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2 SHEETS—SHEET 2.

Fig. 3.

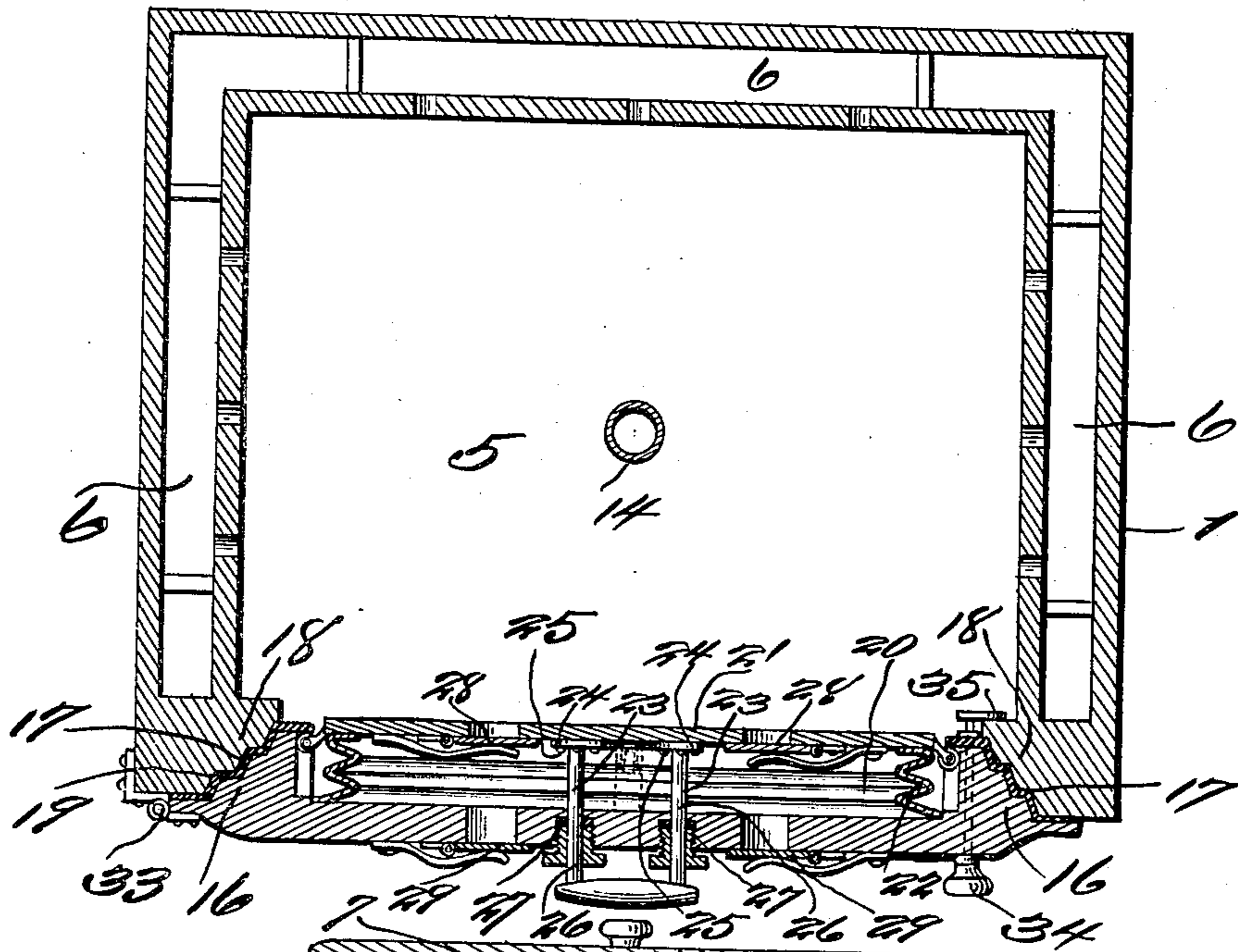
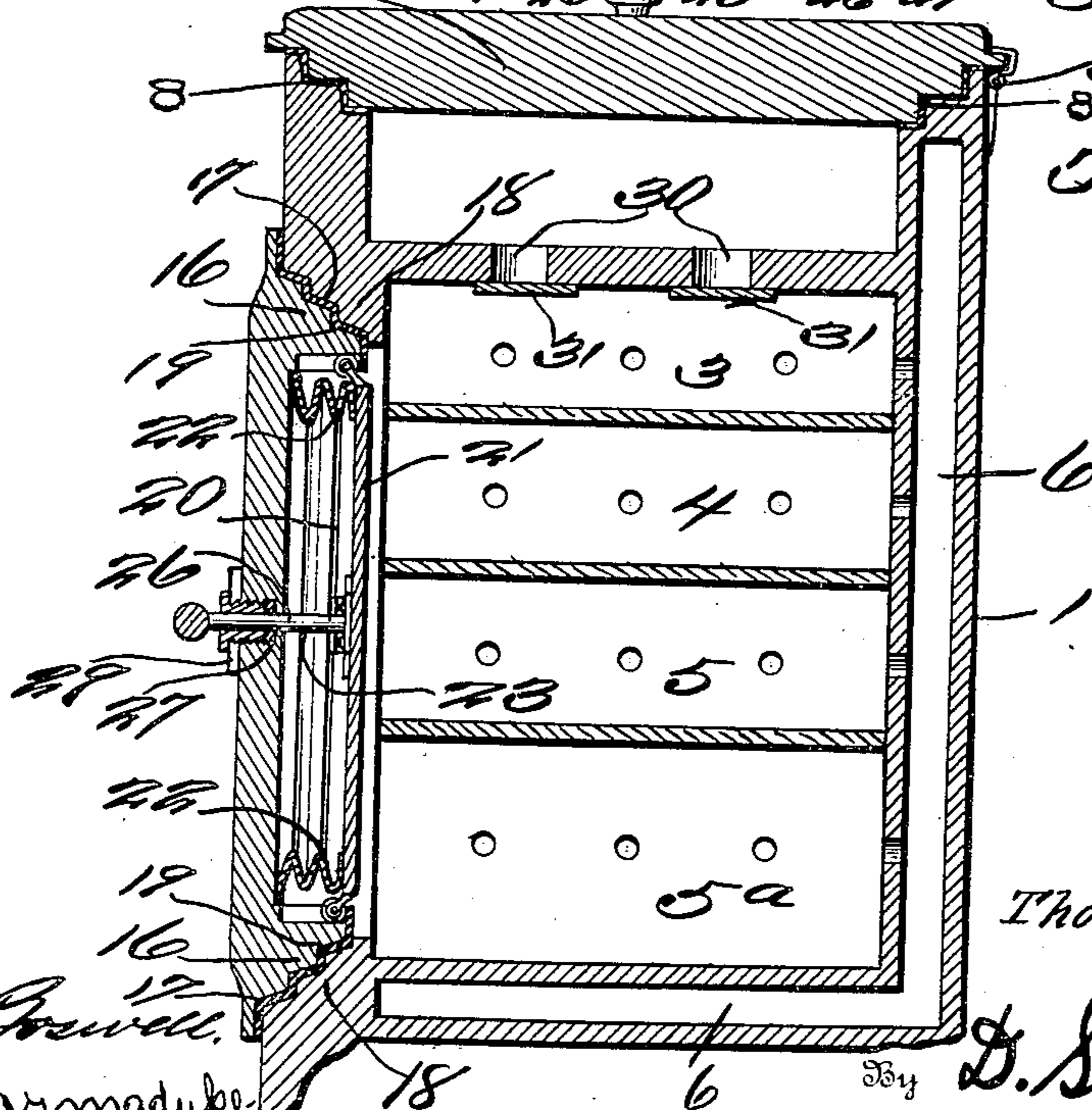


