

No. 733,186.

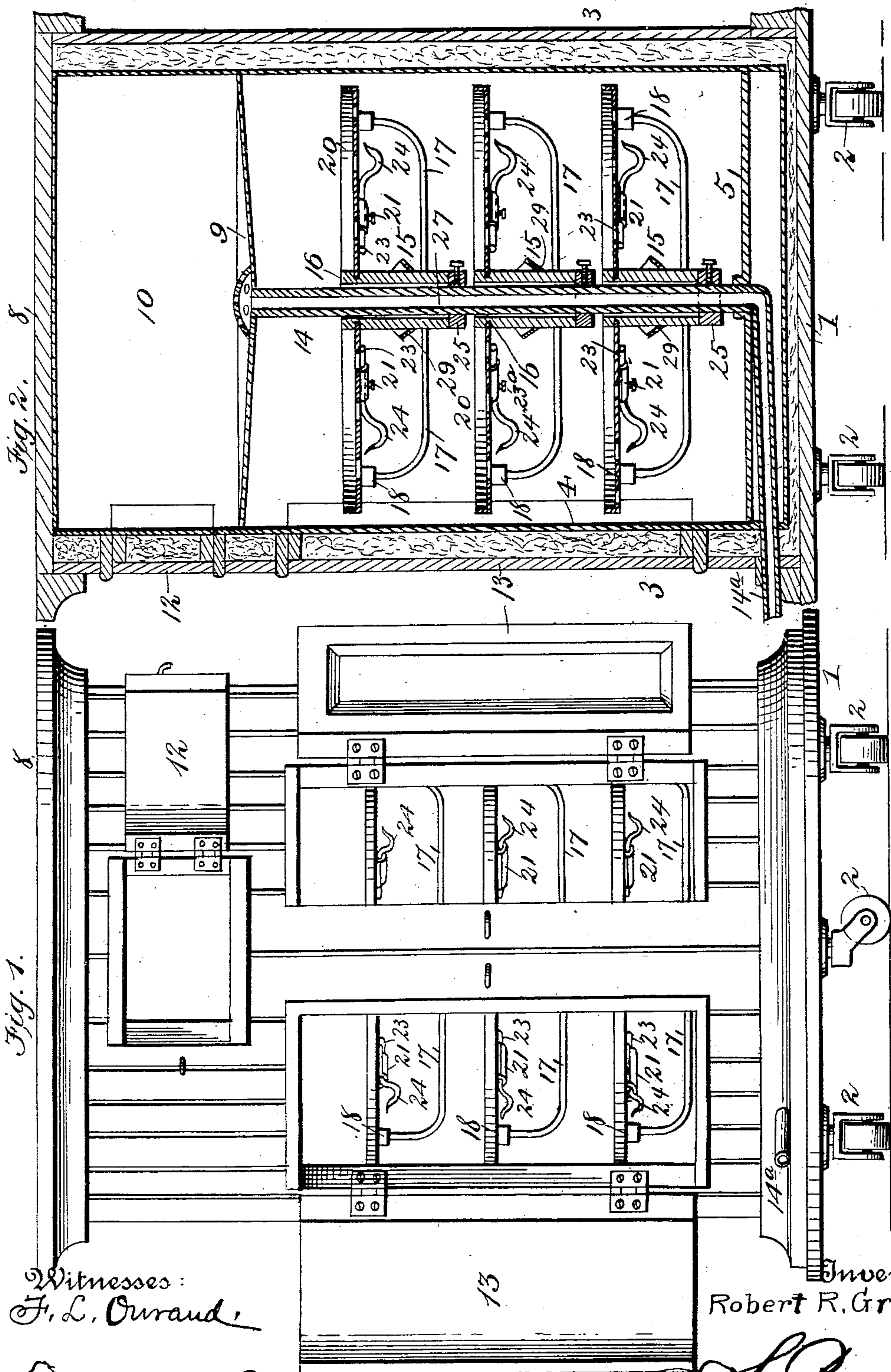
PATENTED JULY 7, 1903.

