

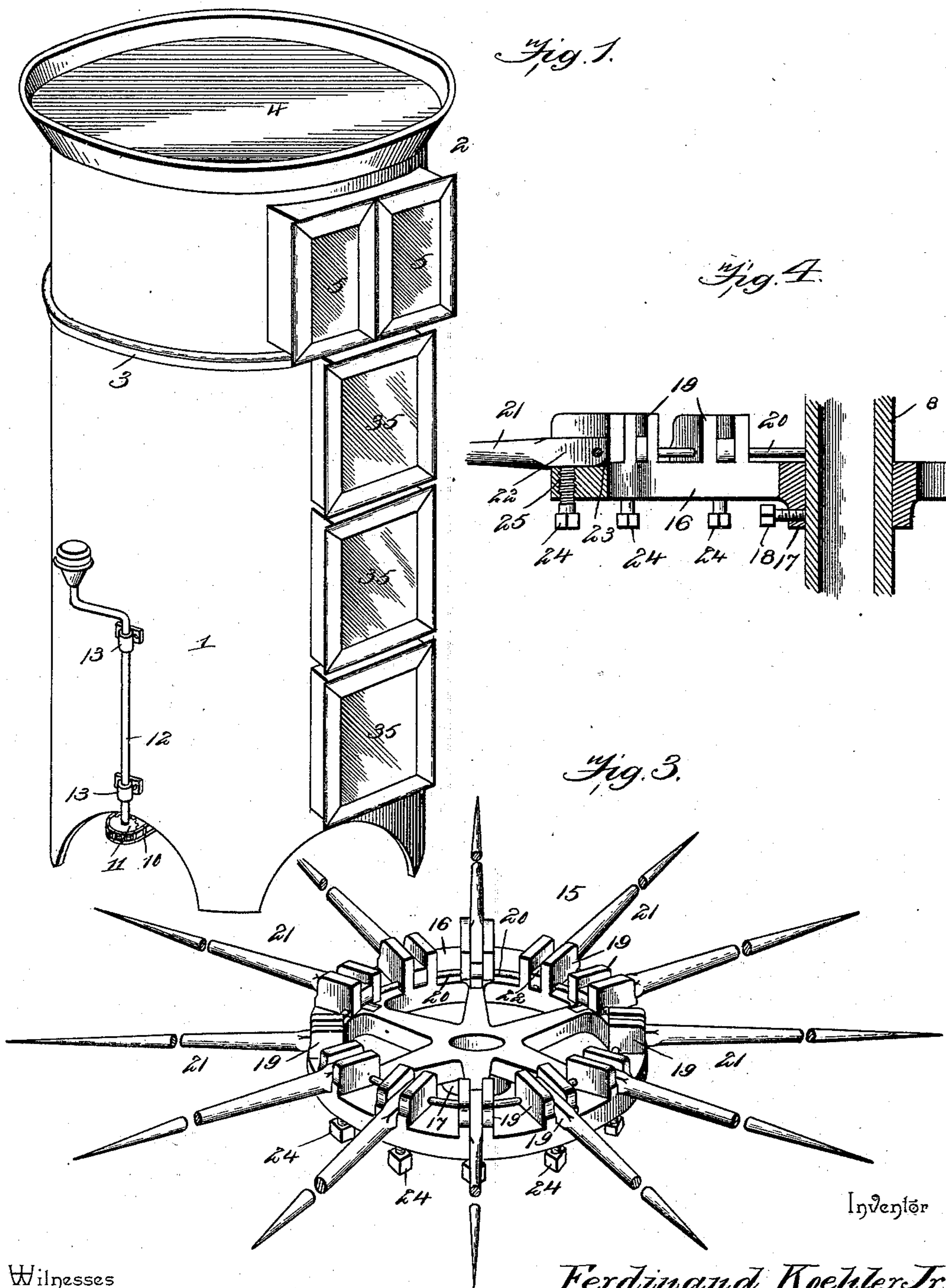
(No Model.)

2 Sheets—Sheet 1.

F. KOEHLER, Jr.  
REFRIGERATOR.

No. 525,021.

Patented Aug. 28, 1894.



