to indicate stacking and nesting of the containers;

FIGURE 7 is a sectional portion in side elevation of an alternative embodiment to indicate stacking and nesting of containers;

FIGURE 8 is a sectional portion in side elevation of another embodiment to indicate stacking and in line nesting of the container;

FIGURE 9 is a sectional portion in side elevation of still another alternative embodiment which is adapted for in line nesting with another container;

FIGURE 10 is a side view in longitudinal section, similar to FIGURE 3, of a variant form;

FIGURE 11 is a further modification; and

FIGURE 12 is a different position of the container in FIGURE 11.

The container shown in FIGURES 1-3 is generally an open top container having spaced side walls, indicated generally at 10 and 12, and a rear end wall 14. At least two walls diverge relative to each other to permit nesting of the containers. Preferably, all the opposed walls diverge relative to each other to some degree to facilitate nesting. The illustrated box is shown with a hopper front defined by the reduced front wall 16. A continuous flange, or down-turned skirt 18, is shown around the top edges of the respective walls. A floor panel 20 connects the bottom edges of the respective walls.

The opposed side walls 10 and 12 are seen to have a pair of slanting troughs formed therein. Side wall 10 has troughs shown generally at 22 and 22a, while side wall 12 has troughs shown generally at 23 and 23a. All the troughs slant in the same general way towards one of the end walls in the container. The construction of all such side troughs may be identical and, therefore, description of one side trough will apply equally to the other troughs.

Each trough has an open end 30 and a closed end 32. Each trough has an outside portion, such as 34, which projects relative to the side wall, such as 10, and an inside portion 36, which is recessed relative to a side

wall, such as 12. The inside and outside portions of each trough are partially defined by a substantially linear junction line 38 between the trough and the side wall, and by an irregular junction line shown generally at 39 between the trough and the side wall. The open ends of the troughs join an upper ledge or stacking point, such as 40, in side wall 12 and 42 in side wall 10. These ledges, or stacking points, are used to support the outside closed ends, such as 32, of a trough in a like upper container in stacking position.

Further details of such slanting troughs are illustrated in FIGURES 4 and 5. It will be seen that the closed end 32 of each trough is generally coincidental with the floor of the container. It is also seen that the irregular junction line is partly defined by a plurality of lateral steps or stops such as 43 and 44, the upper surfaces of which form vertical in line seating areas. The closed end 32, the lateral stops 43 and 44 and the ledge 40 represent successive stops from top to bottom which are staggered relative to one another, the upper surfaces of said lateral stops, and ledge 40, forming upwardly facing load bearing surfaces, and the lower surfaces of said lateral stops, and closed end 32, forming downwardly facing load bearing surfaces. Each successively higher stop is shown displaced further towards the rear wall. The rearward displacement or "stagger" of successively higher stops leads to vertical in line nesting of two or more containers when their respective troughs are engaged. Stop 43 has a leading end 43a relative to the linear junction line 38 and a trailing end 43b more remote from said linear junction line 38. Likewise stop 44 has a leading end 44a and a trailing end 44b. A substantially linear portion 46 connects leading end 43a of stop 43 and trailing end 32a of closed bottom 32; substantially linear portion 47 connects leading end 44a of stop 44 and trailing end 43b of stop 43; and substantially linear portion 48 connects trailing end 44b of stop 44 and terminating portion 49 of stop 40. Each of the foregoing stop portions, together with their substantially linear connecting portions, have outside projections and inside recesses in the same relative manner described for the troughs generally. Reference to such portions also implies reference to the corresponding recessed and projecting portions.

Each of the stops is shown provided with openings 32c, 43c and 44c. Such openings are adapted to interlock with projections, or lugs, such as 51, positioned immediately adjacent the open ends, or such as 52, spaced away from the open ends to form a locking connection when the opening of one receptacle engages the lug of another receptacle.