R. R. GRAF.  
REFRIGERATOR.

APPLICATION FILED MAR. 2, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:  
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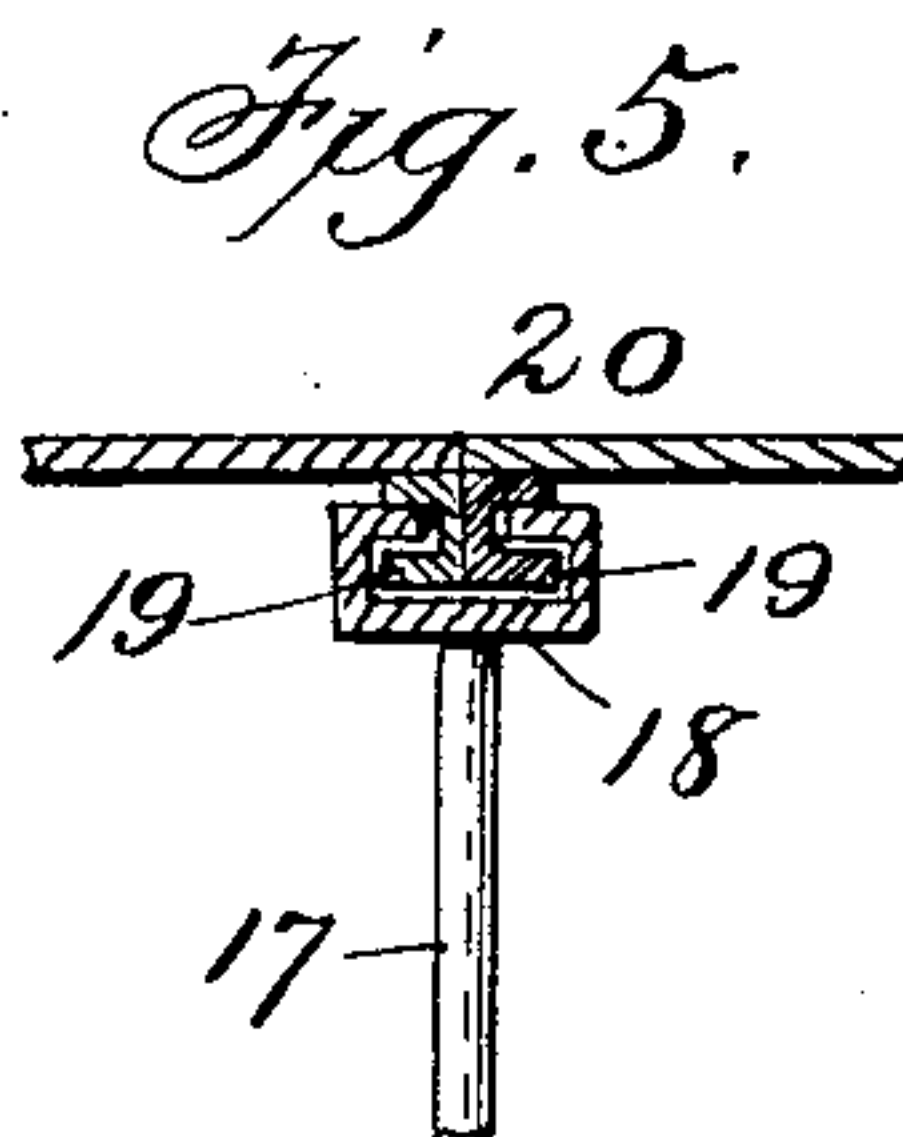
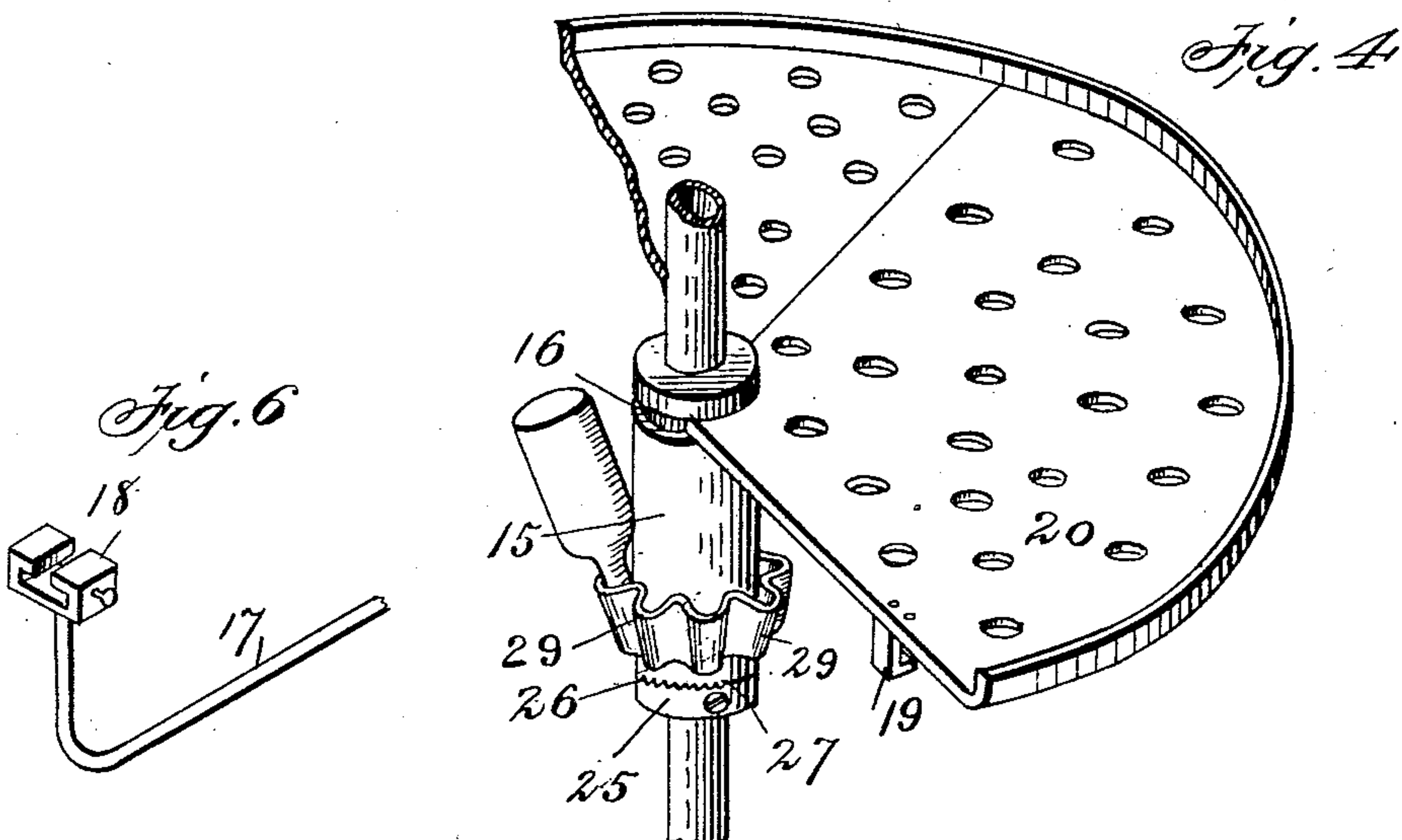
