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[54] **REFRIGERATOR FLORAL DISPLAY CABINET**
2 Claims, 6 Drawing Figs.

[52] U.S. Cl..... **62/256,**
62/416, 62/289
[51] Int. Cl..... **A47f 3/04**
[50] Field of Search..... **62/255,**
256, 249, 289, 416

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ABSTRACT: An elongated refrigerator floral display cabinet having an open top and a merchandise-supporting tray therein cooperating with the cabinet to define a plenum having an air inlet adjacent the top of one longitudinal wall. Refrigerating mechanism includes a plurality of longitudinally spaced evaporator units in the plenum, the evaporator units having air inlets connecting with the plenum and air outlets communicating with air passage means in an opposite longitudinal cabinet wall. Blower means imparts airflow through the evaporator units upwardly through said air passage means, and deflector means overlying the air passage means directs flow of air therefrom angularly downwardly over the tray and toward the air inlet to the plenum.

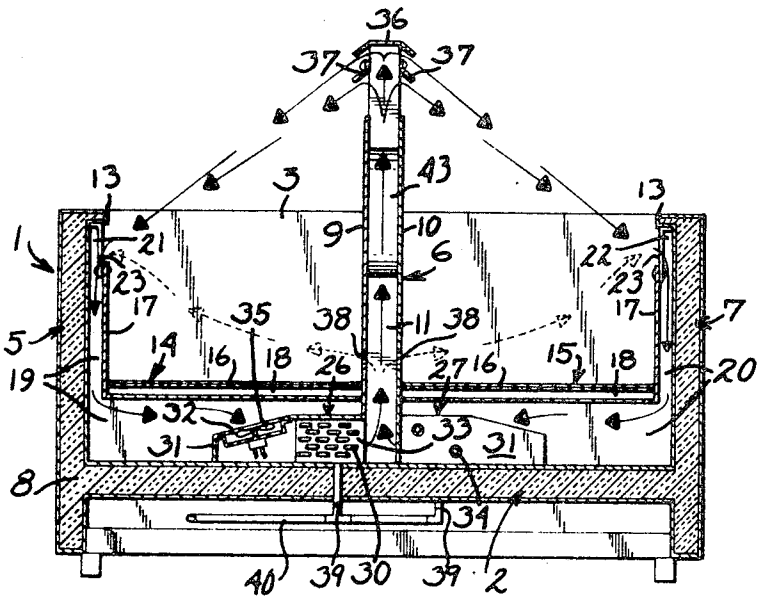


FIG. 1

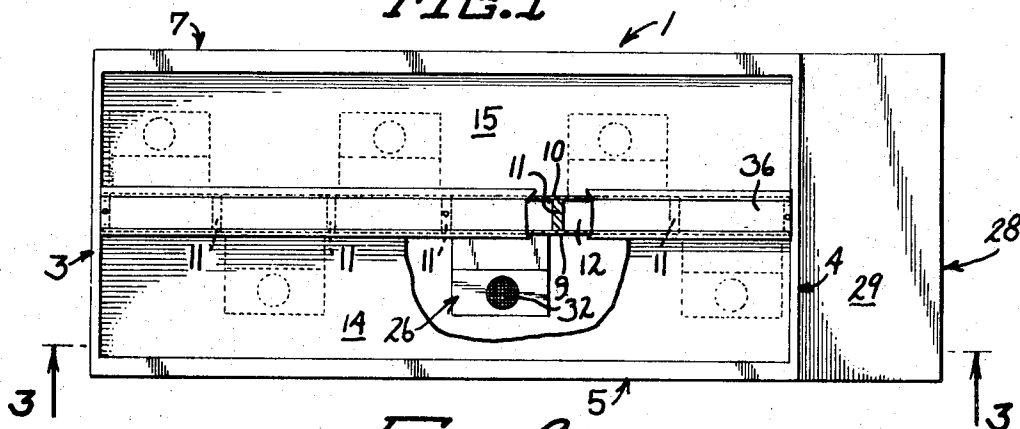


FIG. 2

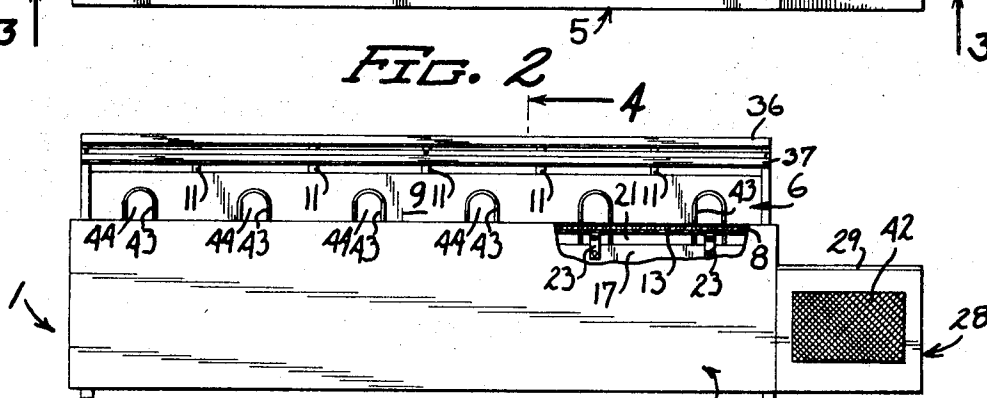
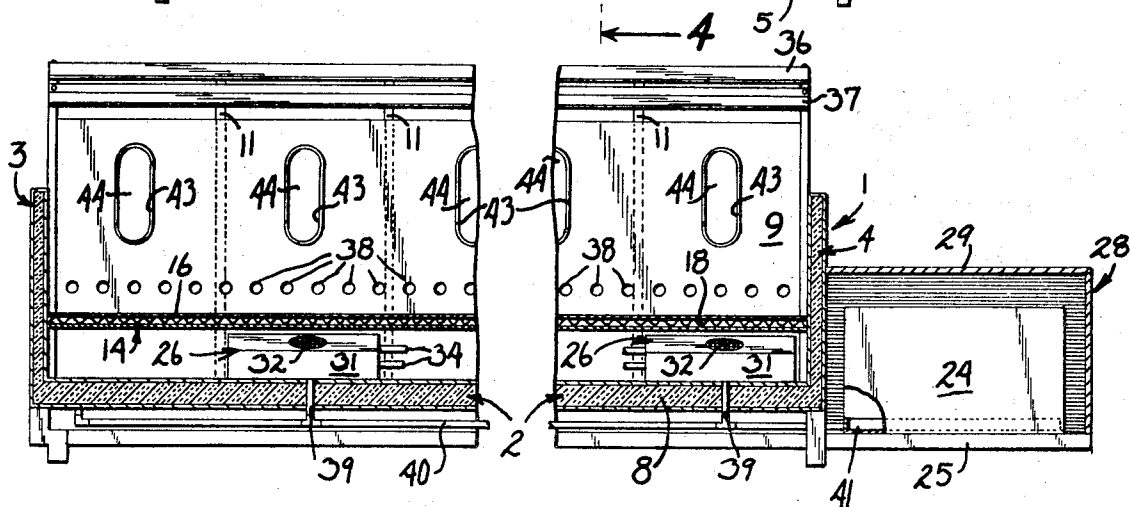