The containers of FIGURES 1-3 are adapted to be stacked vertically in line or, optionally, stacked offset and at an angle. The offset, angle stacking is attained by providing additional locking lugs, such as 52 and 52a, spaced rearwardly from lugs 51 and 51a (FIGURE 3). The offset stacking will occur when the closed ends 32 of troughs in an upper container are seated on the supporting ledges 40, and when the openings 32c in such closed ends interlock with the rearwardly spaced locking lugs 52 and 52a. To accommodate such offset stacking, the rear end wall 14 may have a rear drop indicated at 53. The rear drop 53 represents clearance for the bottom of the container 20 and cannot exceed the height of the supporting ledge 40 when the bottom of the container is in one plane. It will be clear that the bottom 20 of an upper container will be seated on flange 18 at the top of the rear wall with proper accommodation resulting from the rear drop. To more securely position an upper container in such offset angle stacking, a spacing, such as 57, may be provided towards the top of each side wall adjacent to the supporting ledge 40. The angle stacking may be effected by propping a lowermost container against a supporting structure in a desired angular position. An angular holder may be also devised to support the bottom 20 of a container at a desired angular position.

The schematic illustration of FIGURE 6 indicates the manner in which the corresponding portions of a trough in a like upper container register with corresponding portions in a lower container, and how the openings in the stops interlock with the lugs at the supporting ledge. The projecting outside surface of the trough in an upper container, indicated schematically at 60, is shown in the maximum nesting position within the inner surface of the trough of the lower container.

Thus, closed end 62 of the upper trough is shown seated on a stop 43 and stop 63 of upper trough is shown seated on stop 44 of the lower trough. Stop 64 of the upper trough is seated on support point or ledge 40 of the lower container, and opening 64c in stop 64 is shown interlocked with lug 51a. It will be seen that in this fully nested position substantially linear junction line 38 of the lower trough is spaced in a generally parallel manner from corresponding linear junction line 68 of the upper trough. Such spacing, in fact, accommodates a generally longitudinal shift of an upper container after the projecting surface of an upper trough is engaged with the recessed surface of a lower trough. At the beginning of the shift, substantially linear junction lines 38 and 68 will be closely positioned, and at the end of the longitudinal shift, the respective lateral stops of the upper and lower troughs will be engaged. It will be clear that an upper container can be partially nested in the lower container by simply engaging closed end 62 of an upper trough with lateral stop 44 in the lower trough. Such an engagement will be characterized by lateral stop 63 engaging supporting ledge 40 and opening 63c interlocking with the lug 51a. It will be remembered that while the various nesting relationships are described for a selected trough in both an upper and lower container like engagements are occurring with the other troughs in the upper and lower containers.

FIGURE 6 also illustrates how the upper container 60, shown in phantom, can be fully stacked upon the lower container at an offset position. Here, closed end 62 engages supporting ledge 40, while opening 62c interlocks with lug 52a. The upper container will be fully stacked by closed end 32 engaging ledge 40 and opening 32c interlocking with lug 51. Again, it will be remembered that this represents a single stacking point. When the container illustrated in FIGURES 1-6 is stacked upon another container, there will be four such stacking points to provide the requisite stacking stability.

The alternative embodiment shown in FIGURE 7 provides additional stability when the containers are fully nested, and also allows a combination of stacking and nesting with a number of containers. A major slanting trough, shown generally at 73, has an adjoining minor slanting trough shown generally at 74. Major trough 73 has a closed end 82 with opening 82c; a lower lateral stop 83 with an opening 83c; and an upper lateral stop 84 with opening 84c. Minor slanting trough 74 is shown spaced alongside trough 73 and is slanted in the same way, or direction. Trough 74 is connected by supporting ledge portion 90 to trough 73. Ledge support portion 90 is shown as having a locking lug 91 immediately adjacent the open end 80 of the major trough. Another locking lug 92 is shown immediately adjacent open end 94 of the minor trough. When a like upper container is fully nested in the lower container, the slanting trough, generally designated 103, will enter the recessed surface of major trough 73, and minor trough 104 of the upper container will be seated on supporting ledge portion 105. Opening 106 in lateral stop 107 will then interlock with lug 92. Lateral stops 112 and 113 in major trough 103 will engage corresponding stops 83 and 84 in lower trough 73. At the same time, lateral stop 114 in major trough 103 will be seated on ledge portion 90 and opening 114c will interlock with lug 91. In the partially nested position, stop 112 of the upper trough will engage stop 84 in the lower, and stop 113 will engage supporting ledge 90 in the lower,

