

# United States Patent

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[56]

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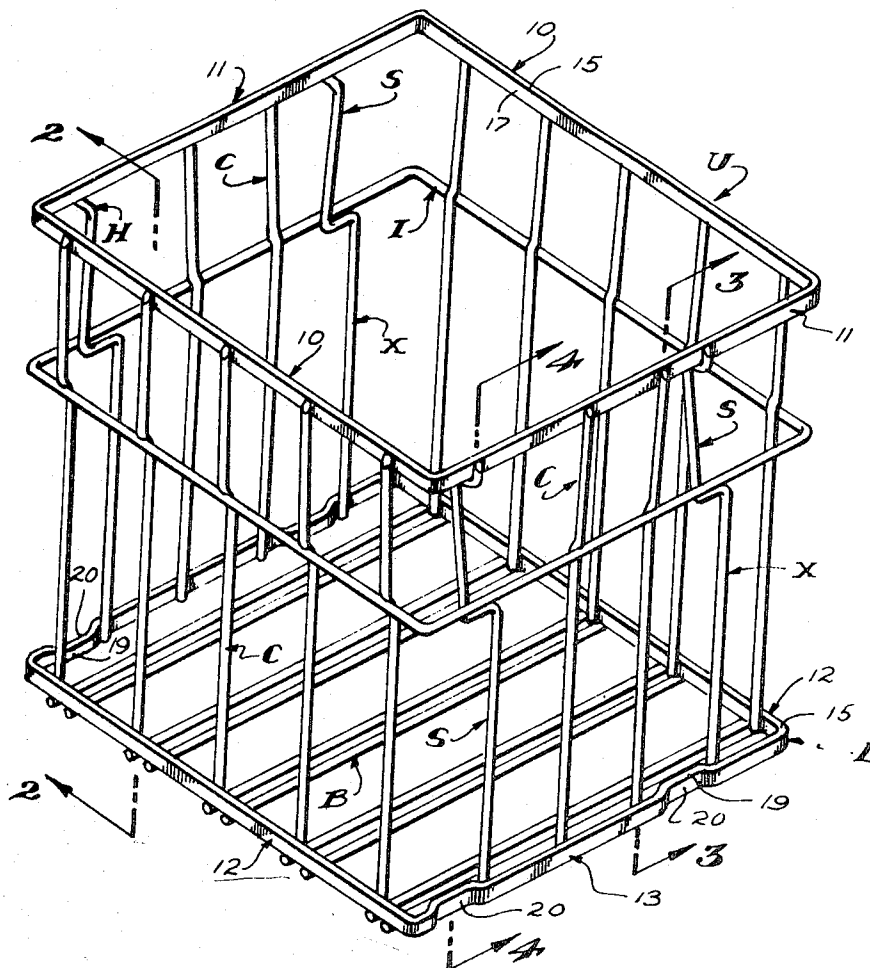