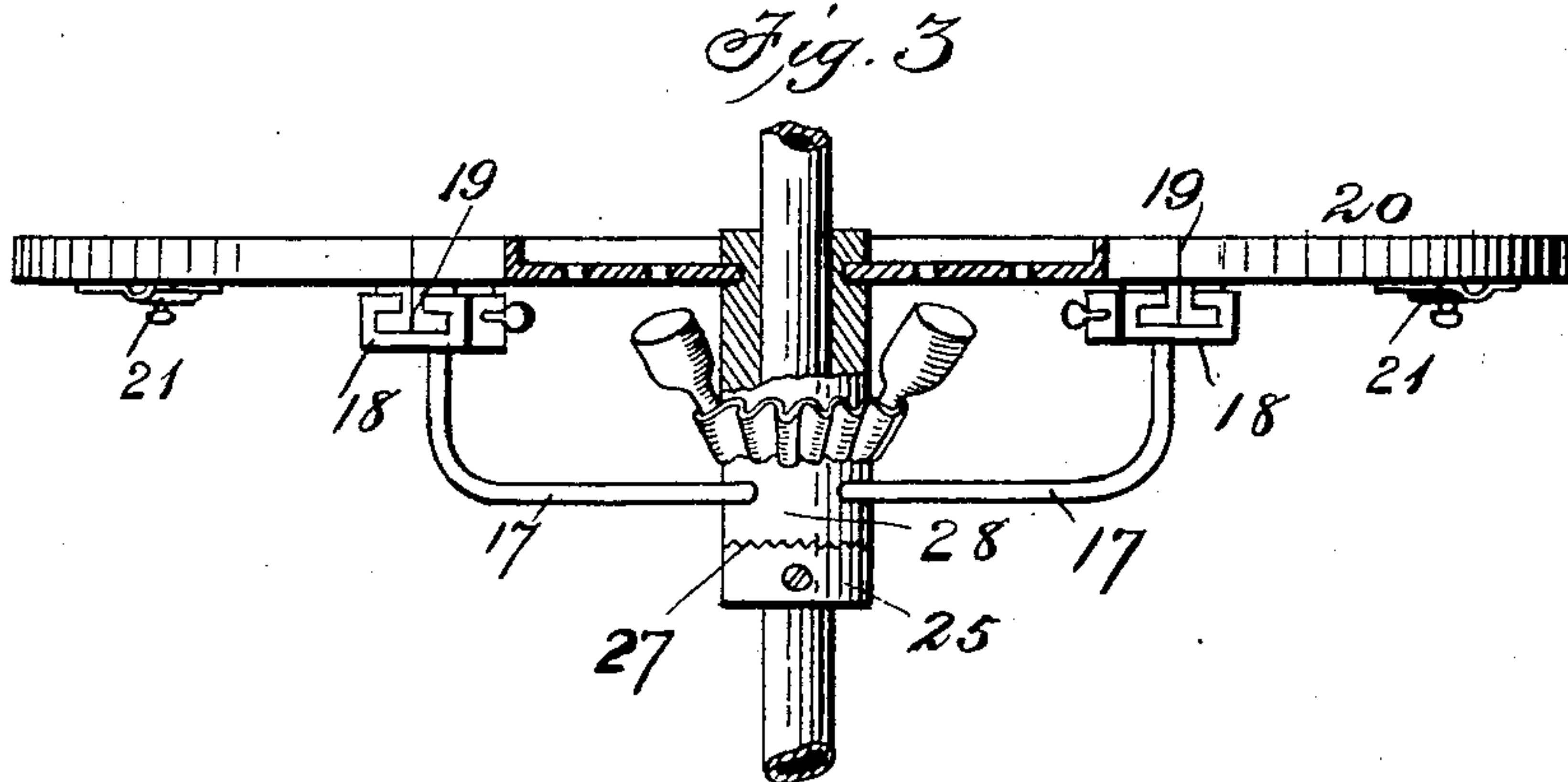
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REFRIGERATOR.