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while at the same time opening 113c will interlock with lug 91. In such a partial nesting position, minor slanting trough 104 will be disengaged from supporting ledge portion 105 and locking lug 92. When an upper container is fully nested in a lower container, a third container may be fully stacked on the container fully nested in the lowermost container. This may be the in-line stacking where closed end 122 sits on ledge 115a and opening 122c interlocks with lug 116a immediately adjacent open end 80. The third container may also be stacked in an offset position on the intermediate container as shown. Here, the closed end 122 of the slanting trough 123 will be seated on supporting ledge portion 115 of the intermediate container, and opening 122c in the uppermost container will be interlocked with locking lug 116 of the intermediate container. Such containers will have the rear drop to accommodate the offset stacking.

The alternative embodiment shown in FIGURES 8 and 9 of the drawing also lead to in-line nesting of the container, whether partial or maximum. Such forms provide positive selection of a desired nesting position from a point above a lower container, whereas the form of FIGURES 1-6 are adapted for positive longitudinal positioning. In FIGURE 8, the slanting trough is in a container 126, and has a substantially linear junction line 127 and an irregular junction line shown generally as 128. The trough has an open end at 129 and a closed end 130. The foregoing trough is formed similarly as in previous embodiments in that the trough has an outside projecting surface and an inside recessed surface. Also, a plurality of slanting troughs are preferably placed in each side wall.

The open end 129 of the trough adjoins the supporting ledge 131 which is shown on a rise 132 immediately adjacent to the open end. The rise 132 has a slanting surface 133 which slants at a corresponding angle to the substantially linear line of the trough. Spaced rearwardly from rise 132 is a second rise or abutment 134 which has a slanting surface 135. Surfaces 133 and 135 of the rises are used as abutting surfaces for the bottom portions of troughs represented by linear junction line 127 in a like upper container.

The irregular junction line has a lower lateral stop 136 and an upper lateral stop 137. Lower lateral stop 136 is spaced laterally from closed end 130 by a minor lateral portion 138 which is raised relative to lateral stop 136. Linear line 139 connects the leading end of lateral portion 138 to the trailing end of closed end 130, and linear line 140 connects the trailing end of lateral portion 138 and the leading end of lateral stop 136. Minor lateral portion 138 and connecting lines 139, 140 partially enclose a space 141 adapted to accommodate a minor lateral portion in an underlying container in nesting or partially nesting positions. Upper minor lateral portion 142 laterally spaces stops 136 and 137, and such portion is raised relative to upper lateral stop 137. Linear lines 143 and 144 respectively connect the upper minor portion to stops 137 and 136. Minor portion 142 and connecting lines 143, 144 partially enclose accommodating space 145. A like upper trough indicated generally at 150 is shown fully nested in the lower trough. Closed end 151 is seated on lower stop 136, lower stop 152 is seated in upper stop 137, space 153 accommodates minor portion 142, and space 154 accommodates rise 132. It is seen that upper stop 155 is dimensioned to sit on supporting ledge 131 securely between rear rise 134 and abutting surface 133 of rise 132. It will be realized that trough 150 could be partially nested by closed end 151 engaging stop 137 whereby upper stop 152 would engage supporting ledge 131 and space 153 would accommodate rise 132. The container with trough 150 has a rise 156 and a supporting ledge 157. A third trough shown generally as 160 is seen stacked on the fully nested container represented by trough 150. Closed end 161 is seated in ledge 157 and abutting a slanting surface of rise 156.

