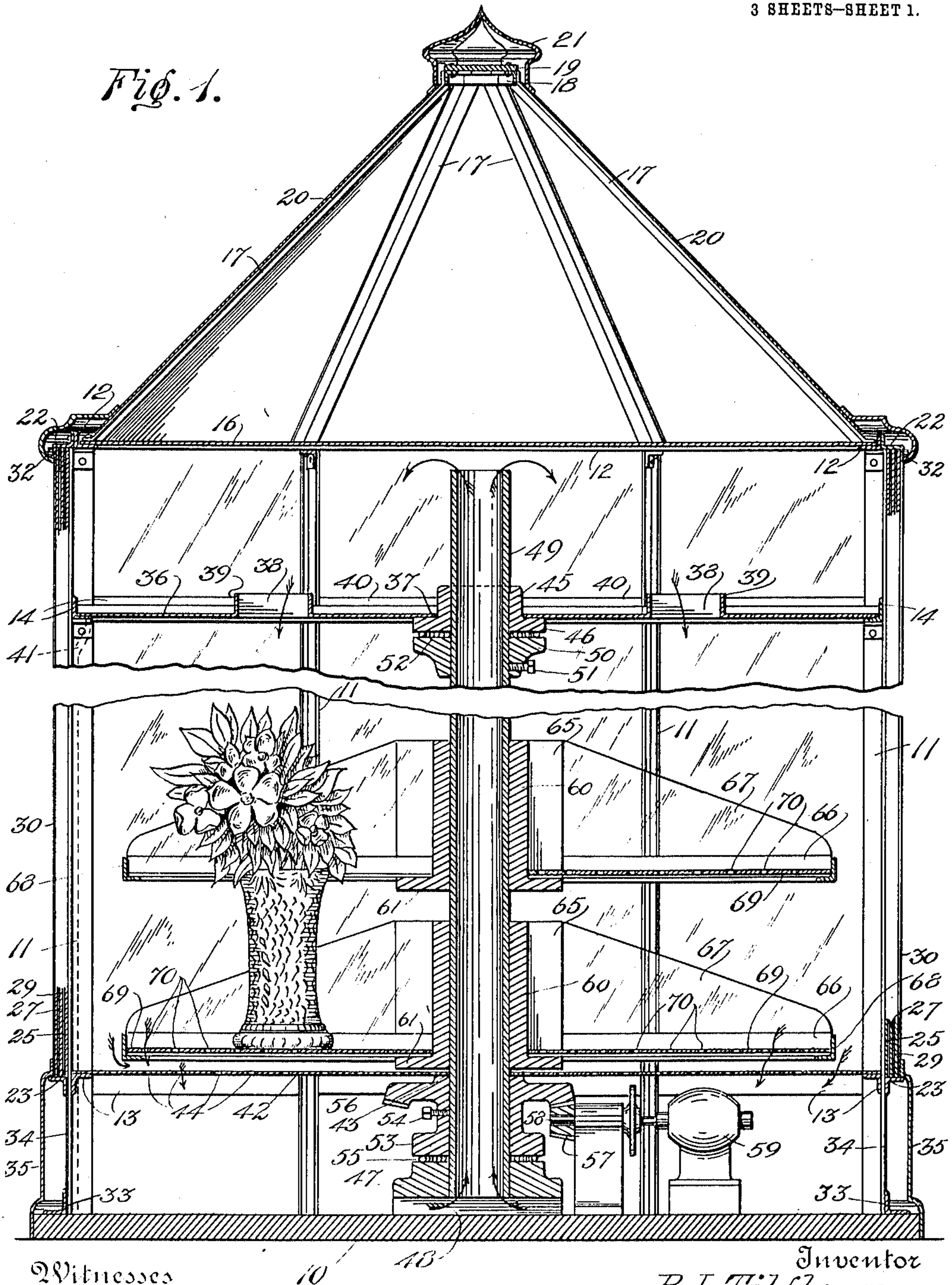


R. L. TILGHMAN.  
FLORAL AND DISPLAY REFRIGERATOR.  
APPLICATION FILED APR. 15, 1910.

986,875.

Patented Mar. 14, 1911.

3 SHEETS—SHEET 1.



Witnesses

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Fig. 2.