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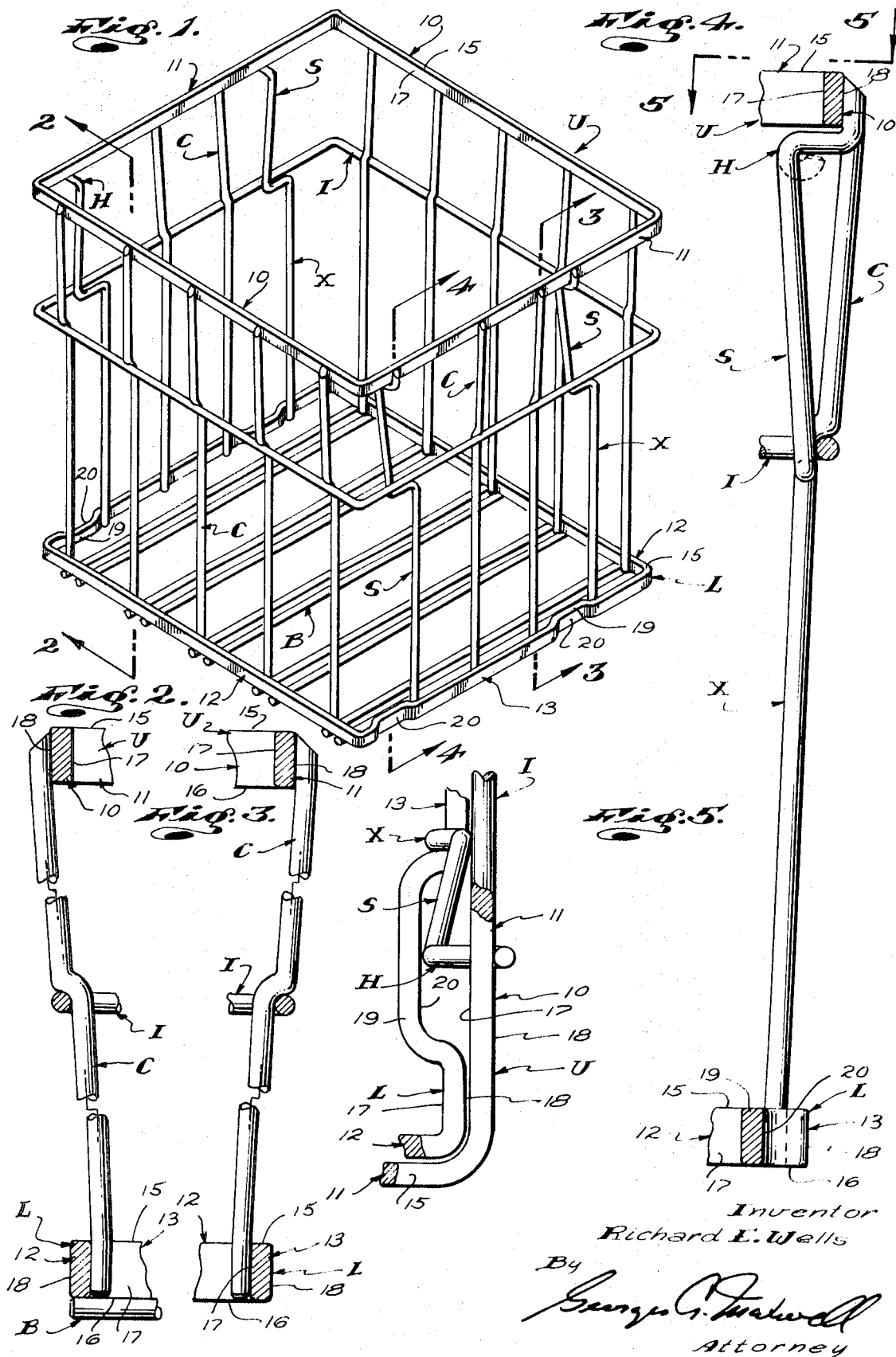
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[54] **STACKING AND NESTING BASKET**  
8 Claims, 12 Drawing Figs.