The trough in FIGURE 9 is an alternative embodiment

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which also permits a positive selection of in-line nesting. The trough has a substantially linear junction line 170, an irregular junction line shown generally as 171, a closed end 172 and an open end 173. A supporting ledge 174 is at the open end and a rise 175 is immediately adjacent the open end. Another rise 176 is spaced away from the open end to permit offset stacking, as before. The irregular junction line has lower lateral stop 177 and upper lateral stop 178. Connecting lines 179 and 180 are joined at 181 and respectively join leading and trailing ends of stops 178 and 177. Each connecting line partially encloses a triangular space 182 which represents a separating portion between stops 177 and 178. Likewise, connecting lines 183, 184 are joined at 185 at one of their ends, and their other ends respectively join leading end of stop 177 and trailing end of closed end 172. Connecting lines 183, 184 partially enclose triangular space or separating portion 186. It will be seen that junction point 181 and rise 175 define an open end 187 which leads to stop 178 and junction points 181 and 184 define an open end 188 which leads to stops 177. These are the operable open ends for selecting full or partial nesting positions. In a full or maximum nest, for example, connecting lines 179, 180 will be accommodated within a separating portion equivalent to 185 in an upper container. In this embodiment, the plurality of open ends 187-188 are aligned substantially with the supporting ledge 174, and this provides convenience in positively selecting one of the open ends for selective full or partial nesting. The rise 175 is used to abut the bottom of closed end of trough corresponding to linear junction line 170 to effect an in-line stack, and rise 176 is used for the offset stacking—at an angle or otherwise.

In FIGURE 10, we have shown a variant form in which a channeled or clearway 200, similar to the trough 74 in FIGURE 7, is provided behind each of the main troughs. The shorter trough 200, however, differs from the FIGURE 7 form in that it is made large enough to accept the lower exterior of the main trough of a like container, as shown at 202 in FIGURE 10. Thus in addition to stacking at an angle in the full stack position with the projections 204 interlocked with an opening in the bottom of the main trough, the upper container can be partially nested in an offset position. For this purpose the rear wall is cut down as at 206, so that the rear of the upper container may pass through and overhang somewhat. It will be understood that this offset or slant partial nesting can also be used with the forms in FIGURES 8 and 9.

In FIGURE 11, a further variant has been shown in which only one step or intermediate supporting surface 208 is provided so that two such containers have a nesting position, as shown in FIGURE 11, and a full stack position, as shown in FIGURE 12. We may also provide a rear trough, such as at 202 in FIGURE 10, behind each of the main troughs in FIGURE 11 so that the upper container could be nested vertically as in FIGURE 11, or at a slant or offset.

In FIGURE 10, the rear wall is cut down as at 206 to accommodate the overhang of an upper container. This also provides access to the contents of the container through the rear when two or more such boxes are in their full stack positions. In those forms where we do not provide the offset partial nest with the partial rear troughs 200, the rear wall might be cut down so that access would be provided. For example in the FIGURE 3 form the rear wall might also be cut down to provide such access, even though in the form shown in FIGURE 3 it does not partially nest in a slant or offset position. We might also cut the rear wall down somewhat in the forms of FIGURES 7 through 9 and 11.

The forms of FIGURES 11 and 12 provide only two positions, full stack and partial nest, while the forms of FIGURES 1 through 3 have three positions, full stack partial nest and full nest. The point is that we can provide any number of intermediate nesting positions between full stack and full nest.

