Dec. 9, 1924. 1,518,668

J. D. MITCHELL

REFRIGERATOR

Filed Dec. 15, 1923 2 Sheets-Sheet 1

Fig. 1.

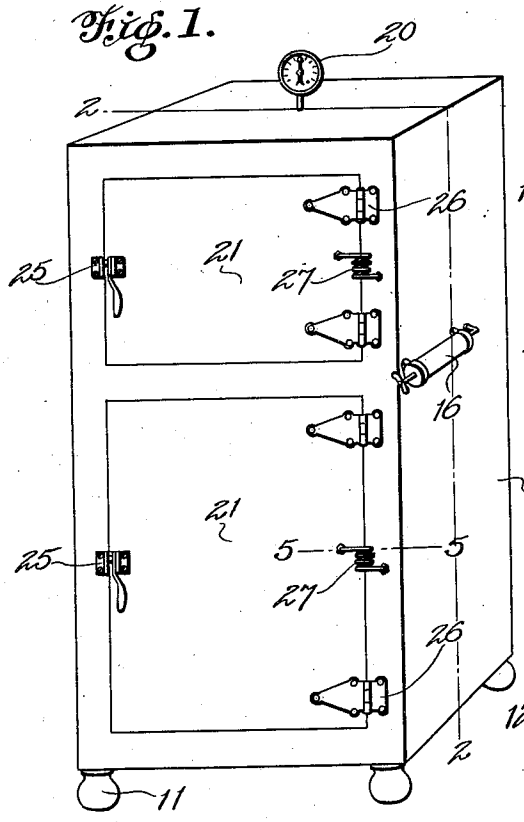


Fig. 2.

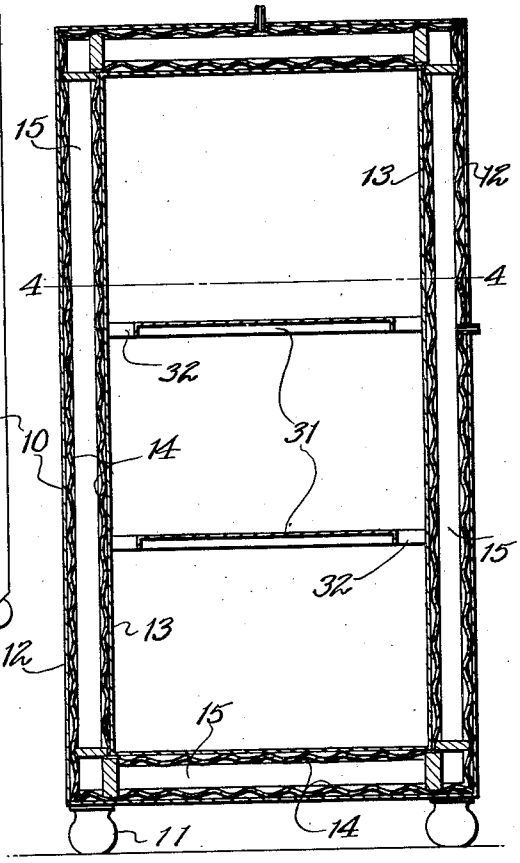
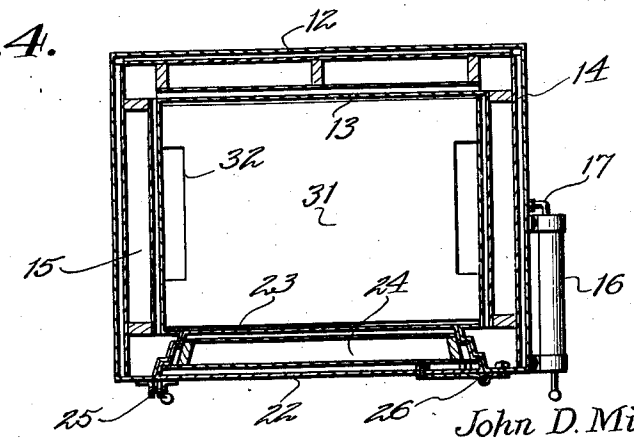


Fig. 4.



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Fig. 3.

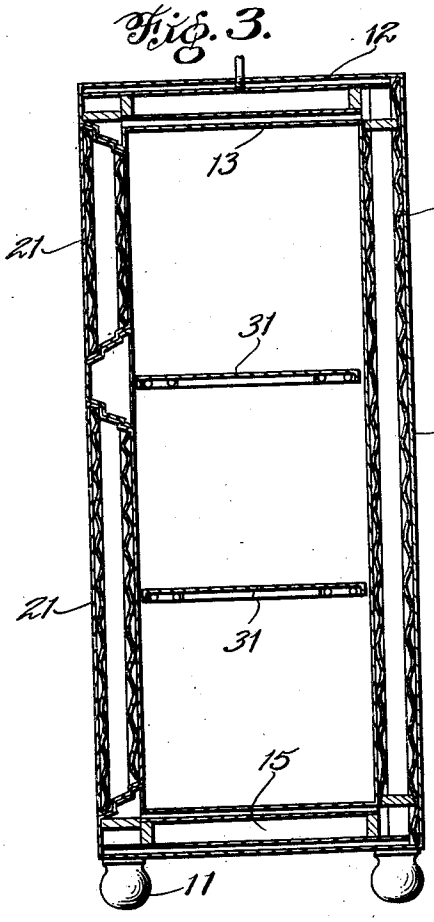


Fig. 6.