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NO MODEL.

3 SHEETS—SHEET 2.



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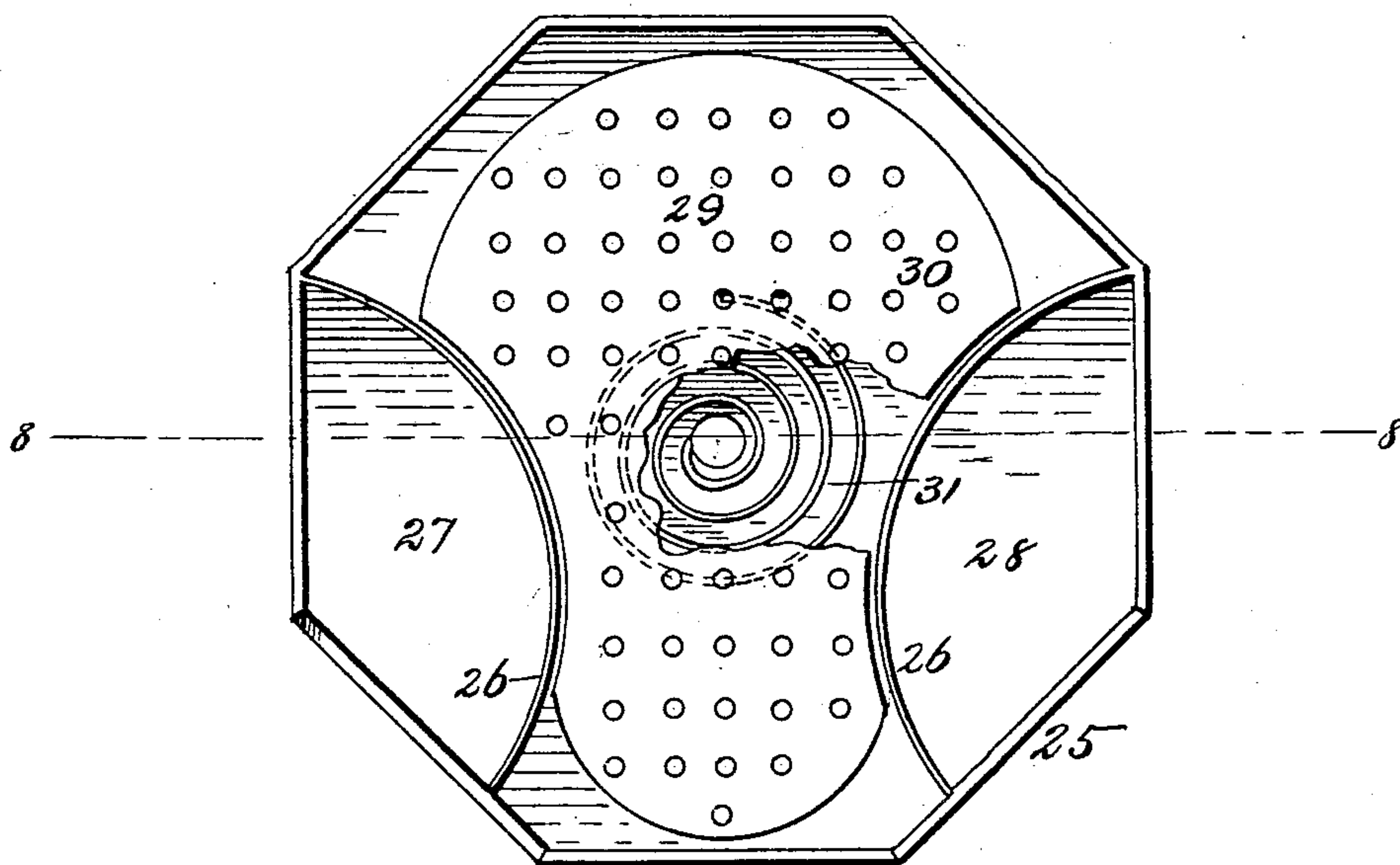
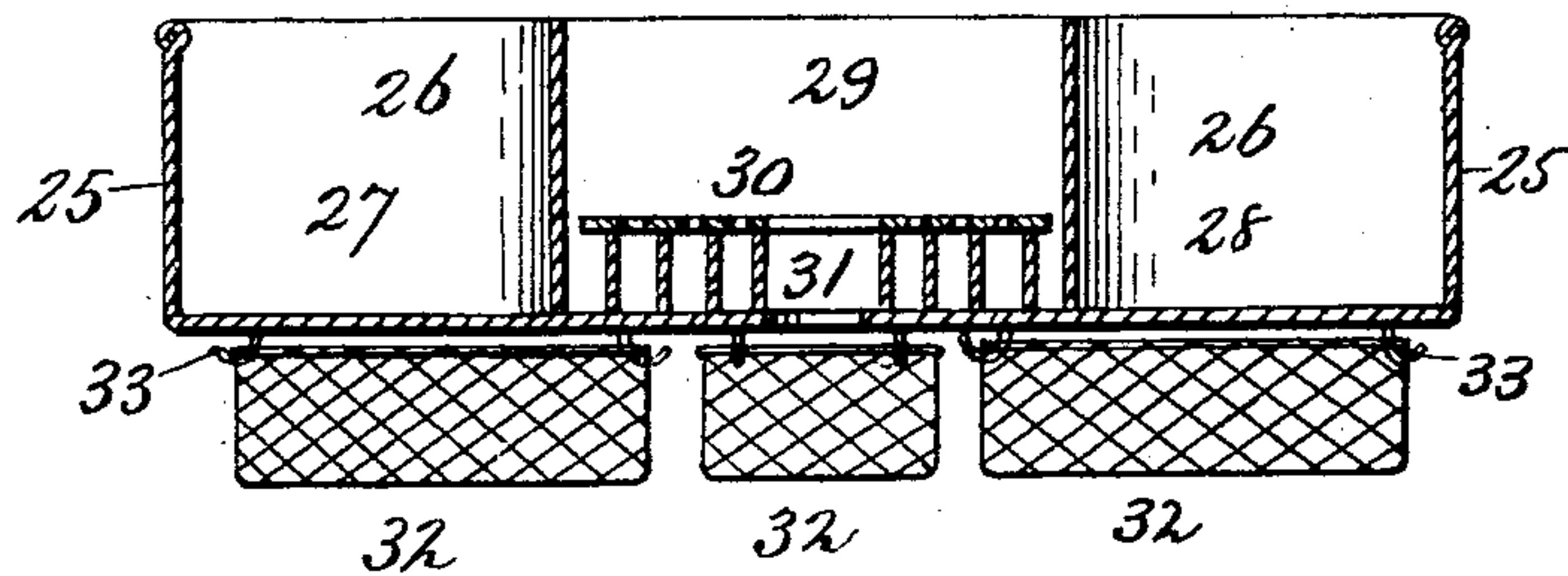
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R. R. GRAF.  
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APPLICATION FILED MAR. 2, 1903.