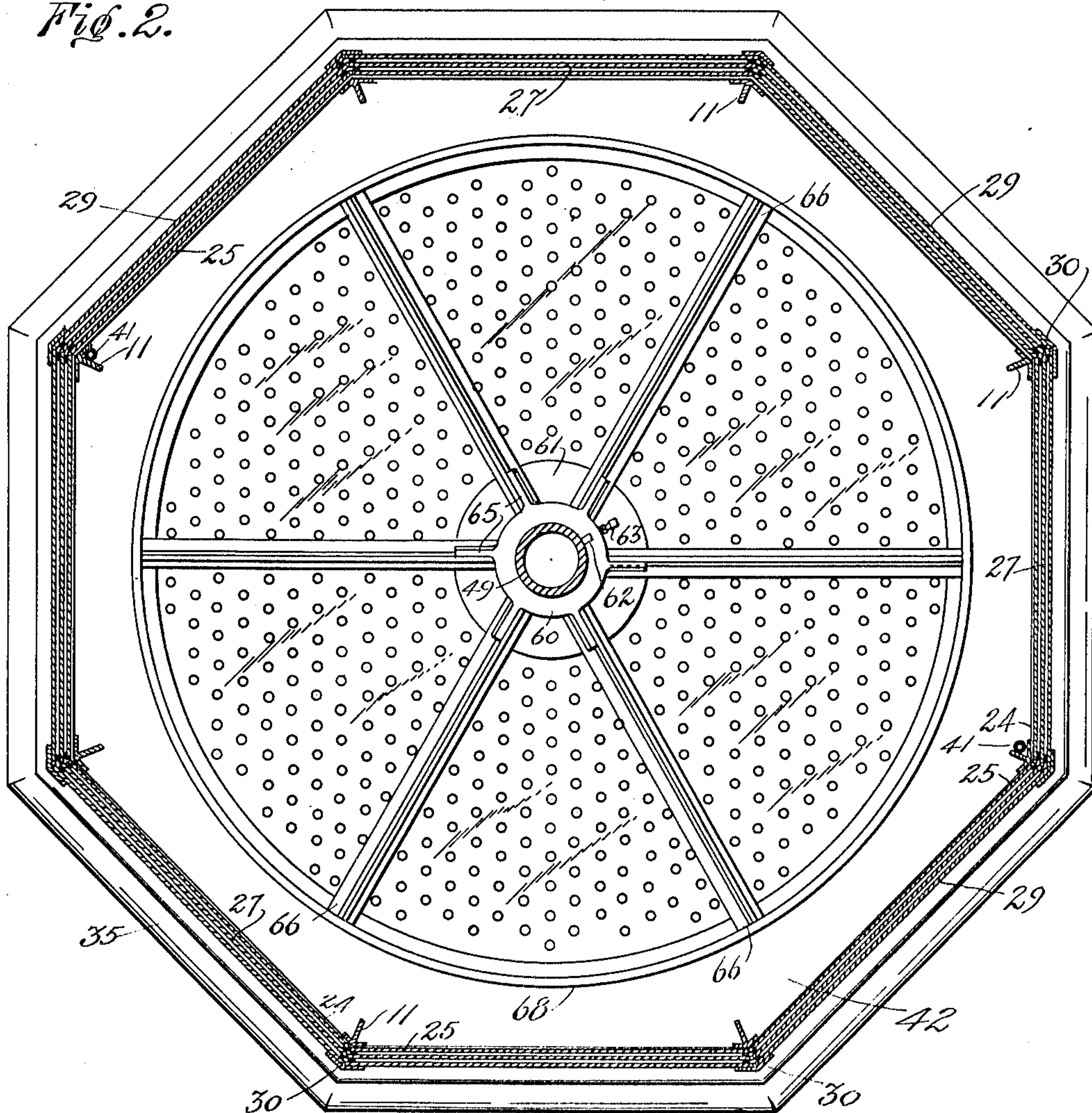