Inventor

Witnesses

*John C. Shaw.*  
*W. S. Duval.*

By *his* Attorneys.

*Ferdinand Koehler, Jr.*

*C. A. Snow & Co.*

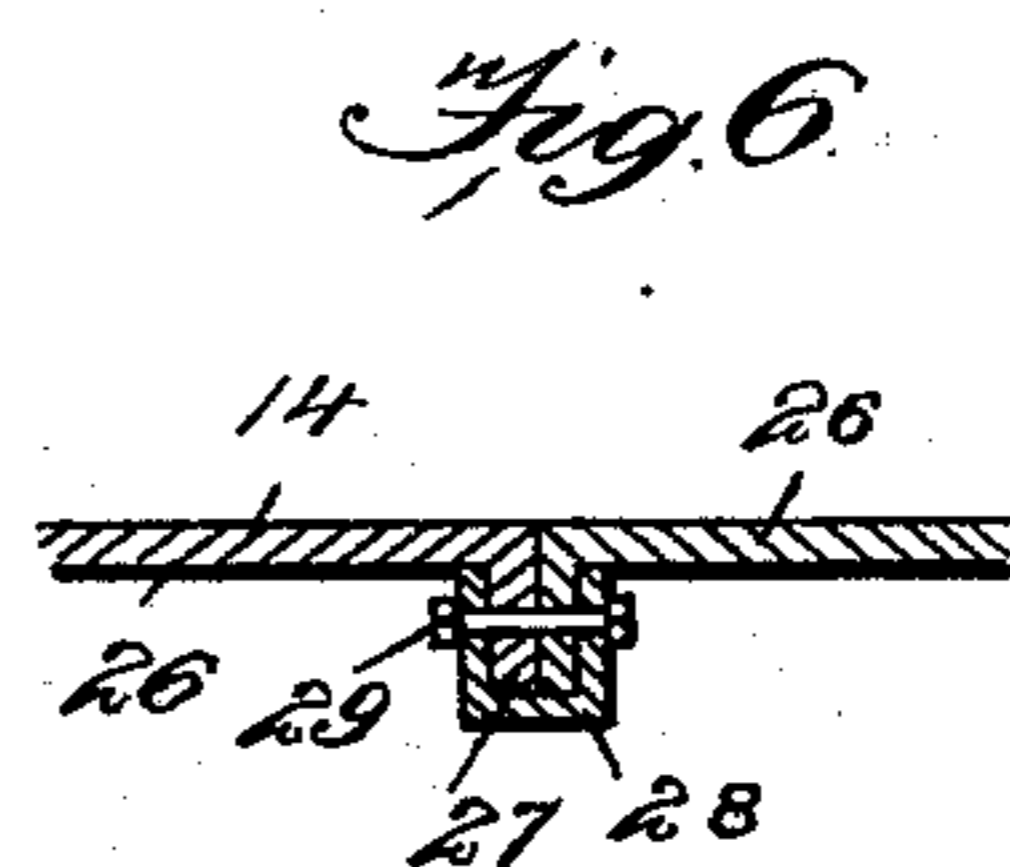
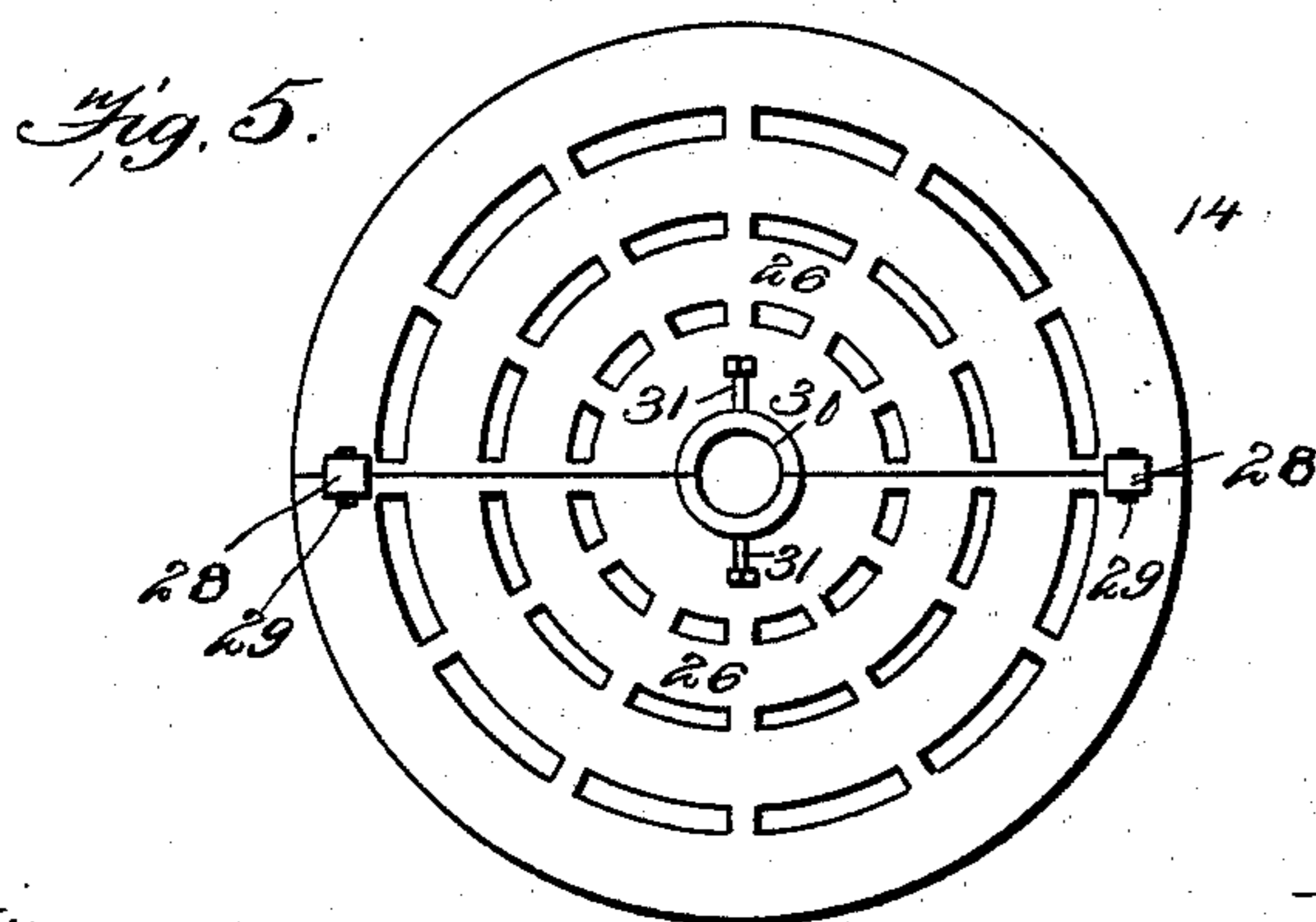