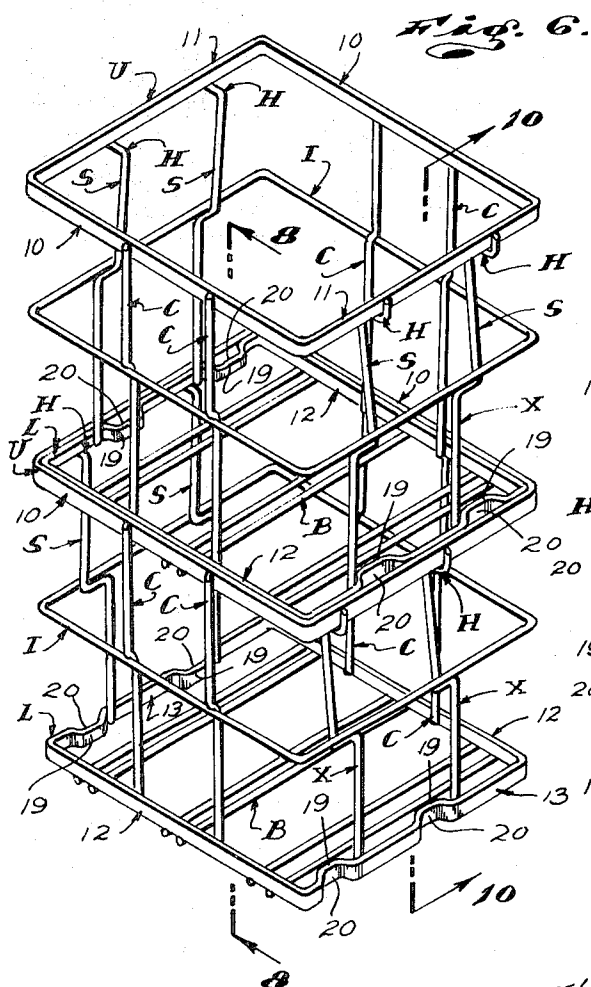
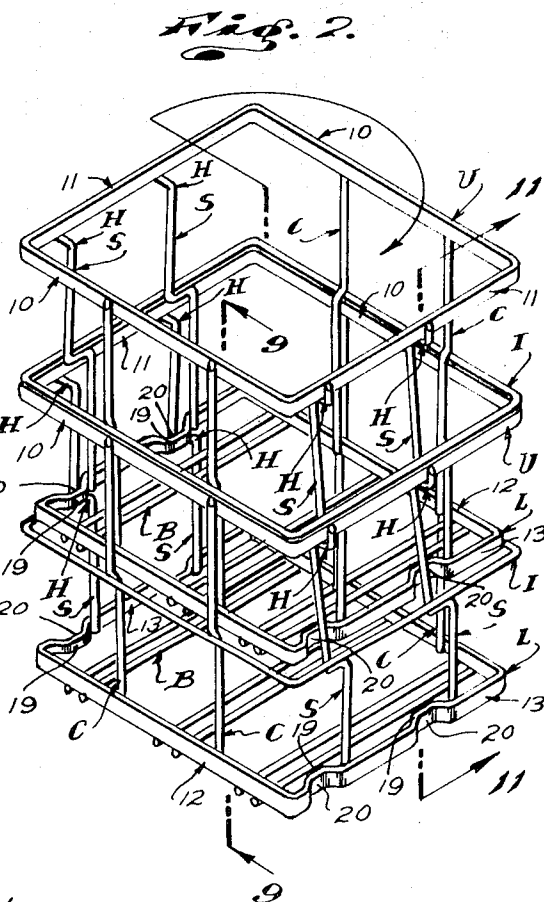
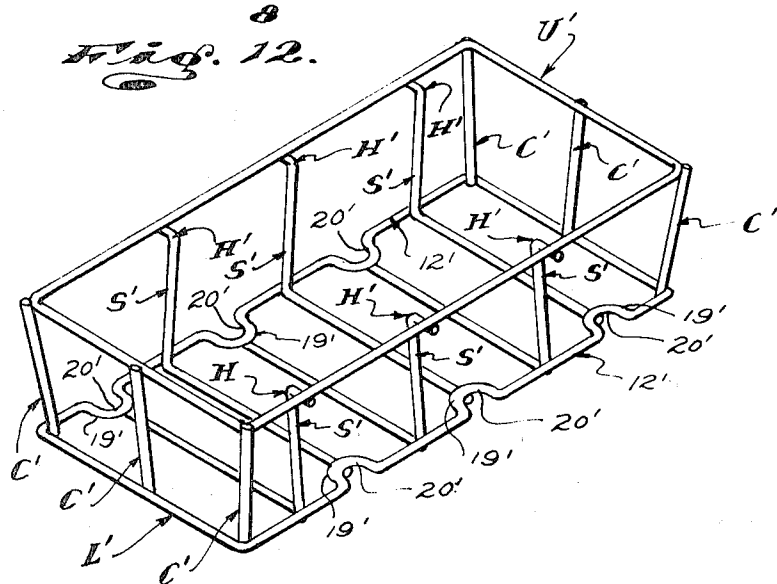
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**ABSTRACT:** A wire basketlike container construction having no moving parts and which is such that a plurality of said containers can be selectively engaged in vertical stacked and interengaged nested engagement with each other by varying the relative rotative position of adjacent containers 180°; and a construction where an upper frame of one container is engaged about a lower frame of an upper adjacent container when the containers are stacked whereby the containers are restrained from lateral shifting and displacement.