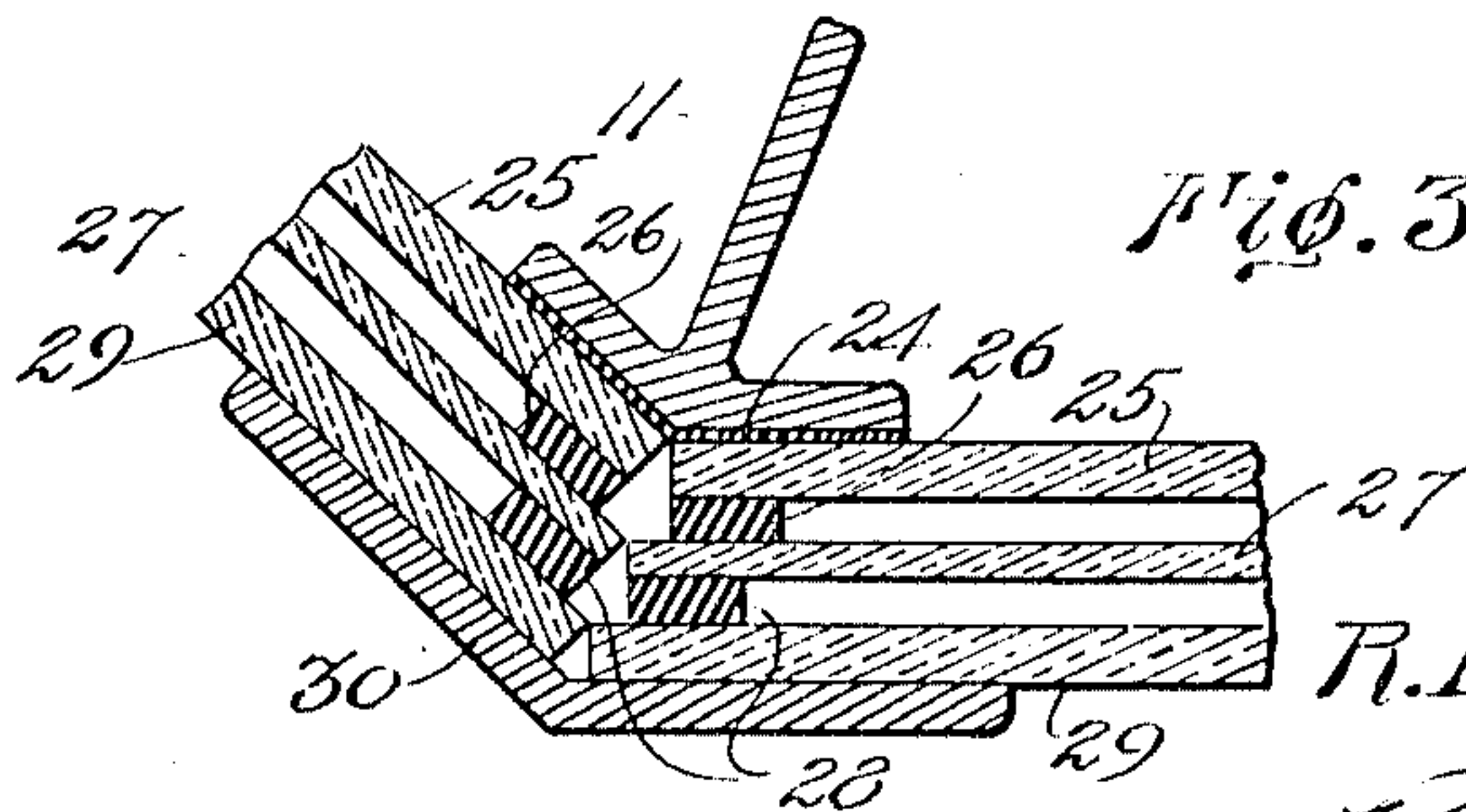