FIG. 3

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FIG. 4

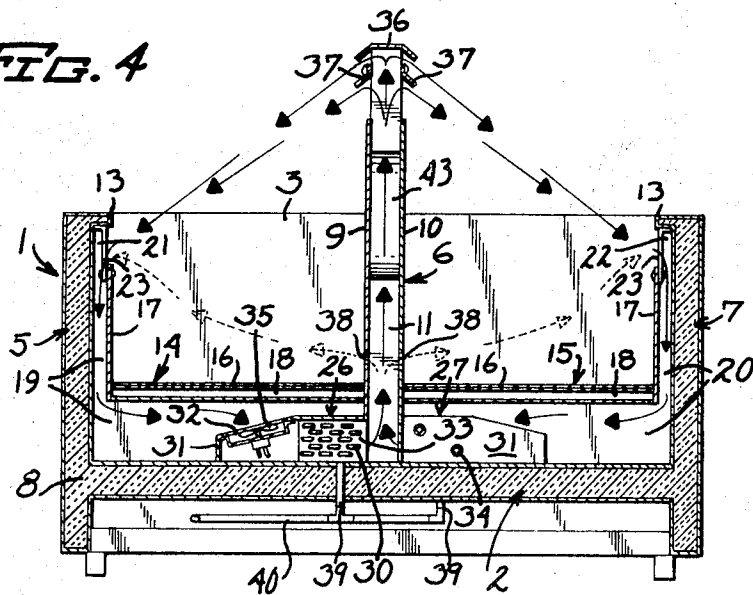


FIG. 5

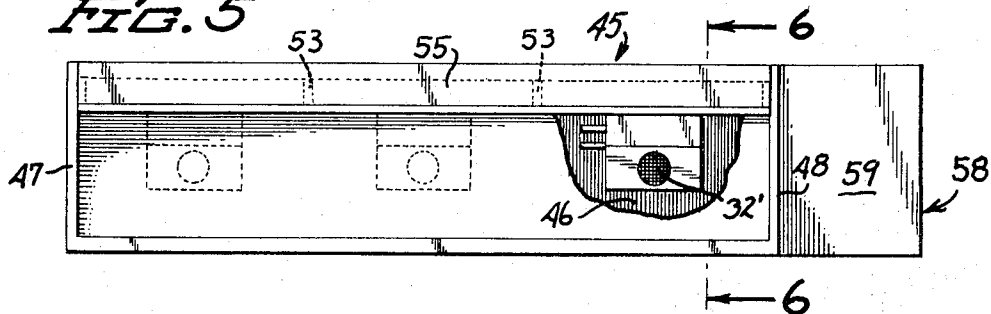
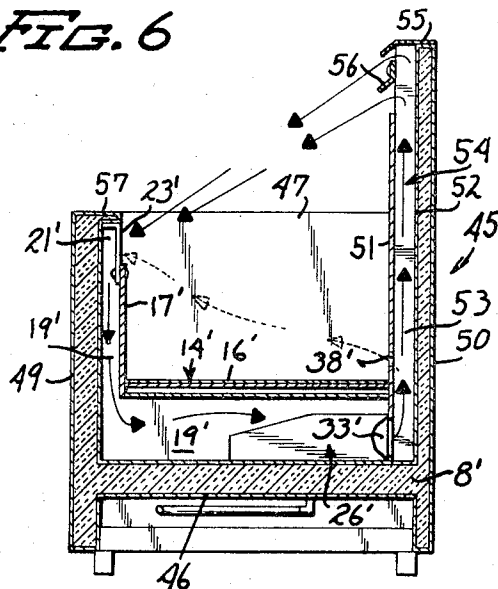


FIG. 6



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REFRIGERATOR FLORAL DISPLAY CABINET

SUMMARY OF THE INVENTION

The primary object of this invention is the provision of an open display for cut flowers, potted plants and like merchandise, having means for maintaining the merchandise in a fresh healthy condition over extended periods of time, while being in full open view to the public, in the interiors of supermarkets and other public places. To this end, we provide an open-topped generally rectangular cabinet having a bottom wall, opposite end walls and laterally spaced first and second longitudinal walls, the second of which extends above the level of the top of the first thereof. An elongated merchandise-supporting tray is mounted in the cabinet and includes a bottom portion upwardly spaced from the cabinet bottom wall and an upwardly projecting portion laterally inwardly spaced from the first longitudinal wall, the tray cooperating with portions of said end walls, longitudinal walls and said bottom wall to define a plenum. The second longitudinal wall defines air passage means extending upwardly from adjacent the bottom cabinet wall to the top of the second wall. Refrigerator or cooling mechanism includes a plurality of evaporator units disposed in the plenum in spaced-apart relationship longitudinally of the cabinet, the evaporator units having air inlets communicating with the plenum and air outlets communicating with the air passage means. The upper edge of the upwardly projecting tray portion is disposed at a lower level than top of said first longitudinal wall to provide an air inlet to the plenum within the cabinet. Blower means imparts an airflow from the plenum through the evaporator units, and from thence upwardly through the air passage means. A deflector, overlying the second longitudinal wall, directs cool air from the air passage means angularly downwardly over merchandise supported on the tray and toward the air inlet to the plenum. The second longitudinal wall is provided, above the tray bottom portion, with apertures to the air passage means for permitting flow of some of the cooled air therethrough across the bottom portion of the tray, this latter flow of air moving laterally toward the air inlet to the plenum.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a view in top plan of a refrigerator floral display cabinet produced in accordance with this invention, some parts being broken away and some parts being shown in section;

FIG. 2 is a view in side elevation, some parts being broken away and some parts being shown in section;

FIG. 3 is an enlarged fragmentary section taken substantially on the line 3-3 of FIG. 1;

FIG. 4 is an enlarged transverse section taken substantially on the line 4-4 of FIG. 2;

FIG. 5 is a view in top plan of a modified form of the floral cabinet of this invention, some parts being broken away; and

FIG. 6 is an enlarged transverse section taken on the line 6-6 of FIG. 5.