The use and operation of the invention are as follows:

The containers of this invention are unusually versatile in that they can be handled, stacked nested, and otherwise manipulated. Such containers are preferably formed as integral units which permit economical manufacturing with appropriate materials. The material of the container may be any substantially rigid material or materials suitable for the intended end use of the container, and may be molded, cast, formed or fabricated by known techniques. Rigid polyethylene may be used to form containers adapted for ordinary uses and demands, while stronger plastics, such as fiberglass reinforced polyester, may be used to make containers which will be exposed to more severe uses. In any event, it is an advantage that containers can be molded or cast in one operation with all the features included for permitting multiple stacking and nesting.

The containers may be selectively stacked vertically in-line or at an offset position. The vertical in-line stacking is highly desirable because many containers can be vertically stacked without incurring likelihood of the stack toppling or collapsing. The stacking is desirably accomplished by engaging the closed ends of the slanting troughs with support points preferably located adjacent the top edges of the side walls. The slanting position of the troughs is an important feature in that a plurality of containers may be nested vertically in-line. While a generally continuous supporting ledge has been shown, it should be understood that various other stacking points could be provided, such as a plurality of interrupted ledges, rod-like projections, and the like. It is preferred, of course, to provide an integral unit with a supporting ledge integrally formed; however it will be realized that supporting points could be removably mounted near the top edges by providing appropriate keyways in the side walls and having removable supporting members with appropriate key slots to engage the keyways. Other variations will occur to those familiar with this art.

It is an important feature of this invention that locking points are provided to obtain a more secure stack or nest of a plurality of containers. The locking points have been preferably shown to comprise openings in the stops or closed ends of the troughs which engage correspondingly dimensioned locking lugs spaced on the supporting ledge. Equivalent locking points could, however, be provided such as coacting grooves and cylindrical projections, or the like. Throughout this disclosure, reference has been made to the bottom lateral portion of the trough as having a "closed end." It will be understood that such term includes the meaning of being a "substantially closed end" which may include a locking point that may be an opening, a recess, groove or the like. The recess form will be desirable if liquids or comminuted materials are deposited within the container.

Full stacking is desired when substantially the entire space of the container is utilized by placing therein any desired items. Stacking can be obtained with a plurality of upper troughs engaging linear stacking points near the edges of the walls. Opposed walls may be provided with just one trough if desired, although such troughs should be preferably offset relative to each other to provide a more stable stack. A number of such containers can be stacked to a desired height for shipping such items, or merely storing them. The offset angular stacking may also be desired for storing or shipping but, additionally, it may be used to partially expose the items in the containers. Such an exposure may include merchandising where loaves of bread, for example, can be deposited in the containers. When several containers are slanted, loaves may be withdrawn from a hopper front, for example, whereupon the loaves originally placed towards the back of the containers will slide to the front. When one container is empty, it may be removed so an underlying container may become accessible for removal of its contents. A hopper front in such a container is useful for this purpose and it should be understood that the front wall could be otherwise modi-

fied. Modifications may also be fashioned with the rear wall and the side walls so long as some walls are diverged relative to each other to permit nesting and to provide room for the side troughs.

The multiple nesting positions permit changes in the available space within a container. The fully nested position has also been referred to herein as the maximum nesting position. In the illustrated forms, the lower lateral stops define the depth of such maximum nesting which are attained without jamming the container. In the stacking position, of course, substantially the entire volume of the container is available for depositing items. It may be desired that only a portion of such available space be set aside and this is accomplished by partially nesting two or more containers. The form of FIGURES 1-6 will illustrate that the irregular junction line of the troughs may be considered as having three stops: the supporting ledge 40, the upper lateral stop 44 and the lower lateral stop 43. The upper and lower lateral stops may be conveniently referred to as respectively dividing the height of the container at a one-third and a two-third position. The distance between the floor of the container and the lower lateral stop would represent the final third. The fully nested position may also be conveniently referred to as a two-thirds nesting in that the closed end and the lower lateral stop of a lower lateral trough in an upper container respectively engage lower and upper lateral stops in a lower trough. The partially nested position may be conveniently referred to as a one-third nesting in that the closed end and the lower lateral stop of an upper trough respectively engage the upper lateral stop of a lower trough and the supporting ledge of a lower container. In this partial, or one-third nesting position, approximately two-thirds of the original container volume remains available. Such a volume may be desirable for holding smaller items. For example, the containers may be dimensioned so that substantially the entire volume is available for holding smaller bakery goods, such as sweet rolls. It will be realized that in a given available storage area, many containers could be partially nested to provide many more tiers for storing sweet rolls than would be possible with the stacked positions.