NO MODEL.

3 SHEETS—SHEET 3.

*Fig. 7.**Fig. 8.*

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# UNITED STATES PATENT OFFICE.

ROBERT RUDOLPH GRAF, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO JACOB GOMPRECHT, OF BALTIMORE, MARYLAND.

## REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 733,186, dated July 7, 1903.

Application filed March 2, 1903. Serial No. 145,812. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT RUDOLPH GRAF, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented new and useful Improvements in Refrigerators, of which the following is a specification.

My invention relates to ice-boxes or refrigerators, and is principally designed for the use of butchers, grocers, provision-dealers, and others who keep a comparatively large stock of perishable food on hand; and its object is to provide an improved construction of the same whereby the articles contained in the refrigerator or ice-box can be readily removed when desired without the necessity of any one entering the refrigerator, which is the usual custom and which frequently causes serious illness, especially when the weather is very warm.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is an elevation of a refrigerator or ice-box constructed in accordance with my invention. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a detail sectional view showing the central shaft and one of the sectional shelves. Fig. 4 is a detail perspective view of one of the sectional shelves and the shaft. Fig. 5 is a detail sectional view showing the lugs on the shelves and the brackets with which they engage. Fig. 6 is a detail perspective view of one of the radial supporting-arms secured to said shaft. Fig. 7 is a plan view of a modified form of shelf. Fig. 8 is a section of the same on the line 8 8, Fig. 7.

In the said drawings the reference-numeral 1 designates the base of the refrigerator or ice-box mounted upon casters 2. This base is circular in form, and secured thereto is a cylindrical wall or casing 3, provided with an inner cylindrical wall or lining concentric therewith, the space therebetween being packed with any suitable non-conducting material, as usual.