Fig. 4.



Witnesses

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# UNITED STATES PATENT OFFICE.

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REFRIGERATOR.

945,542.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, THOMAS J. JACKSON, a citizen of the United States, residing at Grand Junction, in the county of Mesa and State of Colorado, have invented a new and useful Refrigerator; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention pertains to a new and useful refrigerator, and the invention in its broadest aspect has for its main object to provide a device of this design in which the ice chamber or compartment may be relieved of the dry cold air, by causing a vacuum therein, through the medium of a novel constructed bellows, carried by the door or closure of the refrigerator. This bellows is operated at intervals, for extracting the air from the said ice chamber by hand.

Another object of the invention is to produce a novel structure for packing the peripheral edges of the main door or closure of the refrigerator, and to further produce an air space about the ice chamber or compartment and the compartments in which victuals of all descriptions are contained.

The invention has for a further object the provision of means, whereby the air, when extracted from the ice chamber or compartment, is discharged through the action of the bellows to the outside atmosphere.

This invention comprises further objects and combinations of elements which will be hereinafter more fully described, shown in the accompanying drawings, and the novel features thereof will be pointed out by the appended claims.

The features and elements and the arrangement thereof, for accomplishing the objects of this device or apparatus, may be changed and varied, that is to say, in an actual reduction to practice, the understanding, however, is that the changes and variations accruing from said reduction to practice are comprehended by the appended claims.

To obtain a full and correct understanding of the details of construction, combinations of features, elements and advantages, reference is to be had to the hereinafter set

forth description and the accompanying drawings in connection therewith, wherein—

Figure 1 is a perspective view of a refrigerator embodying the features of the invention. Fig. 2 is a sectional view vertically through the refrigerator, showing the ice chamber or compartment, and the novel structure of the bellows. Fig. 3 is a horizontal sectional view, further disclosing the structure of the bellows and the manner of packing the main door or closure of the refrigerator. Fig. 4 is a sectional view through the refrigerator vertically and at right angles to that shown in Fig. 2, in order to further disclose the air space thereof. Fig. 5 is a detailed view illustrating a portion of the structure of the bellows.