The versatile provision of multiple nesting positions is obtained with the same means which permit vertical in-line stacking and offset angle stacking. Such means are not complex in their design so as to involve expensive and complicated manufacturing procedures. It will be noted that the recessed and projecting portions along the linear junction line are essentially unmodified and the multiple nesting positions are effected essentially by the lateral stops along the irregular junction line. The troughs are formed so that they perform secure positioning whether in a fully nested position, a partially nested position, or any one of the stacking positions.

While means have been shown in the slanting troughs for allowing two nesting positions, it will be recognized that this could be modified within the space available in the side walls. More particularly, a plurality of lateral stops could be provided at the irregular junction line to permit a corresponding number of partially nested positions. For convenience of illustration, the disclosure referred to one-third and two-third nesting, but this could likewise be one-fourth, one-half, three-fourths, and the like. It will further be noted that no matter which one of several partial nest conditions is desired, the movements involved in nesting are straight line or unidirectional motions, so each trough structure 22, 22a, 23, 23a, etc., is unidirectional in the sense that it cooperates with a similar trough structure in a similar receptacle to guide the upper one of two such receptacles in a unidirectional, diagonally downward direction into a vertical in-line nested position.

The forms of FIGURES 8 and 9 show that the lateral stops may be spaced from one another rather than be in a direct stepwise configuration. The separating positions

between the lateral stops may take various forms such as the short box-like form of FIGURE 8, the elongated triangular form of FIGURE 9 and other forms which will differently space the troughs and provide different open ends. The forms of FIGURES 8 and 9 allow an upper container to be positively nested from a point above the lower container or substantially vertical positioning. Such a nesting operation may be more convenient for certain operations such as a mechanized or automated overhead operation remotely controlled, for example, an overhead track in a bakery assembly.

One of the advantages of the disclosed structure is in the motion that the units are stacked and nested. For example, referring to the full nest position such as shown in FIGURE 6, the upper unit 60 can be unnested by a simple unidirectional raising motion with the rear slanting surfaces of the irregular wall 39 automatically camming it forward. The interlock projections and holes will automatically disengage as the upper container is raised and cammed forward. Thus, the structure will provide, first, an automatic unlock when you lift the upper container and, second, an automatic cam forward, say, in a 45° to 60° direction. This is also true when two or more containers are in their one-third nest positions. When in the stacked position, either direct vertical stack or the offset stack using projection 52, the upper unit only has to be raised to unlock.

When two such units are to be either partially nested or fully nested, the upper container can merely be lowered down and moved rearwardly into the lower container until the slanting surfaces in the staggered wall 39 match.

Thus, the movements required to either stack, nest, or partially nest or partially unstack an upper container relative to a lower one are simple, straight line motions, and do not require a complex coordination of vectored type motions. The personnel using such containers, for example the operators of bakery trucks, will quickly take to them since they will not tend to jam, cock, and stubbornly refuse to unnest or nest. All of the above is equally applicable to the forms in FIGURES 7, 8, and 9.

Also, in the full stack position the units will be horizontally interlocked which will prevent an upper unit from slipping either forward or backward on a lower one. This is also true in the partial nest or full nest positions.

It will also be noted that such containers may be fully nested, partially nested and fully stacked without one container having to be rotated either partially or fully relative to the other.

The foregoing invention can now be practiced, and such practitioners will know that the invention is not necessarily restricted to the particular embodiments presented herein. The scope of the invention to be defined by the terms of the following claims as given meaning by the preceding description.