Fig. 3.



Witnesses

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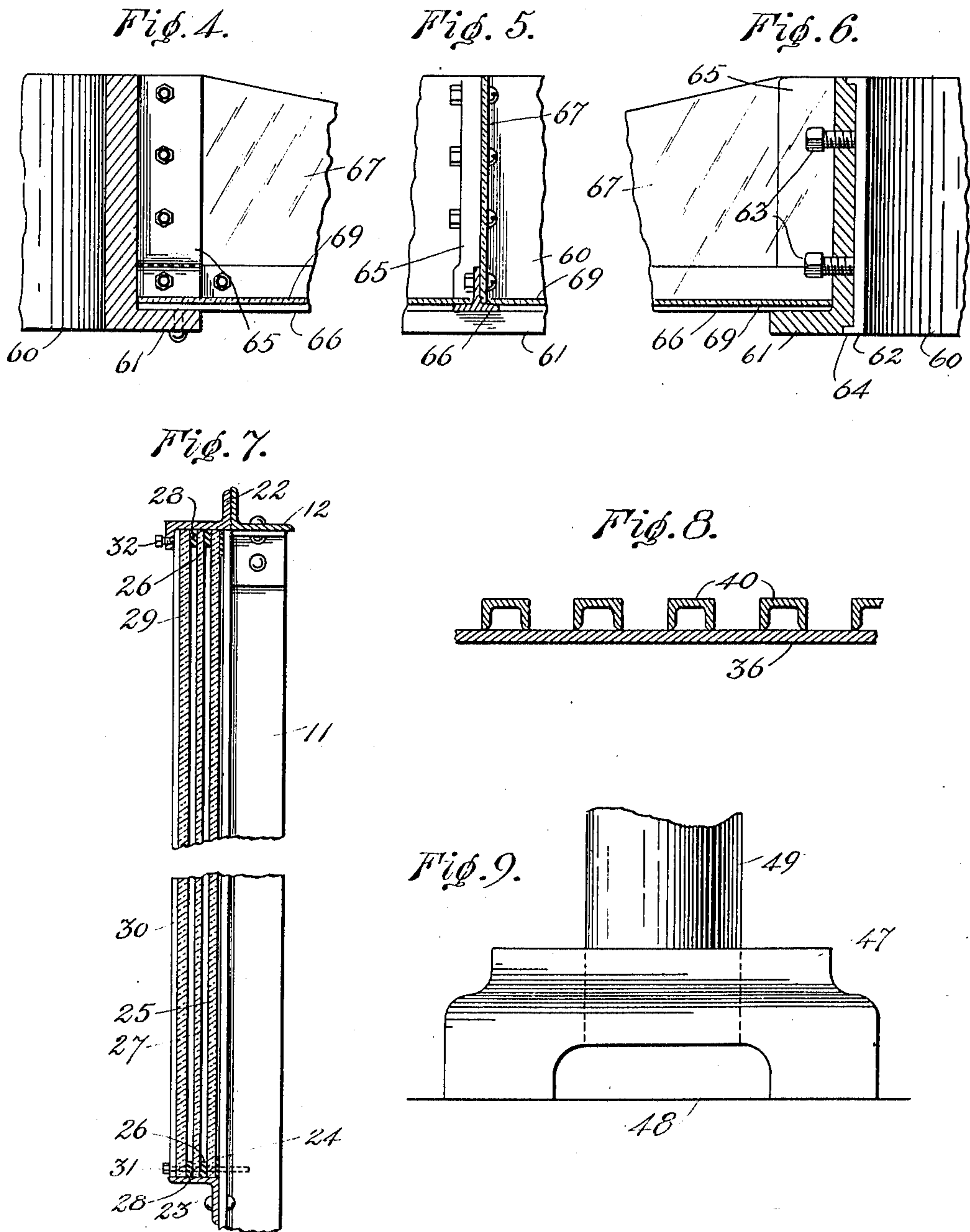
Per. Schuster &  
 Attorney

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# UNITED STATES PATENT OFFICE.

ROSWELL L. TILGHMAN, OF BIRMINGHAM, ALABAMA, ASSIGNOR TO TILGHMAN REFRIGERATOR COMPANY, OF BIRMINGHAM, ALABAMA, A CORPORATION OF ALABAMA.

FLORAL AND DISPLAY REFRIGERATOR.

986,875.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed April 15, 1910. Serial No. 555,665.

*To all whom it may concern:*

Be it known that I, ROSWELL L. TILGHMAN, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Floral and Display Refrigerators, of which the following is a specification.

This invention relates to refrigerators for floral and display purposes and has special reference to a device of this character designed to exhibit flowers and the like while at the same time keeping them from fading by chilling the atmosphere surrounding them.

One object of the invention is to improve the general construction of devices of this character.

A second object of the invention is to provide a refrigerator of this character with an improved form of revolving display stand.

A third object of the invention is to provide a refrigerator having a revolving display stand with a novel arrangement of air circulating means.