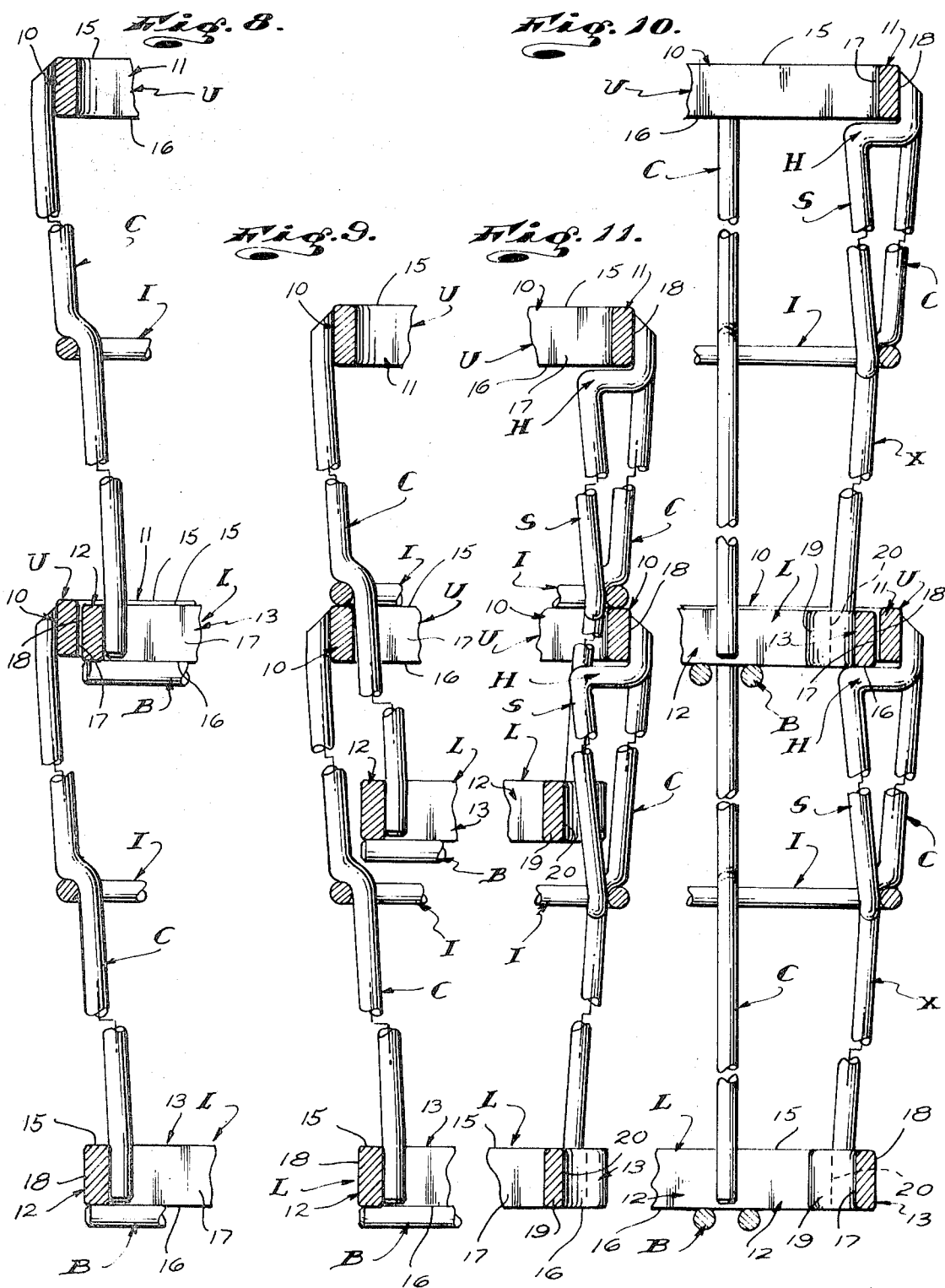




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**STACKING AND NESTING BASKET**

This invention has to do with that class of containers in which foodstuffs and the like can be advantageously deposited and which can be advantageously and safely stacked, one atop another when filled, or telescopically engaged and nested one within another, when empty, as desired and as circumstances require.

In the art of handling foodstuffs, such as cartoned eggs, ice cream and other packaged refrigerated or frozen foods, it is common practice to employ heavy-duty wire basketlike containers in which a predetermined amount or number of packages of foodstuff can be deposited. The basketlike containers are commonly provided in predetermined sizes to properly receive a number or gross weight of food cartons or packages that can, along with the containers, be safely and conveniently manually handled and manipulated and are such that they provide for: the free flow of cool or refrigerated air therethrough; visual inspection of the contents; and, easy and convenient cleaning.

It has become common practice to provide such containers with special means whereby the containers can, when filled, be stacked one on top of another, without damage to the products contained therein and so that maximum use of the space in which they are to be arranged, for storage or transport, is made possible.

It has also become common practice to establish such containers so that when they are empty and not in use they can be telescopically engaged and nested one within another so as to facilitate their being handled and to conserve of storage space and the like.

The prior art has found little or no difficulty in providing wire containers that can be stacked one atop another and has found little or no difficulty in providing wire containers that can be telescopically engaged and nested one within the other, but has found difficulty in establishing such containers that can be stacked and nested. Such difficulty is experienced because the open top of such containers must be larger in inside dimensions than the outside dimensions of their lower ends in order to allow for one container to be entered into another for nesting purposes. Such a relationship of parts or portions of such containers makes it apparently impossible to permit the small lower end of one container to engage the larger open top of another to establish supporting engagement therewith and effect stacking of the containers.

To overcome the above-noted difficulty experienced by the prior art, the prior art has adopted container structures which are capable of being nested one within another, as suggested above and has provided pairs of baillike stacking bails at opposite sides of the open tops of the containers which can be pivoted to occur within the open top of their related containers to engage the bottom and support another container arranged thereabove and which can be pivoted to occur outside their related container, leaving the interior thereof unobstructed and capable of receiving another container in nesting relationship therewith.