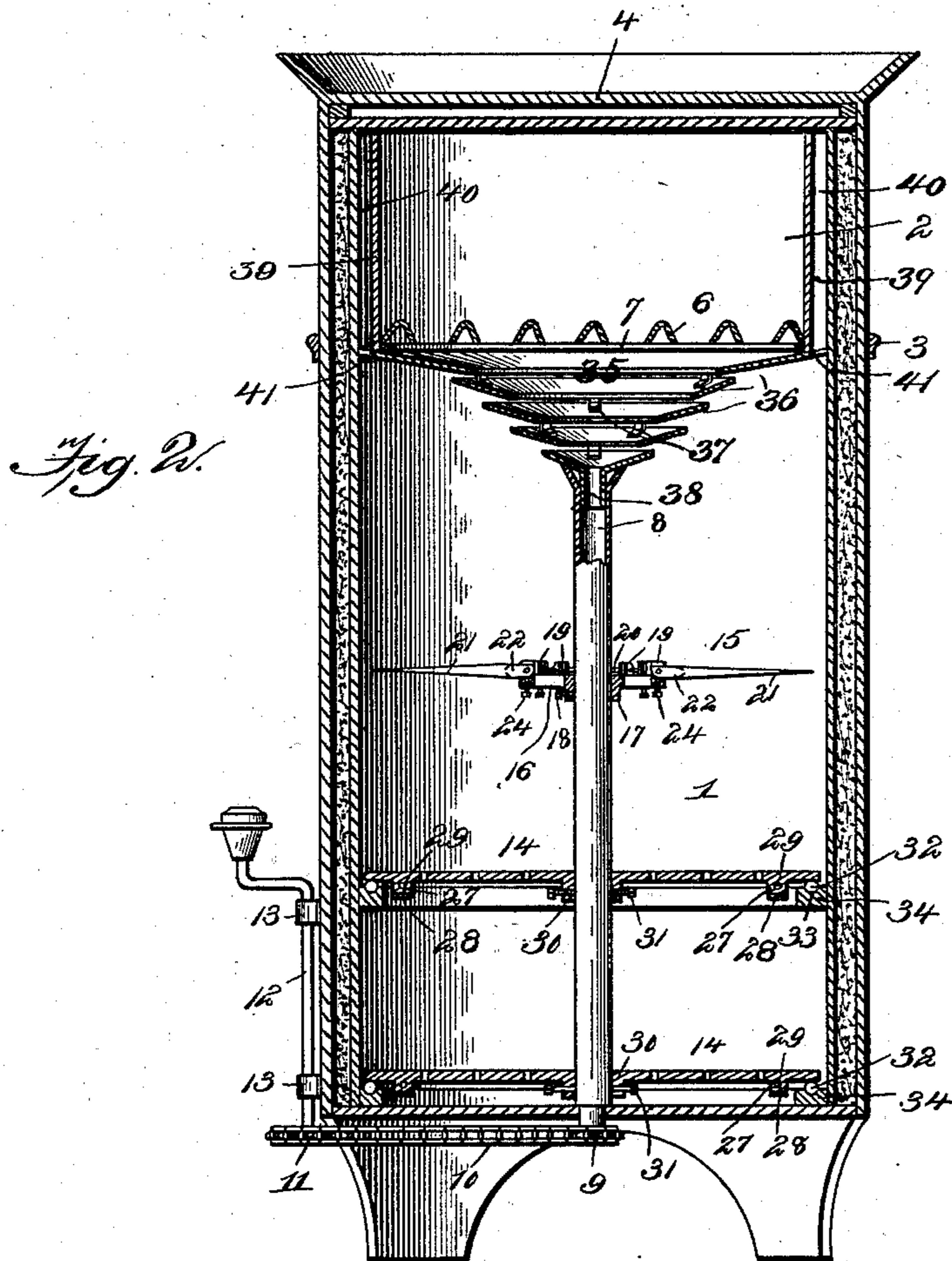
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# UNITED STATES PATENT OFFICE.

