

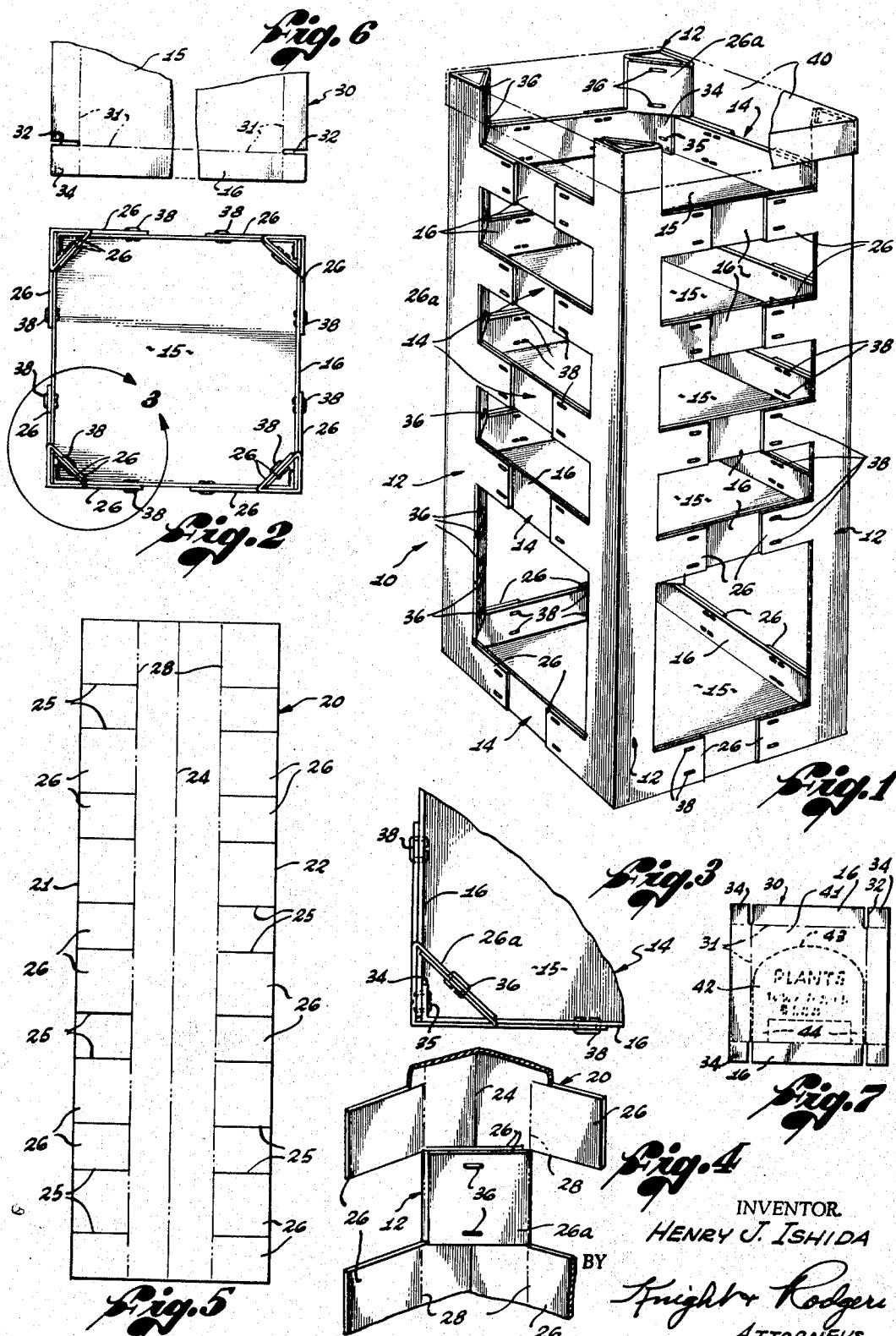
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COMBINED SHIPPING AND DISPLAY RACK

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**COMBINED SHIPPING AND DISPLAY RACK**  
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## ABSTRACT OF THE DISCLOSURE

A rack that is made of cardboard can be erected to provide a combined shipping and display rack for merchandise and is especially suited to shipping and displaying plants. Several trays are provided at different levels, and the spacing between these can be adapted to the merchandise. After use, the rack may be disposed of by burning.