The provision of stacking bails on wire containers, such as referred to above, is not wholly desirable as the provision of such bails represent a substantial added expense, requires special, time-consuming and inconvenient manipulation. Further, such bails are subject to mechanical failure as a result of bending springing and misalignment of the bails and/or their related containers.

An object of my invention is to provide a novel container construction which is such that a plurality of such containers can be easily, conveniently and safely stacked one on top of another or can be telescopically engaged and nested one within another, as desired.

Another object of my invention is to provide a container construction of the character referred to above which includes no moving elements or parts which must be manually manipulated or otherwise worked upon or operated to effect the stacking or nesting together of a plurality of such containers.

It is an object and feature of my invention to provide a container of the character referred to having upper and lower,

rectangular, horizontal, wire frames defining the top and bottom edges of the container and a container wherein the upper wire frames is substantially the same or slightly greater in inside dimensions than the outside dimensions of the lower frame whereby the lower frame or one container can be freely or slidably entered into and received by the upper frame of another like container.

Still another object or feature of the present invention is to provide a container construction of the character referred to having end and sidewalls defined by pluralities of substantially vertically extending wire columns spaced longitudinally of and extending between related sides and ends of the upper and lower frames, the upper ends of the columns being fixed to the exterior or lower side of the upper frame and the lower ends of bars being fixed to the interior or top side of the lower frame whereby the bars will not prevent or interfere with the engagement of a lower frame of one container in and with the upper frame of another container.

Yet another object and feature of the present invention is to provide a container construction of the character referred to wherein the upper end portions of two or more of the columns at opposite sides or ends of the container are support columns having horizontal support portions projecting laterally inwardly on or below the plane of the bottom plane of the upper frame to stop the lower frame of a like container engaged in said upper frame and to support the containers in stacked relationship, with the lower frame of the upper container contained and restrained from lateral shifting and displacement by the upper frame of the lower container.

Another object and feature of this invention is to provide a container of the character referred to wherein support columns with their support portions, at the opposite sides or at of the container are spaced from each other so the support bars at one side or end of the container occur in vertical transverse planes between the sides or ends of the containers in which they occur which are laterally offset from the vertical longitudinal planes between the sides or ends of the container in which the support columns at the other or opposite side or end of the container occur and a construction wherein each side or ends of the lower frame at the sides or ends of the container along which the support columns occur is provided with spaced laterally outwardly opening notches in those vertical planes on which the support columns at the other or opposite side or end of the container occur whereby the support columns and recesses of two vertically aligned containers are normally in vertical alignment so that the upper container will telescopically enter and establish nesting engagement in the lower container and so that when one of the containers is rotated 180° about its central vertical axis and relative to the other container the support bars at the newly related sides or ends of the containers are out of register or alignment and the support portions of the bars engage the lower frame member of the upper container at points spaced from the recess therein.

Another object and feature of my invention is to provide a container construction of the general character referred to above which includes stop means to limit vertical engagement and nesting of one container into another and including downwardly disposed stop shoulders on the sides and ends of the container, spaced between the upper and lower frames and adopted to engage and stop against the top of the upper frame of another container in which the container is engaged and nested, said stop means is preferably established by a central horizontal frame similar to the top frame and fixed to the outer sides of the columns.

The foregoing and other objects and features of the instant invention will be fully understood and will be apparent from the following detailed description of typical preferred forms and applications of the invention, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is an isometric view of a container embodying the present invention;

FIG. 2 is a sectional view taken as indicated by line 2—2 one FIG. 1;

FIG. 3 is a sectional view taken as indicated by line 3—3 in FIG. 1;

FIG. 4 is a sectional view taken as indicated by line 4—4 on FIG. 1;

FIG. 5 is a view taken as indicated by line 5—5 on FIG. 4;

FIG. 6 is an isometric view showing two containers arranged in stacked relationship;

FIG. 7 is an isometric view showing two containers arranged in nested relationship;

FIG. 8 is a sectional view taken as indicated by line 8—8 on FIG. 6;

FIG. 9 is a sectional view taken as indicated by line 9—9 on FIG. 7;

FIG. 10 is a sectional view taken as indicated by line 10—10 on FIG. 6;

FIG. 11 is a sectional view taken as indicated by line 11—11 on FIG. 7, and

FIG. 12 is an isometric view showing another form of container embodying the present invention. The container construction provided by the present invention and as illustrated in FIG. 1 through 11 and in that embodiment of the invention shown in FIG. 12 of the drawings includes upper and lower rectangular frame members U and L arranged in vertically spaced horizontal planes and a plurality of substantially vertically extending columns C arranged in spaced relationship about to extend between and fixed to the frame members.