DETAILED DESCRIPTION

In the embodiment of the invention illustrated in FIGS. 1-4, a double-sided floral display cabinet is shown as comprising an open-topped rectangular casing 1 having a generally horizontally disposed bottom wall 2, opposite generally vertical end walls 3 and 4, and laterally spaced vertical longitudinal walls 5, 6 and 7. Preferably, the casing 1 is made from sheet metal, the bottom wall 2, end walls 3 and 4 and longitudinal walls 5 and 7 being preferably hollow and filled with suitable heat-insulating material 8. As shown, the longitudinal wall 6 comprises a pair of laterally spaced wall elements 9 and 10 that extend upwardly from the bottom wall 2 above the level of the tops of the longitudinal walls 5 and 7, the wall elements 9 and 10 having a plurality of vertical transverse partition elements 11 which divide the space between the wall elements 9

and 10 into a plurality of vertically extending air passages 12. As shown in FIGS. 2-4, the partitioned elements 11 extend upwardly above the upper edges of the wall elements 9 and 10. With reference particularly to FIGS. 2 and 4, it will be seen that the longitudinal walls 5 and 7 are formed to provide laterally inwardly projecting top lips 13 that extend substantially the full length of the casing 1.

A pair of cross-sectionally L-shaped merchandise-supporting trays 14 and 15 are disposed in the casing 1, one between the longitudinal walls 5 and 6 and the other between the longitudinal walls 6 and 7, the trays 14 and 15 extending the full length of the casing 1 between the end walls 3 and 4 thereof. Each tray 14 and 15 includes a generally horizontal portion 16 disposed in upwardly spaced relationship to the bottom wall 2, and a generally vertical side portion 17 disposed in inwardly spaced parallel relationship to its adjacent one of the longitudinal walls 5 and 7. Preferably, and as shown particularly in FIG. 3, the bottom portions 16 are of double-walled construction, having a corrugated reinforcing member 18 between the walls thereof. They tray bottom and side portions 16 and 17 cooperate with their adjacent longitudinal casing walls 5 and 7, the end walls 3 and 4, longitudinal wall 6 and bottom wall 2, to define a pair of plenums 19 and 20. As shown in FIGS. 2 and 4, the upper longitudinal edges of the side portions 17 are downwardly spaced from the upper ends of their adjacent longitudinal casing walls 5 and 7 and the turned lips 13 thereof, the upper edges of the side members 17 cooperating with the lips 13 to provide air inlet openings 21 and 22 to the plenums 19 and 20 respectively. The bottom portions 16 of the trays 14 and 15 are welded or otherwise rigidly secured to the interior surfaces of the end walls 3 and 4 and to the wall elements 9 and 10 of the longitudinal wall 6, the side members 17 being supported by a plurality of longitudinally spaced brackets or the like 23 that are welded or otherwise rigidly secured to the turned lips 13.

Cooling means for the cabinet is in the nature of conventional and well-known refrigerator mechanism including a condenser and compressor unit 24 mounted on one or more supporting means 25 that extend longitudinally outwardly from the cabinet adjacent the end wall 4 thereof, one of the beams 25 being shown in FIG. 3, and a plurality of evaporator units 26 and 27 mounted in the plenums 19 and 20, respectively. The condenser and compressor unit is disposed within a generally rectangular cover 28 having a flat top 29 which serves as a display platform for merchandise. The evaporator units 26 and 27 each include cooling coils 30 disposed within a housing 31, each housing 31 having an air inlet opening 32 to its respective plenum 19 and 20. Each evaporator 26 and 27 has an air outlet 33 opening into the lower end of a different one of the air passages 12 in the longitudinal wall 6, one of said outlet openings 33 shown in FIG. 4. With reference to FIG. 1, it will be seen that the evaporator units 26 are associated with every other one of the air passages 12, the evaporator units 27 being associated with alternate ones of the air passages 12. The several evaporator units 26 and 27 are operatively connected to the condenser and compressor unit by fluid conduits 34, in the usual manner.