The present invention relates generally to display and storage racks; and it is more particularly concerned with a prefabricated, disposable rack which may be used for both shipping and display purposes.

It is a general object of the invention to provide a design for a prefabricated rack such that the components can be shipped flat and then easily and quickly erected at the site of use to form a rack which is structurally strong enough to be used for shipping purposes as well as an attractive display rack for the merchandise which it contains.

It is also a general object of the present invention to provide a rack having the above characteristics which is made of inexpensive materials, yet strong enough to perform the task desired, which permit the rack to be easily disposed of after a single use.

A further object of the present invention is to provide a rack which is sufficiently strong to carry a substantial load of articles through the normal operations of storage and shipping, and yet which can be placed on the retailer's floor for display purposes, there being sufficient open space for the merchandise to be easily seen by purchasers.

The present invention has been developed with the needs in mind of the nurseryman to have a rack upon which plants, either potted plants or bedding plants, or other merchandise, can be displayed at the point of retail sale. Heretofore this has been accomplished by loading trays or pots of plants into boxes or racks which are used to ship the merchandise. Upon arrival at the point of sale, the plants in their trays or pots are transferred from the shipping containers to floors, benches, tables, or any other type of support that is convenient. The transfer or unpacking, of course, must be done within a short time after receipt of plants and requires a considerable amount of labor. Prompt handling and unpacking after arrival is essential due to the perishable nature of the merchandise which requires water and air; and adequate labor is not always available upon demand. This condition adds to the usual expense of handling plants. Also, the display facilities at the retail area are often not adequate since permanent facilities are usually not provided at the point of sale. As a result, the merchandise is not always properly or well displayed and the grower, as well as the retailer, suffers from consequent low sales volume.

It thus becomes apparent that an inexpensive, disposable container which can be used to hold the plants during shipment and then used as a display rack offers the advantage of reducing the cost of handling the plants and therefore the total sales cost, and at the same time can provide the retailer improved display facilities which make it more economical for him to handle plants since the density of the merchandise per square foot of floor space is increased and also the attractiveness of the display is increased, thus enlarging sales volume.

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It is also advantageous to provide protection for the plants, or other merchandise, during shipping and all phases of handling and transport. To this end, a suitable container that encloses and protects a number of plants against damage may reduce handling losses and enhance the value of the merchandise.

The above and other objects of the present invention are achieved by providing a combined shipping and display rack comprising a plurality of individual corner columns, each formed from a single sheet of low-cost material, typically paperboard but without limitation thereto, said sheet being folded longitudinally to dispose the portions at opposite sides of the fold at an angle to each other. One or more tray or platform supports are formed integrally with each column and extend across the included angle of the column. At least one platform rests upon the support elements of a plurality of columns to provide a base upon which plants or other merchandise can be displayed. Means are provided interconnecting the columns to hold the plurality of columns in fixed positions relative to each other and to the platform or platforms, in a preferred embodiment of the invention such interconnecting means including the side walls of trays of which the bottoms are the platforms upon which the merchandise rests.

The columns are preferably made from paperboard of similar low-cost sheet material which can be cut into the form of an elongated rectangle, scored to provide the desired fold lines, and cut inwardly from opposite edges to provide a series of flaps which can be used either to provide the tray supports or as means for connecting the columns to the tray side walls or other means interconnecting the columns.

How the above objects and advantages of the present invention, as well as others not specifically referred to herein, are attained will be better understood by reference to the following description and to the annexed drawing, in which:

FIG. 1 is a side, front and top perspective view of a rack constructed according to the present invention.

FIG. 2 is a top plan view of the rack of FIG. 1.