We claim:

1. In a stacking and nesting type receptacle, wall and bottom means forming an upwardly open receptacle, and

means for receiving a like receptacle in a vertical in-line stacked position and a vertical in-line nested position,

said means including unidirectional, sloped trough structure in the wall means for guiding an upper one of two such receptacles in a unidirectional, diagonally downward direction into the vertical in-line nested position,

said unidirectional sloped trough structure having a vertical stack seating area associated with its upper end,

said unidirectional, sloped trough structure having a vertical nest seating area at an elevation beneath the upper end of said trough structure which is disposed in vertical alignment with the vertical stack seating area.

2. The receptacle of claim 1 further including means adapted to form a locking connection with associated means on a similar, upwardly located receptacle to maintain a vertical in-line relationship of the two receptacles with respect to one another.

3. The receptacle of claim 1 further characterized in that said structure includes

a generally downwardly facing load bearing surface and

a generally upwardly facing load bearing surface, said upwardly facing load bearing surface being adapted to receive, in load bearing relationship, the generally downwardly facing load bearing surface of a similar upwardly located receptacle in vertical in-line relationship

said upwardly facing and downwardly facing load bearing surfaces in the same receptacle being at different elevations with respect to one another.

4. The receptacle of claim 3 further including means adapted to form a locking connection with associated means on a similar, upwardly located receptacle to maintain a vertical in-line relationship of the two receptacles with respect to one another.

5. The receptacle of claim 2 further characterized in that the means adapted to form a locking connection comprises

structure, associated with the uppermost upwardly facing load bearing surface, adapted to contact mating structure associated with a downwardly facing load bearing surface on a similar, upwardly located receptacle in generally vertical abutting engagement.

6. The receptacle of claim 5 further characterized, firstly, in that the structure associated with the uppermost upwardly facing load bearing surface is a projection which extends above the load bearing surface, and

secondly, in that the mating structure associated with a downwardly facing load bearing surface on a similar, upwardly located receptacle is an opening of a size sufficient to receive a projection on a downwardly located receptacle in abutting relationship therewith.

7. The receptacle of claim 3 further characterized in that

the trough means includes a plurality of generally upwardly facing load bearing surfaces and

the same number of generally downwardly facing load bearing surfaces,

the uppermost generally upwardly facing load bearing surface being located at a higher elevation, with respect to the bottom means, than the highest generally downwardly facing load bearing surface, and

the lowermost generally downwardly facing load bearing surface being located at a lower elevation, with respect to the bottom means, than the lowest generally upwardly facing load bearing surface.

8. The receptacle of claim 7 further including means adapted to form a locking connection with associated means on a similar, upwardly located receptacle to maintain a vertical in-line relationship of the two receptacles with respect to one another.

9. The receptacle of claim 1 further characterized in that

each of two opposing wall means has two unidirectional, sloped trough structures spaced longitudinally from each other.

10. The receptacle of claim 9 further characterized in that

each unidirectional, sloped trough structure has two vertical nest seating areas disposed in vertical alignment with the vertical stack seating area to thereby provide full stack, partial nest, and full nest positions.

11. The receptacle of claim 10 further characterized in that the vertical nest seating areas in each trough structure are generally equally spaced between the top and bottom of the receptacle.

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12. The receptacle of claim 1 further including an additional unidirectional, sloped trough structure in the wall means which is shorter in depth than, and spaced longitudinally from, an associated sloped trough structure,
- 5 said additional unidirectional, sloped trough structure being of a size sufficient to receive the lowermost end of a longer sloped trough structure in an upper, similar receptacle whereby two such receptacles can be nested in offset vertical relation.
13. The receptacle of claim 1 further including an additional vertical stack seating area which is spaced longitudinally from the first mentioned vertical stack

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seating area to thereby enable two such receptacles to be stacked in off-set vertical relation.

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