Cooling air is circulated through the cabinet by a plurality of motor driven blowers or fans 35, one of which is shown in FIG. 4. Preferably, the blowers 35 are disposed in the inlet openings 32 of each evaporator units 26 and 27, and draw air into their respective evaporator units 26 and 27 from their respective plenums 19 and 20. From the blowers 35, air flows over the evaporator coils 30 and upwardly through the air passages 12 to the open top of the longitudinal wall 6. Deflector elements 36 and 37 are mounted to the upper end portions of the partition elements 11 and direct the flow of cooled air laterally outwardly and downwardly over merchandise, such as cut flowers or potted plants, on the trays 14 and 15 and toward the air inlet openings 21 and 22 to the plenums 19 and 20, respectively. With reference to FIGS. 1-3, it will be seen that the deflector elements 36 and 37 are coextensive in length with the longitudinal wall 6. The wall elements 9 and 10

of the longitudinal wall 6 are each provided with a plurality of longitudinally spaced openings 38 just above the tray portions 16 to permit some of the cooled air flowing upwardly through the passages 12 to escape laterally outwardly to the lower portions of merchandise, not shown, on the trays 14 and 15. Air flowing outwardly through the openings 38 flows laterally outwardly and angularly upwardly toward the air inlet openings 21 and 22, as shown by dotted arrows in FIG. 4, the main air-flow being generally indicated by solid arrows in FIG. 4. Thus, a continuous flow of cooled air is maintained over and through the merchandise supported on the trays 14 and 15, fresh air being continually drawn in through the air inlet openings 21 and 22 together with the recirculated air flowing from the deflector elements 36 and 37 to the plenum air inlets 21 and 22. Control of the air temperature is maintained in the usual manner by a thermostat, not shown, but placed in an advantageous position within the cabinet. Preferably, the temperature of the air flowing through the cabinet is maintained at approximately 42°F., at which temperature floral merchandise is kept in a fresh healthy condition.

A plurality of drains 39 extend upwardly through the bottom casing wall 2 for the purpose of receiving condensate from the plenums 19 and 20, the drains 39 being connected to a conduit 40 that extends to an evaporator tray 41 at the bottom portion of the condenser and compressor unit 24. Evaporation of the condensate in the tray 41 promotes efficient operation of the condenser and compressor unit, the evaporated moisture being discharged outwardly of the cover 28 through one of a pair of grill-equipped openings 42 therein, one of which is shown in FIG. 2.

As shown in FIGS. 2—4, the longitudinal wall 6 is provided with a plurality of longitudinally spaced vertically elongated transverse tubes 43 that define sight openings 44 through the longitudinal walls 6, whereby at least a portion of the merchandise supported on one of the trays 15 may be viewed from the opposite side of the cabinet.

In the modified form of cabinet illustrated in FIGS. 5 and 6, an open-topped casing 45 is shown as comprising a horizontal bottom wall 46, opposite end walls 47 and 48, and laterally spaced longitudinal walls 49 and 50, the latter of which comprises spaced wall elements 51 and 52 having longitudinally spaced vertical partitions 53 therebetween defining a plurality of vertical air passages 54. As shown in FIG. 6, the longitudinal wall 50 extends upwardly of the level of the top of the longitudinal wall 49, and at its upper end is provided with longitudinally extending deflector elements 55 and 56. The upper longitudinal edge portion or top of the wall 49 is formed to provide a laterally inwardly projecting lip 57. A merchandise receiving and supporting tray 14', similar to the tray 14, is disposed within the casing 45 and supported by one or more bracket elements 23'. Like the tray 14, the tray 14' cooperates with the several walls of the casing 45 to define a plenum 19' in which is mounted a plurality of longitudinally spaced blower-equipped evaporator units 26' having air inlets 32' communicating with the plenum 19' and cooled air outlets 33' each communicating with a different one of the air passages 54. The side portion 17' of the tray 14' has an upper edge disposed in downward spaced relationship to the intumed lip 57 to define therewith an air inlet opening 21' to the plenum 19'. The wall element 51 is provided adjacent the tray bottom portion 16' with a plurality of longitudinally spaced openings 38', one of which is shown in FIG. 6, for the same purpose as the openings 38 in the longitudinal wall 6. The wall element 52, like the bottom wall 46 and longitudinal wall 49, is of double-walled sheet metal construction with heat-insulating material 8' therein. A container or cover 58, adjacent the end wall 48 encloses a condenser and compressor unit, not shown, for the evaporator units 26'. The cabinet of FIGS. 5 and 6 operates in the same manner as that of FIGS. 1—4, cooled air being forced upwardly through the vertical air passages 54 and deflected angularly outwardly and downwardly by the deflector elements 55 and 56 toward the air inlet opening 21' to the plenum 19'. Further, some of the air flowing upwardly

through the passages 54 flows outwardly through the openings 38' and angularly outwardly and upwardly therefrom toward the air inlet opening 21', as shown by dotted arrows in FIG. 6, the main flow of air through the cabinet being shown by full arrows in FIG. 6.