FIG. 3 is an enlarged fragmentary plan view of one corner of the rack, as indicated by the arrows 3 in FIG. 2.

FIG. 4 is a fragmentary perspective of the inside face of one corner column after folding longitudinally and with one pair of flaps folded into the support position.

FIG. 5 is a front elevation of a blank, before folding, from which one of the corner columns is erected.

FIG. 6 is a fragmentary plan view of a blank from which a tray is erected.

FIG. 7 is a plan view at a reduced scale of a blank from which a cover for the rack can be made.

Referring now to the drawing, and particularly to FIG. 1, there is shown a presently preferred embodiment of the invention in the form of a rack, indicated generally at 10, having four corner columns 12 supporting a plurality of trays 14. Each of the trays comprises a bottom 15 which provides a platform upon which merchandise can be supported for display and transportation, and upstanding sides 16, preferably integral with bottom 15, which become part of the means for interconnecting the columns to hold them in assembly position.

Although the rack herein shown is provided with four corner columns, this number is not limitative on the invention. Generally speaking, three or more such columns provide a stable structure and consequently any suitable number of such columns may be employed. Likewise the number of trays 14 may be changed to adapt the number to the spacing between successive trays and the total height or length of corner columns 12.

The detailed construction of the rack will be more easily understood by first describing the blank from which

each corner column 12 is made. Such a blank is shown in elevation in FIG. 5. The blank 20 is cut from a flat sheet of material, preferably corrugated paperboard or the like. When it is expected that the rack will come into contact with moisture, the sheet material may be impregnated with some waterproofing material, if desired. However, the material from which blank 20 is made is not limitative upon the present invention beyond the fact that the present design permits the use of inexpensive materials which are easily disposable.

Sheet 20 is preferably rectangular in outline and elongated in one direction. While the two long edges 21 and 22 at opposite sides of the board are shown in FIG. 5 as being parallel, this also is a preferred arrangement and is not limitative upon the invention. Cutting edges 21 and 22 along straight, parallel lines has the advantage of reducing to a minimum any cutting losses, but the edges can be given other configurations for structural or ornamental reasons.

Blank 20 is provided with a centrally located, longitudinally extending score line 24 along which the blank is folded to form the corner column, as will be further explained. It is preferred that the score line be located on the axis of symmetry of the sheet; but it may be displaced therefrom if desired.

A plurality of cuts 25 are made extending inwardly from each of the opposite edges 21 and 22. Such cuts 25 are preferably parallel to each other and spaced apart more or less uniformly for the length of the blank, although it will be apparent that a uniform spacing is not essential. Between each two successive cuts at the same edge of the blank, there is thus formed a flap 26 of rectangular outline which is free along three sides and is joined or integral with the blank along the remaining fourth side. For reasons that will be more fully apparent, it is preferred that cuts entering from opposite edges 21 and 22 be aligned transversely of the blank so that the flaps 26 along one side of the blank are aligned with the flaps along the other side of the blank.

In erecting the column, selected flaps 26 are folded inwardly. In order that any of the flaps may be folded as desired at the time of erecting the rack, it is preferred that two score lines 28 be made on the blank, these score lines extending parallel to the central score line 24 and each located at the base of one row of flaps 26. With this arrangement, maximum flexibility in the selection of flaps to be bent over is available. However, in the event that one particular design of rack is being produced from blanks 20, score lines 28 may be intermittent rather than continuous and may extend across only the bases of selected flaps which it is known in advance will be folded or bent along these score lines.

For the sake of convenience and economy as well as to contribute to the other advantages of the present invention, the trays 14 are preferably each made from a flat blank 30, of which two corners are shown in FIG. 6. The blank is preferably cut from sheet stock of a material similar to that used for corner columns 12. The completed tray provides a flat bottom 15 which serves as a platform upon which the merchandise can be supported, and four integral side walls 16 which extend upwardly from the tray bottom around the perimeter thereof. To obtain this tray from blank 30, the blank is provided with four fold lines 31, obtained by scoring or otherwise treating blank 30, these fold lines being parallel to and equidistant from the four edges of the rectangular blank. At each corner is a cut 32 extending inwardly from one edge along a fold line to the fold line extending parallel to that edge. The cut 32 forms at each corner a rectangular flap 34 which is integral with the blank along only one side of the flap at a fold line 31.