A fourth object is to provide the several flower stands with removable bottom sections and arrange the stands so that by removing the proper sections tall flowers, such as roses and also tall vases may rest on one stand and project up through the openings in the stands above provided by the removal of the sections. This enables me to utilize all the available display space within the refrigerator and at the same time display both long and short stemmed flowers.

With the above and other objects in view, as will be hereinafter apparent, the invention consists in general of a novel form of refrigerator equipped with glazed sides and an improved construction of revolving display stand.

The invention further consists in certain novel details of construction and combinations of parts, hereinafter fully described, illustrated in the accompanying drawings and specifically set forth in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and Figure 1 is a vertical section through a refrigerator constructed in accordance with this invention. Fig. 2 is a horizontal section of such a refrigerator. Fig. 3 is an enlarged detail section taken

transversely through one of the corners of the display chamber. Fig. 4 is an enlarged detail section of a portion of one of the flower supporting stands showing the manner of securing the glass partitions to the central supporting hub. Fig. 5 is a view of the same detail as disclosed in Fig. 4 but taken at right angles to the latter. Fig. 6 is a detail section taken through one of the hubs of the flower supporting stands, the view showing the manner of securing the hub in place on the central shaft. Fig. 7 is an enlarged detail vertical section showing the manner of securing the glass for the outer casing. Fig. 8 is an enlarged detail section of a portion of the floor of the ice chamber, the view being taken at right angles to Fig. 1. Fig. 9 is an enlarged detail view of the bottom bearing for the central shaft of the device, the view being at right angles to Fig. 1.

In the construction of the refrigerator there is provided a base 10 preferably of octagonal form and from this base there extends upward a series of T-bars 11, there being one of these bars at each corner of the base. These corner bars are connected at their tops by means of angle irons 12 and other angle irons 13 connect the bars 11 at points above their lower ends. Still other angle irons 14 connect the corner bars at points adjacent to but spaced from their upper ends. Resting on the angle irons 12 is a plate 16 which forms the ceiling of the casing.

Extending upward and inward from the upper ends of the bars 11 are roof purlins 17 which are connected at their upper ends by a cap ring 18 of angle irons secured to a cap plate 19. Covering the roof are plates 20 which are suitably secured to the members 17 and these plates are surmounted by a finial 21 of ornamental character.

The walls of this refrigerator are constructed of glass plates and in order to hold these plates in position a series of Z-bars 22 are secured to the angle irons 12 on the outer sides thereof. On the outside of the bars 11 and substantially opposite the angles 13 are angle irons 23. Covering the outer face of each of the bars 11 is a strip of elastic packing 24 which extends between the angle iron 23 and the Z-bar 22 secured to the respective bars 11. Resting against the packings 24 of adjacent bars 11 is a sheet of plate glass 25



around the peripheral portion of the outer face of which extends a strip of elastic packing 26. Against this packing 26 rests a sheet of glass 27, preferably clear double thick glass of the ordinary kind. This sheet of glass is also provided around its peripheral portion with a strip of elastic packing 28 and against this latter rests an outer sheet of plate glass 29. Covering the vertical joint between adjacent sheets 29 is a trim molding 30 of any preferred form and this molding is held in place at the bottom by a stud bolt 31 which passes through the molding and extends into the respective bar 11 opposite which the joint lies. At the top the trim molding is secured by means of a set screw passing through the Z-bar and bearing against the molding as indicated at 32. This construction is carried entirely around the refrigerator with the exception of those panels which are used to obtain access to the interior of the display chamber and ice box and these panels are provided with suitable doors, the construction of which is similar to the panels of the casing and is not deemed necessary to be herein shown. It is to be observed from the foregoing that the walls of the device just described are so arranged as to afford double dead air spaces between the inner and outer sheets of plate glass in each panel, thereby preventing the glass sweating and becoming cloudy. The panels can be readily removed making the refrigerator easy to clean.

Below the glass construction just described the bars 11 are connected by angle irons 33, between which and the angle irons 23 are metal plates 34. The outside of the base portion of the refrigerator is covered with other metallic plates 35 which lie in spaced relation to the plates 34 so that the base is provided with an air space between its inner and outer walls.