Referring to the annexed illustrations, 1 designates the casing of a refrigerator, in the interior of which an ice chamber or compartment 2 is formed, and in which compartments 3, 4 and 5 are also provided, for containing victuals and other articles.

About the several compartments, and also the ice chamber, and upon the interior of the casing, an air space 6 is formed, for the circulation of dry cold air from the ice chamber, and which is drawn therefrom by means of the bellows. The ice chamber is provided with a cover or closure 7 having suitable packing 8 about its periphery, in order to afford an air-tight inclosure. Located upon the interior of the ice chamber or compartment is one or more receptacles 9 for holding the ice, and an additional receptacle 10 in which water or other fluid may be contained. The water or other fluid may be drawn from the receptacle through a suitable pipe 12, and the flow of the water or other fluid may be controlled by means of a suitable spigot 13, as clearly shown. Leading from the ice chamber or compartment and vertically through the refrigerator is a conduit or pipe 14, for draining the water, caused by the melting of the ice, to the drain pan or receptacle 15, located below the refrigerator.

The main door or closure of the refrigerator is provided with an annular flange 16, adjacent to which and to the extended portion of the door or closure, that is to say, beyond the said flange, a suitable packing material 17 is provided, so as to form an air-tight compartment or compartments upon

the interior, and to obtain the proper vacuum therein, that is to say, when the bellows is manipulated. That portion of the casing with which the packing of the closure or door engages is provided with an inwardly extended bead or flange 18, which is stepped in order to fit the stepped portion 19 of the said packing, thereby further insuring an air-tight casing.

The bellows 20 of the closure or door is located within the annular flange 16, and consists of a plate 21 and fabric or other material 22. This fabric or other material, in practice, should be of such a character as to prevent the escape of air, that is to say, when the plate 21 is manipulated. This plate 21 is provided with a U-shaped member 23, which forms a handle, by which it may be operated. The inner extremities of this U-shaped member are bent at right angles, as at 24, and are secured to the inner face of the plate 21, by means of suitable bolts, screws or other means 25. The arms 26 of the U-shaped member operate through packing glands 27 of the said door or closure, in order to further insure the escape of the air. The plate 21 is provided with a pair of check valves 28, which open as the plate is forced inward toward the center of the refrigerator, and which close on the outward movement of the plate, thereby causing a vacuum upon the interior of the ice chamber or compartment and the interior of the refrigerator.

The door or closure is provided with a pair of check valves 29 which close as the plate 21 moves inward toward the center of the refrigerator, and which open as the plate moves outward, in order that the air may escape to the outside atmosphere. By manually operating the plate 21 backward and forward, these valves are properly opened and closed. The bottom of the ice chamber or compartment is provided with openings 30, which are closed or opened by means of the check valves 31, which close as the plate 21 moves inward toward the center of the refrigerator and open upon the reverse movement of the said plate. The said bottom of the ice chamber or compartment is so formed as to support the ice, when not received by the receptacles, and in such a manner as to prevent the drippings from the ice from passing the check valves 31, as they open or close. The cover or closure of the ice chamber or compartment is hinged to the casing in the usual manner, as shown at

32, the weight of the cover or closure being sufficient to insure an air-tight joint between it and the packing, thereby obviating the use of locking means. The main door or closure is hinged to the casing, as indicated at 33, and is provided with the usual button 34, for causing a transverse bar 35 to securely hold the door or closure locked, thereby causing an air-tight joint between the packing thereof.

From the foregoing, the essential features, elements and the operation of the device, together with the simplicity thereof, will be clearly apparent.

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

1. In a refrigerator, a casing having a plurality of compartments, an ice chamber or compartment, said refrigerator having an air space about said compartments, a hinged member having an annular flange and provided with a bellows member operative within the annular flange, and check valves to coöperate with the bellows operated member.

2. In a refrigerator, a casing having a plurality of compartments, an ice chamber or compartment, said refrigerator having an air space about said compartments, a hinged member having an annular flange and provided with a manually operated bellows member operable within the annular flange, check valves to coöperate with the bellows member, and packing means between the hinged member and the casing.

3. In a refrigerator, a casing having a plurality of compartments, an ice chamber or compartment, a hinged member having a manually operated bellows member, said bellows member having a U-shaped member extended through the hinged member to provide a handle for the manipulation of said bellows member.

4. A refrigerator having an ice chamber and provided with an annular flanged hinged member having a bellows member, said bellows member having a U-shaped member extending through the hinged member to provide a handle for the manipulation of said bellows member.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS J. JACKSON.

Witnesses:

RACHEL JONES,  
STEPHEN F. KARNES.