The upper rectangular frame members U has straight parallel sides 10 and straight parallel ends 11.

The lower rectangular frame member L has straight parallel sides 12 and substantially straight ends 14.

The upper frame U is substantially equal in inside dimensions with the outside dimensions of the lower frame L and so that the lower frame L can be freely received in and accommodated by one upper frame U.

In the first form of the invention the frames U and L are established of flat, ribbonlike wire or bar stock, rectangular in cross section, with the major dimension of said stock on vertical planes and so that the frames have flat top and bottom edges 15 and 16 and flat, vertical, inside and outside surfaces 17 and 18.

In practice and as shown in FIG. 12 of the drawings, the stock from which the frame members U' and L' are made can be round wire or rod stock.

In addition to the foregoing, the lower frames, on at least two opposite sides, are provided with longitudinally spaced inwardly projecting offsets defining laterally outwardly opening notches.

In the first form of the invention, the ends 13 of the lower frames L are provided with a pair or two longitudinally spaced, laterally inwardly projecting offsets 19 defining spaced laterally outwardly opening notches 20.

In the form of the invention shown in FIG. 12 of the drawings, the sides 12' are provided with offsets 19' defining laterally outwardly opening notches 20', there being three such offsets spaced along each side.

In the first form of the invention, the offsets 19 and the notches 20 defined thereby at the opposite ends of the container occur on two laterally spaced longitudinal parallel planes spaced different distances from the central longitudinal vertical plane of the container and different distances from their adjacent sides of the container, as clearly illustrated in FIGS. 1, 6 and 7 of the drawings.

The columns C about and extending between the upper and lower frames U and L are alike, each being a substantially straight vertically length of wire or bar stock. The upper ends of the columns occur adjacent the outer surfaces 18 of the upper frame U and are fixed thereto as by spot welding and the lower ends of the columns occur adjacent the inner surface 17 of the lower frame U and are fixed thereto as by spot welding or the like.

With the above relationship of parts, it will be apparent that the inside surfaces 17 of the upper frame is clear and unobstructed by the columns and the outside surfaces of the lower frame L are clear and unobstructed by the rails whereby the columns do not interfere with or impede the entry of the lower frame of one container into or through the upper frame of another like container.

The upper and/or lower ends of the columns could, if desired, be fixed to the upper and lower edges of their related frames without departing from the spirit of this invention, as such a relationship would, as is required, leave the inside of the upper frame and outside of the lower frame unobstructed and permit free interengagement of upper and lower frames as is required and as will be made apparent in the following.

In addition to the regular or common columns C described above, the container includes a number of special support columns S. The columns S are substantially vertically extending columns occurring at the ends of the container in common planes with the notches 20. The upper ends of the columns S are fixed to the upper frame and are provided with laterally inwardly projecting horizontal supports, parts, or portions H' which project inwardly into the container, adjacent the lower edges of the frame U. The support portions H project inwardly from the inner surface 17 of the frame U a distance slightly greater than the vertical planes on which the inner surfaces 17 of the ends of the lower frame L occur and a distance slightly less than the vertical planes on which the bottoms or innermost parts of the recesses 20 occur.

The notches 20 extend longitudinally of their related ends of the frame L a distance substantially greater than the diametric extent or thickness of the column S and the support portions H and are positioned so that the support portions occur in vertical planes substantially midway between the lateral extremities, ends or sides of the notches. With such a relationship, considerable tolerances can be and are provided.

The major or remaining portion of the columns S extend downwardly from the inner ends of the support portions H and their lower ends are fixed to the inside surface 17 of the lower frame L. Since the support portions H and notch defining offset portions 19 of the frame L occur in vertical alignment, the portions of the columns S extending from the support portions to the inside surface 17 of the frame U, must be inclined laterally or, as illustrated, have laterally offset lower portions X so that their lower ends will not obstruct the notches and will meet or join the surface 17, at one side of the offsets 19, as clearly illustrated in FIGS. 1, 4 and 5 of the drawings.

In practice, if necessary or desired, the support portion H can be short, separate parts carried by the frame U, having a suitably dressed or turned inner end, as illustrated in dotted lines in FIG. 4 of the drawings. In such a case, the support columns S are not provided and the ends of the container can be closed or defined by a number of appropriately located columns C.

The bottom B of the container can be established or defined by any suitable means or structure and is shown as defined by a plurality of longitudinally spaced laterally extending pairs of straight wires or rods fixed to and extending between the bottom edges 16 of the lower frame L.