The numeral 5 designates a false bottom located above the base.

The numeral 8 designates the top, and 9 a

horizontal partition below the same, forming an ice chamber or receptacle 10, provided with a hinged door 12. The space between said partition and the false bottom forms the food-compartment, which is provided with one or more hinged doors 13. Located centrally in said compartment is a vertical tubular shaft 14, communicating at the upper end with the ice-chamber and the lower end passing through the false bottom and provided with a radial or lateral draw-off pipe 14<sup>a</sup>, which passes through the casing 1. Loosely mounted on said shaft, so as to rotate thereon, are a number of hubs 15, provided with peripheral grooves 16, and secured to said hubs are a number of radial arms 17, provided at the outer ends with rectangular brackets 18, which engage L-shaped lugs 19, secured to the shelves or trays 20. These shelves or trays are made in sections, and the inner ends engage with the grooves 16, and they may be readily removed when desired for cleaning or other purposes. On the under side of said sectional shelves are guide-brackets 21, with which engage adjustable bars 23, provided with meat-hooks 24. The bars 23 are held in place by means of set-screws 23<sup>a</sup>, by loosening which the bars may be pulled in or pushed out, as required. These bars and hooks may be moved in and out to facilitate the handling of the meat and also for displaying the meat, thus avoiding the necessity of removing it from the hooks.

The numeral 25 designates adjustable collars secured to the shaft for supporting the hubs 15 and are provided at the upper ends with teeth 26, adapted to engage with corresponding teeth 27 at the lower ends of the hubs 15. The object of such construction is to prevent too free rotation of the shelves, so that they will not accidentally turn when placing heavy articles on the same.

Mounted on the hubs 15 are bottle-racks 28, formed of upwardly-inclined or flaring rims crimped to form ridges and grooves 29, which serve as pockets to accommodate the necks of bottles.

In use the chamber is filled with ice and the articles of food placed on the shelves and meat hung upon the hooks 24. To remove



the articles, one or both of the doors 13 are opened and the shelves or trays rotated until the articles desired are brought within reach.

By the above construction the labor of storing and removing goods is much less than in the usual manner of entering the refrigerator.

In Figs. 7 and 8 a modified form of shelf is shown, which shelf is octagonal and is surrounded by a rim 25. Curved partitions 26 divide the shelf into three compartments 27, 28, and 29, the first two of which serve as receptacles for food to be kept cool, while the compartment 29 forms a receptacle for ice, and with that end in view a perforated plate 30 is placed thereon and rests on a spiral partition 31. The partition 31 keeps the plate 30 clear of the shelf and prevents the accumulation of water and also provides a receptacle for a powder, such as potash or salt, which is placed between the coils. Wire baskets 32 are also provided and are suspended on hooks 33, seated in the under side of the shelf.

I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

Having thus fully described my invention, what I claim is—

1. In a refrigerator, the combination with the base, the cylindrical casing, the ice and food compartments, and the vertical tubular

shaft provided at its lower end with a draw-off or outlet pipe, of the hubs on said shafts, the radial arms secured thereto, having brackets at the outer ends, the sectional shelves or trays, and L-shaped lugs secured thereto engaging with said brackets, substantially as described.

2. In a refrigerator, the combination of a casing, a vertical shaft mounted in said casing, rotatable hubs mounted on said shaft, radially-extending upturned arms bearing brackets, shelves formed in sector-shaped sections having guide-lugs thereon which engage said brackets, and means for clamping said guide-lugs, substantially as described.

3. In a refrigerator, the combination of a vertical shaft, a hub mounted to rotate on said shaft and having a peripheral groove therein, a shelf formed of sector-shaped sections, which fit said groove and bear guide-lugs, radial arms mounted in said hub and bearing grooved brackets which are engaged by said lugs, and means for clamping said lugs, substantially as described.

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

ROBERT RUDOLPH GRAF.

Witnesses:

FRANK G. RADELFINGER,  
BENNETT S. JONES.