FERDINAND KOEHLER, JR., OF CAIRO, ILLINOIS.

## REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 525,021, dated August 28, 1894.

Application filed December 14, 1893. Serial No. 493,661. (No model.)

*To all whom it may concern:*

Be it known that I, FERDINAND KOEHLER, Jr., a citizen of the United States, residing at Cairo, in the county of Alexander and State of Illinois, have invented a new and useful Refrigerator, of which the following is a specification.

My invention relates to improvements in refrigerators, the objects in view being to provide a refrigerator that is accessible to all parts for cleaning and other purposes, and which is designed for use by butchers, families, and others.

Various other objects and advantages of the invention will appear in the following description and the novel features thereof will be particularly pointed in the claims.

Referring to the drawings,—Figure 1 is a perspective view of a refrigerator embodying my invention. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a detail in perspective of the meat-rack. Fig. 4 is a transverse sectional view thereof. Fig. 5 is a bottom plan view of one of the lower racks. Fig. 6 is a sectional view thereof.

Like numerals of reference indicate like parts in all the figures of the drawings.

In the practice of my invention I preferably construct the refrigerator cylindrical, though if desired the same may be rectangular in cross-section, and is constructed upon dimensions in accordance with the use for which the refrigerator is designed.

The refrigerator preferably comprises two sections, a lower refrigerating section 1 and an upper ice section 2, the line of division being at the point 3. Each section comprises double walls, the same being lined with mineral-wool or other non-conducting packing, the interiors of the sections being metal-lined, as is usual. The upper section is provided with a top 4, and at its front side with a pair of doors 5 suitably hinged and provided with proper fastenings. An ice-rack 6 is in the bottom of the upper section, and to this ice-chamber above the rack the doors 5 give access.

The center of the ice-rack is provided with a drip-opening 7, and the same communicates with the upper end of a hollow pipe 8 whose lower end is journaled in the bottom of the lower section and projects below the same. At its lower end the pipe is preferably pro-

vided with a sprocket-wheel 9, and a chain 10 connects said wheel with a larger sprocket-wheel 11 fixed upon the lower end of a crank-shaft 12 which is journaled in vertically opposite bearings 13 located upon the exterior of the refrigerator.

It will be obvious that by a partial rotation of the shaft 12 the hollow shaft or drip-pipe 8 will be given a complete rotation. I may omit this operating mechanism if desired and rotate the shaft 8 together with the shelves it carries by hand.

It is my intention to provide the drip-pipe 8 with shelves in accordance with the use to which the refrigerator is to be put, as for instance if it is designed to be used by a saloon and intended merely for bottles, a solid or a cast-metal open shelf 14 would be employed; if it be intended for use by a retail butcher I would provide a shelf similar to that indicated by the numeral 15. These, however, as before stated, will depend entirely upon the use for which the refrigerator is designed.

Upon the outer shaft or pipe 8 I secure in the present instance adjacent to the upper end thereof a circular metal head 16, the same having a central flanged hub 17 through which a binding-screw 18 is passed, the inner end of the latter impinging upon the hollow shaft or drip-pipe 8. At intervals upon the upper side of the head 16 I locate pairs of perforated bearing-lugs 19, and extend through the entire series of lugs a circular pintle-wire 20. Between each pair of lugs upon the pintle-wire I pivot a spike 21, whose outer free end is pointed so as to receive steaks, chops, and other cut meats. The inner end of each spike is flattened as at 22, while the heel thereof is rounded as at 23, so that the spike may be swung to a vertical position beyond which it cannot pass or may be lowered to a horizontal position, it being regulated in the latter by means of the adjustable screw 24 which is located under each of the spikes 21 in threaded perforations 25 formed in the metal head.

The shelves 14 below the meat-shelf herein described are preferably cast-metal and formed in halves or sections 26, each section or half having a half round opening at its center for embracing the shaft 8 and being provided with lugs as at 27 to receive U-

shaped binding-clamps 28 through which and the lugs screws 29 are passed. These shelves have a central flanged hub 30, and binding-screws 31 or pins pass therethrough and impinge against the hollow shaft or drip-pipe 8. These shelves are preferably supported at their peripheries by means of a series of balls 32 which are located in an annular groove 33 formed in annular rest-rings 34 supported by the internal wall of the refrigerator.

Opposite the several shelves the casing 1 is provided with a vertical series of hinged doors 35 by means of which access may be had to any one shelf without exposing the contents of the others. The lower shelves are intended to support bottles, butter, lard, and other heavier articles, while the upper shelf containing the spikes is intended to support cut meats, game, &c., as will be obvious.

It will be seen that through the medium of the crank-shaft 12, the shelves may be revolved so as to expose any portions of the same opposite the door-openings; and, furthermore, that the entire refrigerator may be cleansed thoroughly by opening all the doors to give access to the cleaner. The manner of mounting the shelves insures an easy operation of the same regardless of the weight of the articles contained thereon.

In practice it will be observed that the water from the ice will pass through the opening 7 in the ice-chamber, and into the upper end of the hollow shaft or drip-pipe 8, coursing down the latter and finally being emptied into any receptacle that may be placed under the lower end of the pipe.

Various means may be devised for securing the pipe 8 rotatably to the lower end of the ice-tank or shelf, but I prefer to interpose between the upper end of the pipe and the shelf, a flaring ventilator and drip device 35. This drip device consists of a series of concentrically arranged flaring rings 36, which are decreased in their respective diameters toward the lower end of the series, and are nested together and spaced apart by means of intermediate metal straps 37.