The form of cabinet illustrated in FIGS. 1—4 is adapted to be placed in an area where persons may have easy access to both sides of the cabinet, whereas the form of cabinet illustrated in FIGS. 5 and 6 is adapted particularly to be placed against a wall or like partition. The cover 58 is provided with a flat top 59 for display of merchandise placed thereon.

I claim:

1. A refrigerator floral display cabinet comprising:

- a horizontally elongated open-topped casing having a bottom wall, generally vertical spaced-apart first, second and third longitudinal walls, and end walls, said second longitudinal wall extending upwardly above the level of the top of said first and third longitudinal walls and positioned therebetween;
- b. said second longitudinal wall comprising laterally spaced parallel wall elements defining air passage means extending upwardly from adjacent said bottom wall to the top of said second longitudinal wall, said second longitudinal wall further including a plurality of longitudinally spaced vertical partitions disposed transversely between said wall elements and dividing said air passage means into a plurality of air passages;
- c. first and second merchandise-receiving trays mounted in said casing and each including a bottom portion upwardly spaced from said bottom wall and a generally vertical side portion inwardly spaced from said first and third longitudinal walls, respectively, said trays extending from one of said end walls to the other thereof and cooperating therewith and with said longitudinal walls and bottom wall to define a first and second plenum, said side portions having upper longitudinal edges disposed in downwardly spaced relation to the top of said first and third longitudinal walls and cooperating with said first and third longitudinal walls to provide air inlets to said first and second plenums, respectively;
- d. cooling mechanism including a first and second plurality of evaporator units disposed in said first and second plenums, respectively, in spaced apart relationship longitudinally of the cabinet, each evaporator unit in said first plenum having an air inlet communicating with said first plenum and an air outlet communicating with alternate ones of said plurality of air passages in said air passage means adjacent said bottom wall and each evaporator unit in said second plenum having an air inlet communicating with said second plenum and an air outlet communicating with the remaining ones of said plurality of air passages in said air passage means adjacent said bottom wall;
- e. blower means for imparting an airflow through said evaporator units and upwardly through said passage means;
- f. deflector means overlying said second wall for directing airflow angularly downwardly across said first and second trays and toward said air inlets to said first and second plenums; and
- g. a plurality of longitudinally spaced tubular elements extending transversely through said wall elements to provide sight openings through said second longitudinal wall.

2. A refrigerator floral display cabinet comprising:

- a. a horizontally elongated open-topped casing having a bottom wall, generally vertical spaced-apart first, second and third longitudinal walls, and end walls, said second longitudinal wall extending upwardly above the level of the top of said first and third longitudinal walls and positioned therebetween;
- b. said second longitudinal wall comprising laterally spaced parallel wall elements defining air passage means extending upwardly from adjacent said bottom wall to the top of said second longitudinal wall;

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- c. first and second merchandise-receiving trays mounted in said casing and each including a bottom portion upwardly spaced from said bottom wall and a generally vertical side portion inwardly spaced from said first and third longitudinal walls, respectively, said trays extending from one of said end walls to the other thereof and cooperating therewith and with said longitudinal walls and bottom wall to define a first and second plenum, said side portions having upper longitudinal edges disposed in downwardly spaced relation to the top of said first and third longitudinal walls and cooperating with said first and third longitudinal walls to provide air inlets to said first and second plenums, respectively;
- d. a plurality of blower means mounted in said casing for providing a plurality of independent airflow paths therein, at least one of said airflow paths including said air passage

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- means in said second longitudinal wall, said first plenum and a first independent blower means and at least a second of said airflow paths including said air passage in said second longitudinal wall, said second plenum and a second independent blower means;
- e. cooling mechanism mounted in said casing so that at least a portion thereof is disposed in each of said plurality of independent airflow paths and the airflow must pass through said portion of said cooling mechanism as it circulates in said path; and
- f. deflector means overlying said second wall for directing airflow angularly downwardly across said first and second trays and toward said air inlets to said first and second plenums.

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