The tray is erected by folding the blank along the four score or fold lines 31 to raise the side walls 16 upwardly around the central portion of the blank which becomes bottom 15 in the completed tray. Corner flaps

34 are folded 90° inwardly into overlapping relation with the respective adjoining side walls 16, as may be seen in FIG. 3. The side wall and overlapping flap are then fastened together by any suitable means, such as by a wire staple 35. A staple is preferred since it is easily and quickly installed by the user and does not require any waiting time or special equipment, as may be the case with adhesives.

Each corner column 12 is erected from a blank 20 by first bending the blank along central score line 24 to dispose the two portions at opposite sides of line 24 at a right angle to each other, assuming that four columns are used to produce a rectangular structure as shown in FIG. 1. Next, selected flaps 26 are folded over toward each other along fold lines 28 to bring selected flaps at opposite edges of the corner column into overlapping relation, as indicated at 26a in FIG. 4. In this overlapping relation, two flaps are fastened together by some suitable fastening means, typically and preferably by wire staples as at 36, for the reasons given above. A pair of flaps 26 forms a corner support 26a for a tray or platform, extending across the interior or included angle of the column.

A determination of the flaps which are to be folded over and fastened together depends upon the number of trays or platforms in the finished rack. At the location of each tray, no change is made in the position of the flap 26, the flap being left to project outwardly in prolongation of that side of the blank 20, as shown in FIG. 1. In between the flaps which are thus left unfolded, all of the flaps 26 are folded into overlapping relation, as may be seen in FIG. 1 which shows a structure having five levels of platforms 15. Preferably, a tray is located at the extreme bottom of the rack so that the bottom flaps are unfolded. On the other hand, the top tray is preferably placed below the top of the rack and consequently the top flaps of each column are folded and fastened as shown.

One advantage of the multiplicity of flaps 26 shown in FIG. 5 is the flexibility of the arrangement of the trays permitted. For example, if alternate pairs of flaps are folded over and fastened, starting from the top of each column, then a total of six trays can be incorporated in the completed structure, starting with a blank as in FIG. 5 having twelve flaps 26 along each side.

On the other hand, by changing the spacing of the trays, a lesser number, e.g., two, three, or four, may be built into the completed structure.

When four corner columns are each erected with a similar arrangement of flaps folded and fastened to form corner supports for the trays and with the remaining flaps extending outwardly and unfolded, then the final assembly takes place. A corner of each tray is then placed into the included angle of each of the corner columns to rest on the corner supports 26a and the unfolded flaps are fastened to side walls 16 of the trays in any suitable manner, as by wire staples 38. All of the trays, with the exception of the lowermost tray, are thus supported at each of four corners upon one of the corner supports provided by a pair of flaps 26 folded over and fastened together, as indicated at 26a in FIGS. 3 and 4.

The upstanding side walls of the trays provide rigid members which interconnect the four columns and hold them in fixed positions with respect to one another and with respect to bottoms 15 of the trays.

From this description, it will be apparent that effective interconnection of the columns can be attained by using members 16 which are not integral with platforms 15. However, greater strength and rigidity in the completed structure is obtained with trays of the character described.

When shipping the rack loaded with plants supported upon the several levels of platforms 15, it is preferable to protect the uppermost tier of merchandise by putting a cap or cover 40 over the top of the rack, as illustrated in FIG. 1. While only a corner of the cap in place is shown in FIG. 1 in full lines, it will be evident that this

cap is merely placed over the upwardly extending ends of the four corner columns and then pushed down onto the columns to form a protective cover over merchandise on the top tray. This cap 40 is then removed at the point of sale in order to better display the merchandise.