It will be seen that there occurs between each two rings an annular air-space to allow the cold air to freely distribute itself into the space below the ice shelf and that the series of rings, as a whole, constitutes a drip-receptacle which communicates with the upper end of the pipe 8. The lowermost ring terminates in a hollow bearing-stud 38 which receives the upper end of the pipe 8. I prefer also to surmount the ice-shelf or pan 6, with an annular wall 39, thus producing a space between it and the wall of the casing. This space I have indicated as 40 and its bottom has perforations 41.

It will be observed that the drip from the ice will course down the receptacle 35, and finally into the pipe 8, from which it is discharged in a manner before stated. The tendency of the cold air being to fall or seek the lower end of the casing, will cause said air to

pass through the annular openings intermediate the rings and become diffused. The warm air, on the contrary, has a tendency to rise and will pass through the openings 41 into the annular space 40 and will be prevented from actual contact with the ice contained in the chamber, by the interposition of the wall 39, heretofore mentioned. The water of condensation caused by the meeting of the hot and cold currents will flow from the wall 39 into the drip receptacle in the same manner as the drippings from the ice.

I do not limit my invention to the precise details of construction herein shown and described, but hold that I may vary the same to any degree and extent within the knowledge of the skilled mechanic.

Having described my invention, what I claim is—

1. In a refrigerator, the combination of an upright chamber, an ice rack supported within the chamber, a drip receptacle arranged under the ice rack and comprising a spaced series of connected flaring annular rings regularly decreasing in size and the lowermost of which is provided with a hollow bearing stud 38, a hollow shaft arranged to have its upper end journaled on said hollow bearing stud, the shelves mounted on said shaft, and gearing connected with the lower end of said shaft, substantially as set forth.

2. In a refrigerator of the class described, the combination with the vertical rotary shaft; of a sectional perforated shelf mounted on said shaft and comprising separate duplicate sections or halves provided at their meeting edges with abutting perforated lugs, U-shaped binding clamps 28 embracing said lugs, and screws or bolts arranged to pass through said clamps and abutting lugs, said sectional shelf being further provided at the center with a flanged hub to embrace the shaft, binding screws arranged to pass through said hub and impinge against the shaft, and a ball bearing support for the edge of said shaft substantially as set forth.

3. In a refrigerator, the combination with a shaft a metal head located thereon and provided upon its upper side with a series of pairs of perforated lugs, a pintle-wire arranged in the lugs, spikes arranged on the wire and having their inner ends squared and their lower corners rounded, and a series of set-screws threaded in perforations in the heads under the spikes, substantially as specified.

4. In a refrigerator of the class described, the combination with a cylindrical casing, of the ice shelf arranged within the top part of said casing and provided with a central drip opening, and with a series of ventilating openings near its edge, an inner annular wall surmounting the ice shelf to inclose an annular chamber communicating at the bottom with the openings near the edge of the ice shelf, a funnel shaped drip receptacle arranged beneath the ice shelf, and a vertical hollow shaft

arranged to communicate at its upper end with the bottom of said drip receptacle, substantially as set forth.

5 5. In a refrigerator, the combination with the superimposed ice-chamber, and the lower drip-pipe arranged in line with the opening in the chamber, of the intermediate drip-receptacle, the same consisting of a series of annular flaring rings connected to each other  
10 and producing intermediate spaces, the lower ring terminating in a hollow bearing-stud, for receiving in a rotatable manner the upper end of the aforesaid pipe, substantially as specified.

15 6. In a refrigerator, the body having a resting 34 supported by the internal wall of the body and provided with an annular groove 33, the series of balls seated therein, the vertical shaft, the shelf 14 formed in halves or

sections and resting at their peripheries on 20 the balls, means for clamping the sections of the shelf together, and devices for clamping the shelf to the vertical shaft, substantially as specified.

7. In a refrigerator, the combination with 25 a shaft, a metal head arranged thereon and having a series of pairs of lugs, spikes pivoted between the lugs, and screws bearing against the spikes for the purpose, substantially as specified. 30

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FERDINAND KOEHLER, JR.

Witnesses:

JOHN C. CROWLEY,  
M. J. SHEEHAN.