Resting on the angle irons 14 is a plate 36 which is provided with a central opening 37 surrounded by openings 38 spaced from the central opening and each surrounded by an upstanding flange 39. On this plate is secured a series of channel bars 40 with their flanges turned downward, the bars thus constituting spaced ribs. The space between the plates 16 and 36 constitutes the ice box or chamber and this chamber is drained by means of suitable pipes 41 extending downward behind certain of the bars 11.

Resting on the angle irons 13 is a plate 42 provided with a central opening 43 and a multiplicity of small draft perforations 44.

Through the opening 37 passes a top bearing 45 provided with a flange 46, the upper side of which bears against the under side of the plate 36 and this flange is suitably secured to the plate. Upon the base 10 is fixed a foot-step bearing 47 which is pro-

vided with an air passage extending through its base portion as indicated at 48. Carried in the bearings 45 and 47 is a hollow or tubular shaft 49 which has its upper end terminating close to the top of the ice chamber and its lower end in communication with the passage 48. Carried on this shaft just below the upper bearing is a collar 50 which is fixed upon the shaft by any suitable means as by the set screw 51. Between the collar 50 and upper bearing there is provided a set of balls as indicated at 52. On the lower end of the shaft just above the foot-step bearing is a collar 53 fixed to the shaft by a set screw 54 and between this collar and the foot-step bearing is a second series of balls 55. On the collar 53 is carried a bevel gear 56 which meshes with a similar gear 57 carried on a shaft 58 connected to a motor 59. By means of this arrangement the rotation of the motor will in turn rotate the shaft.

Upon the shaft 49 in the space between the plates 36 and 42, which is preferably termed the storage chamber, are certain display stands all of similar construction. Each of these stands or racks consists of a central hub 60 provided at its lower end with an outwardly extending flange 61. This hub fits slidably on the hollow shaft and in order to hold it from movement around the shaft after it has been adjusted to the desired place on the shaft the hub has a keyway cut therein for the reception of a key 62 which can be forced inward to grip tightly against the shaft by means of the set screws 63. In order to prevent the key from slipping longitudinally out of the keyway the ends of said key are provided with lugs 64 fitting in suitable recesses formed in the hub. Extending outward from the hub are vertical wings 65, these wings being offset at the bottom to receive the webs of ribs 66 preferably constructed of T-bars so fitted to the wings that the webs of the respective rib will be flush with the face of the wing to which it is attached. To the flush faces of the ribs and wings are bolted partitions of plate glass as indicated at 67. The outer ends of the ribs are connected together by means of an annular angle iron rim 68 so arranged that one flange of the angle iron extends under the ribs while the other extends vertically upward. The ribs, hub and rim thus provide a series of segmental spaces and in each of these spaces a shelf 69 is fitted in such manner that it is loosely held on the flanges of the adjacent ribs so that it can readily be lifted out. The purpose of this arrangement is to permit the exhibition of tall vases of flowers as shown in Fig 1 where one of the shelves of the upper stand is shown as having been removed for this purpose. Each of the shelf sections is provided with a multiplicity of air openings 70 for



the purpose of permitting free circulation of air about the flowers held on the different stands.

In operation the heated air rises up from the chamber in the base through the central shaft to the ice chamber. There the air is cooled and passes down through the openings 38 where it circulates around the flowers, passing both around the edges of the plates or shelves and also through the openings 70. From the flower chamber it passes into the base through the openings 44 and thence upward as before.

There has thus been provided a simple and efficient device of the kind described and for the purpose specified.

It is obvious that many minor changes may be made in the form and proportions of this invention without departing from the material principles thereof. It is not therefore desired to confine the invention to the exact form herein shown and described, but it is wished to include all such as properly come within the scope of the appended claims.

Having thus described the invention, what is claimed as new, is:—

1. In a refrigerator of the class described, an ice chamber having a floor provided with a centrally disposed opening and a plurality of openings surrounding the central opening, a display chamber below the ice chamber, a hollow shaft passing through said central opening and forming a vertical air circulation conduit connecting top and bottom of the refrigerator, and one or more perforated display shelves carried by said shaft.