The columns defining the sides and ends of the container are inclined gently, downwardly and laterally inwardly and such that one such container can be telescopically engaged and nested into and with another like container.

With the structure thus far described, and referring to FIGS. 6, 8 and 10 of the drawings, it will be apparent that when two such containers are arranged in vertical alignment, one above the other and the upper container is rotated about its central vertical axis so that the recesses 20 in the ends of its lower frame L are misaligned with the supports or support portions H at the ends of the lower container adjacent thereto, the lower frame L of the upper container can be freely entered into the confines of the upper frame U of the lower container, whereupon the lower edge 16 of the said frame L engages, stops against and is supported by the supports H, as clearly illustrated in FIGS. 6 and 10 of the drawings.

(In FIGS. 6 and 7 of the drawings, the number of columns C and the number of pairs of bottom-defining rods has been materially reduced so as to render the drawing less full and complicated and to better illustrate the invention).

When the containers are thus stacked, it will be noted that since the columns C extend between the outer surface of the larger upper frame U and the inner surface of the smaller lower frame L, the outer surfaces 18 and the inner surfaces 17 of the interengaged frames L and U are in opposing relationship, and the upper frame of the lower container effectively retains and prevents lateral and/or longitudinal shifting of the lower frame of the upper container and thereby prevents lateral, and/or longitudinal displacement of the two-stacked containers related to each other.

Referring next to FIGS. 7, 9 and 11 of the drawings, it will be apparent that upon lifting the uppermost of the stacked containers and rotating it 180° about its central vertical axis, so that the supports or support portions H at each end of the lower container are aligned with the notches 20 at the ends of the frame L of the upper container and thereafter lowering the upper container, it will be apparent that the notches at the lower end of the upper container will move downwardly by the supports H and the upper container will telescopically enter the lower container and will eventually stop in nesting engagement therein, as illustrated.

In addition to the foregoing, the container construction provided can and is shown as including an intermediate reinforcing frame I extending about and fixed to the columns C and S on a horizontal plane spaced between the upper and lower frames U and L. The frame I is shown formed of round wire stock; is equal in inside and outside dimensions with the upper frame U and is fixed to the outer sides of the columns by spot welding or the like.

The intermediate frame I, in addition to reinforcing the container, is spaced vertically so that when a pair of containers are nested one within the other, the frame I of the uppermost container engages and stops against the upper edge of the upper frame of the lowermost container, as clearly illustrated in FIGS. 7, 9 and 11 of the drawings, this relationship of parts limits engagement of the upper container into the lower container and eliminates the possibility of the containers establishing snug or locked wedging engagement with each other.

In the form of the invention illustrated, the columns C are formed to establish a downwardly and outwardly opening seat to receive the portion of the frame I related thereto, to facilitate orienting the frame I and to provide a stronger and more durable structure.

In practice, the extent to which one container can enter another for nesting and storage purposes can, to a great extent, be controlled by vertical placement of the intermediate frame I. In FIG. 1 of the drawings, the frame I is shown positioned about one-third from the top and somewhat higher than are the frames I in FIGS. 6 and 7 of the drawings which are midway between the top and bottom. With such a distinction or difference, it will be apparent that containers such as shown in FIG. 1 will nest deeper, one within another than will the container shown in FIGS. 6 and 7.

Referring once again to the form of the invention illustrated in FIG. 12 of the drawings, the notches 20' along each side of the lower frame U' are spaced equidistant one from the other and the notches 20' on one side of the frame are on lateral vertical planes offset from and midway between the lateral vertical planes on which the notches on the other side of the frame U occur.

The columns C' at the corners and ends of the container are simple straight rods fixed to and extending between the outer side of the upper frame and the inside of the lower frame.

The columns at and along the sides of the container are each support columns S' having horizontal supports or support portions fixed to the underside of the upper frame and projecting inwardly into the container and having substantially vertical portions depending and fixed to the inside of the lower frame L'. In the case illustrated, the bottom of the container is

defined by extensions of the columns S extending laterally across the lower frame L' of the container.

The columns S' on each side of the container are spaced between the notches 20' on their related sides of the container and on common lateral vertical planes with the notches 20' on the other or opposite side of the container. The free ends of the bottom-defining portions of the columns are fixed to the under sides of those notch-defining projections which occur in a common plane therewith.

With the structure illustrated in FIG. 12 and described above, it will be apparent that when two such containers are arranged one above the other and the upper container is in a rotative position where its notches 20' are out of register with the supports H' of the lower container, the frame L' of the upper container will enter the frame U' of the lower container and will be stopped and supported by the supports H' of the lower container, with the frame L of the upper container retained in and by the upper frame U of the lower container.