Cap 40 is made from a flat blank 41 shown in FIG. 7 that is similar in most respects to blank 30 for making a tray except that the cap is relatively inverted and is slightly larger to fit down around and outside of the columns. The sides of the cap depend below the center area and are spaced to slide snugly down around the columns. Fasteners may be used if desired to hold it in place but are usually not needed because of the cap-like shape of the cover. Optionally a central portion 42 of the cover may be imprinted with display advertising and then the imprinted area is surrounded by lines of weakness 43, formed by perforations, scoring or any other suitable means, to permit excess material to be easily broken away. The perforation lines 43 are shaped to provide two legs 44 attached to the display area, that can be inserted into the open upper ends of two corner columns 12 to hold the display upright for better viewing. The cover thus has a continuing use.

From the foregoing description, it will be apparent that changes in the detailed design and construction of the components of the rack constituting the present invention may occur to persons skilled in the art without departing from the spirit and scope of the present invention. Accordingly, it is to be understood that the foregoing description is considered as being illustrative of, rather than limitative upon, the invention as defined by the appended claims.

I claim:

1. A display rack comprising:  
a plurality of individual corner columns each formed from a single sheet of material folded longitudinally to dispose the portion at opposite sides of the fold at an angle to each other;  
a platform support integral with each column and extending across the included angle of the column;  
at least one platform resting upon the platform supports of the plurality of columns; and  
means interconnecting the columns to hold the columns in fixed positions relative to each other and to the platform.
2. A display rack as in claim 1 in which the platform support at each column is a pair of overlapping flaps fastened together and each integral at one edge with the column.
3. A display rack as in claim 1 in which each column has a plurality of flaps integral with the column along one edge of each flap,  
a pair of flaps at opposite sides of the column being fastened in overlapping relation to form said platform support; and  
a second pair of flaps fastened to rigid members extending between successive columns to provide said interconnecting means.
4. A display rack as in claim 1 in which each column has a plurality of flaps integral with the column along one edge of each flap, the flaps being disposed at two edges of the column in parallel rows,  
pairs of said flaps from opposite sides of the column being folded over each other and fastened together in overlapping relation to provide a plurality of said platform supports; and

other pairs of flaps from opposite sides of the column remaining in prolongation of the sheet at each side of the fold therein and fastened to said means interconnecting the columns.

5. A display rack as in claim 4 which also includes wire staples as the means fastening the flaps to each other or to said means interconnecting the columns.

6. A display rack as in claim 1 that also includes a cap-like cover slidably received over the upper ends of the corner columns.

7. A display rack as in claim 1 in which the corner columns are hollow and open at their upper ends, and which also includes a cap-like cover over the top of the rack, said cover having a flat, display area defined by a line of weakness and including at least one leg of a size to be received in the open upper end of a corner column.

8. As an article of manufacture, a blank for folding into a corner column structure for a display rack, comprising:

a sheet of paperboard or the like of elongated rectangular outline;

a fold line extending longitudinally of the sheet at a substantially median position; and

a plurality of integral flaps disposed along each of two opposite sides of the fold line, said flaps being defined at two sides by longitudinally spaced parallel cuts extending inwardly from opposite edges of the sheet, each cut entering from one edge being aligned with a cut entering from the opposite edge of the sheet.

9. An article of manufacture as in claim 8 which also includes a pair of score lines parallel to said fold line, each score line being at the base of the flaps adjacent one edge of the sheet.

10. A display rack comprising:

a plurality of individual corner columns having flat exterior sides, said columns being hollow and open at their upper ends;

a plurality of platforms supported by and between said columns;

means fastening the corner columns to the platforms to hold the columns in fixed positions relative to each other and to the platforms; and

a removable cover having depending sides slidably engaging the exterior sides of the columns surrounding a central area;

said central area having lines of weakness defining a pair of spaced legs insertable into the open upper ends of two columns when the cover is removed and excess material is broken away to define said legs.

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