2. In a refrigerator of the class described, an ice chamber having a floor provided with a centrally disposed opening and a plurality of openings surrounding the central opening, a display chamber below the ice chamber and provided with a perforated floor having a centrally disposed opening alined with the central opening in the floor of the ice chamber, a hollow shaft passing through said central openings, the upper end of the shaft terminating adjacent the top of the ice chamber and the bottom end of the shaft being open near the bottom of the refrigerator, and a display rack mounted on said shaft.

3. In a refrigerator of the class described, an ice chamber having a floor provided with a centrally disposed opening and a plurality of openings surrounding the central opening, a display chamber below the ice chamber and provided with a perforated floor having a centrally disposed opening alined with the opening in the center of the ice chamber floor, a hollow shaft open at both ends which passes through said central openings, the upper end of the shaft terminating adjacent the top of the ice chamber, and a display rack mounted on said shaft and having a floor provided with a multiplicity of spaced perforations, said rack floor extend-

ing beneath the openings in the floor of the ice chamber.

4. In a refrigerator of the class described, an ice chamber having a floor provided with a centrally disposed opening and a plurality of openings surrounding the central opening, a display chamber below the ice chamber, a hollow shaft, open at both ends to form an air circulation conduit, which passes through said central opening with its upper end terminating adjacent the top of the ice chamber, a display rack mounted on said shaft, and means to rotate the shaft.

5. In a refrigerator of the class described, an ice chamber having a floor provided with a centrally disposed opening and a plurality of openings surrounding the central opening, a display chamber below the ice chamber and provided with a perforated floor having a centrally disposed opening alined with the central opening in the floor of the ice chamber, a hollow shaft passing through said central opening, the upper end of the shaft terminating adjacent the top of the ice chamber, a display rack mounted on said shaft, and means below the floor of the display chamber to rotate the shaft.

6. In a refrigerator of the class described, an ice chamber having a floor provided with a centrally disposed opening and a plurality of openings surrounding the central opening, upturned flanges surrounding said latter openings, a display chamber below the ice chamber, a hollow shaft passing through said central opening and forming a vertical air circulation passage connecting top and bottom of the refrigerator, the upper end of the shaft terminating adjacent the top of the ice chamber, a display rack mounted on said shaft and having a floor provided with a multiplicity of spaced perforations, said rack floor extending beneath the openings in the floor of the ice chamber, bearings for the shaft, means to rotate said shaft and cause the rack floor to pass beneath the successive openings in the floor of the ice chamber, and means to draw off the water from the ice chamber.

7. In a display refrigerator having transparent walls, a vertical shaft which is hollow and open at top and bottom to form an air circulation conduit, a number of display racks mounted one above another on said shaft, each rack having removable floor sections, and means to hold said racks against rotative movement relative to one another about said shaft, substantially as described.

8. In a display refrigerator having transparent walls, an ice chamber at the top, a vertical shaft in the refrigerator, a series of superposed perforated shelves connected to said shaft, and a bottom for the ice chamber having air circulation openings therein, and means to provide a return air circulation



tion passage from the bottom of the refrigerator to said ice chamber through said shaft.

9. A display refrigerator comprising  
5 transparent side walls, means to provide a circulation of chilled air lengthwise there-through, a vertical hollow shaft disposed centrally therein and serving as an air circulation conduit between the top and bot-  
10 tom of the refrigerator, means to rotate said shaft, a series of superposed shelves mounted on and rotatable with said shaft and having sectional perforated bottoms which are freely removable, the bottom sections of said  
15 shelves being alike in size and disposed in vertical alinement, and means to hold said shelves against relative movement to dis-aline their bottom sections, substantially as described.

20 10. In a refrigerator for the display of flowers and like articles, the combination with a refrigerating compartment, an ice compartment and means to induce a circulation of chilled air through said refrigerat-

ing compartment, of display means therein 25 comprising a rotatable shaft, a series of shelves fixed to said shaft and revoluble therewith and each of which comprises a rack and a series of similar detachable floor  
30 sections which have perforations for the circulation of air, said floor sections of the several shelves being arranged in rows in vertical alinement about said shaft, and means  
35 to detachably support said bottom sections in said shelves, the periphery of the shelves leaving an unobstructed view of the articles thereon and said whole rotatable shelf arrangement being disposed opposite trans-  
40 parent sections in the refrigerator casing, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROSWELL L. TILGHMAN.

Witnesses:

NOMIE WELSH,  
ANNIE L. PEACE.