It will be further apparent that by rotating one of the containers 180° relative to the other, the notches 20' of the upper container are aligned with the supports H' and columns S' of the lower container and so that when the upper container is lowered, it will telescopically enter and nest in the lower container.

The container construction shown in FIGS. 1 through 11 of the drawings is a deep container suitable for handling and storing cartons of eggs, while the container shown in FIG. 12 of the drawings is a shallow, traylike container suitable for handling cartoned ice cream and the like.

Containers of different and intermediate size and proportion from the containers shown are provided for items such as cartoned milk and the like. Such other containers can be established in accordance with either form of the invention illustrated and can, if desired, be established of certain desired and selected features contained in each form of the invention illustrated.

Having described typical preferred forms and applications of my invention, I do not wish to be limited to the specific details herein set forth, but wish to reserve to myself all variations and modifications which appear to those skilled in the art to which the invention relates.

Having described my invention, I claim:

1. A rigid container for the reception of goods and adapted to be selectively engaged with like containers in vertical stacked or nested engagement, said container comprising: a rectangular lower frame, a rectangular upper frame above the lower frame, the outside dimensions of the lower frame being less than the inside dimensions of the upper frame, a plurality of vertically extending columns spaced about the frames with upper ends fixed to the upper frame outward of the inner perimeter thereof and with lower ends fixed to the lower frame inward of the outer perimeter thereof, means related to the lower frame defining a bottom, a plurality of spaced supports adjacent to opposite sides of the upper frame and projecting inwardly from the inner perimeter of and from below the upper frame, a plurality of laterally outwardly opening notches along the two sides of the lower frame below the sides of the upper frame with which the supports are related, said container adapted to be selectively arranged in stacked or nested relationship with other like containers arranged in vertical axial alignment therewith, the supports and notches of the containers arranged so that the notches of each container are out of register with the supports of an adjacent lower container when adjacent containers are in a first relative rotative position and are in register with each other when the containers are in a second relative rotative position with each other so that the supports of each container engage and stop the lower frame of an upper adjacent container related thereto in said first position whereby the related containers are in vertical stacked relationship and so that the lower frames of each container moves downwardly by the supports into the confines of a lower adjacent container and into nested engagement therewith when adjacent containers are in said second position.

2. A container as set forth in claim 1 wherein, said supports are positioned below the upper frame so that when the lower frame of the container is engaged and stopped by the supports of an adjacent lower container the said lower frame occurs within the confines of the upper frame of the lower container whereby the upper frame of the lower container retains and prevents lateral and longitudinal shifting and displacement of the container relative to the lower container.

3. A container as set forth in claim 1 wherein, said supports are defined by laterally extending offsets established in the upper portion of columns fixed to and extending between the upper and lower frame.

4. A container as set forth in claim 1 wherein, said supports are positioned below the upper frame so that when the lower frame of the container is engaged and stopped by the supports of an adjacent lower container the said lower frame occurs within the confines of the upper frame of the lower container whereby the upper frame of the lower container retains and prevents lateral and longitudinal shifting and displacement of the container relative to the lower container, said supports are defined by laterally extending offsets established in the upper portion of columns fixed to and extending between the upper and lower frames.

5. A container as set forth in claim 1 wherein the notches and the supports at each side of the container are in vertical alignment with each other and occur opposite vertically aligned supports and notches at the other side of the container, the pairs of opposite, aligned supports and notches occurring on vertical, transverse planes through the container spaced different distances from and parallel with the central,

transverse vertical plane of the container.

6. A container as set forth in claim 1 wherein the notches along each side of the container are spaced equally one from the other, the notches at one side of the container are on transverse vertical planes through the container midway between the notches on the other side of the container and the supports on each side of the container occur in common vertical transverse planes with the notches on the opposite side of the body.

7. A container as set forth in claim 1 wherein the notches along each side of the container are spaced equally one from the other, the notches at one side of the container are on transverse vertical planes through the container midway between the notches on the other side of the container and the supports on each side of the container occur in common vertical transverse planes with the notches on the opposite side of the body, said supports are defined by laterally extending offsets established in the upper portion of columns fixed to and extending between the upper and lower frames.

8. A container as set forth in claim 1 and further including an intermediate rectangular frame spaced between the upper and lower frames, said intermediate frame corresponding substantially in inside and outside dimensions with the upper frame and fixed to outer sides of the columns, said intermediate frame of each container adapted to engage the upper frame of an adjacent lower container when adjacent containers are in their second rotative position and to limit nested engagement of one container within another.

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