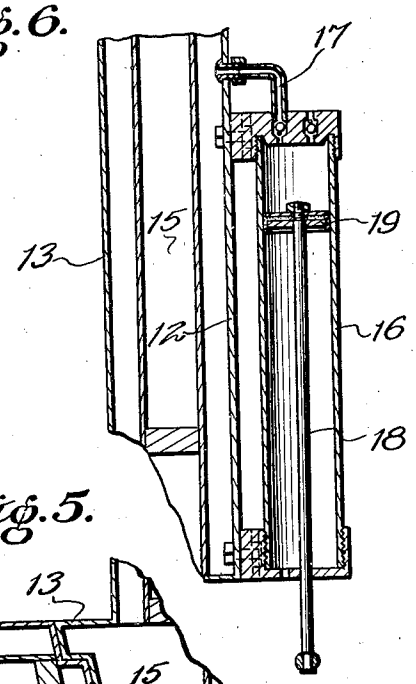


Fig. 5.

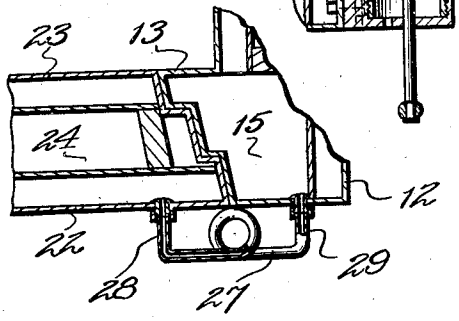


Fig. 7.

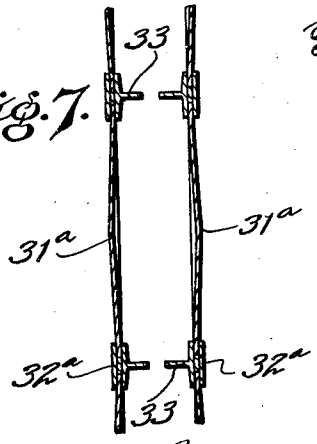
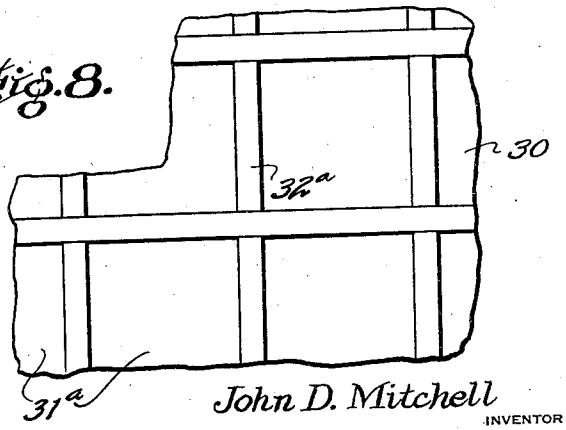


Fig. 8.



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Patented Dec. 9, 1924.

1,518,668

UNITED STATES PATENT OFFICE.

JOHN D. MITCHELL, OF NEW ALBANY, INDIANA.

REFRIGERATOR.

Application filed December 15, 1923. Serial No. 680,973.

To all whom it may concern:

Be it known that I, JOHN D. MITCHELL, a citizen of the United States, residing at New Albany, in the county of Floyd and State of Indiana, have invented new and useful Improvements in Refrigerators, of which the following is a specification.

This invention relates to refrigerators and has for its object the provision of a refrigerator having double walls separated by a vacuum space whereby to obtain the maximum heat insulating qualities to insure thorough refrigeration.

An important object is the provision of a refrigerator of this character in which the doors are likewise of hollow construction so as to have a vacuum formed therein, a peculiar means being provided for establishing communication between the interior of the doors and the interior of the wall of the body so that the air may be exhausted from all at the same time.

Another object is the provision of a device of this character which will be simple and inexpensive in manufacture, highly efficient in use, durable in service and a general improvement in the art.

With the above and other objects and advantages in view the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of the device,

Figure 2 is a vertical section taken in a plane parallel with the doors,

Figure 3 is a vertical section taken through the doors or from front to back of the device,

Figure 4 is a horizontal section on the line 4—4 of Figure 2,

Figure 5 is an enlarged detail section on the line 5—5 of Figure 1 showing the communicating means between the doors and the body,

Figure 6 is a detail view of the pump,

Figure 7 is an enlarged detail section through the double wall of a refrigerator showing a modified spacing means for the walls,

Figure 8 is a detail elevation of a portion of a wall constructed in accordance with Figure 7.

Referring more particularly to the drawings I have shown the refrigerator as comprising an upright rectangular body or casing designated broadly by the numeral 10, which casing may have suitable supporting feet 11 or the like for spacing it above the floor or other support upon which it is placed. This casing or body is shown as formed of outer and inner walls 12 and 13 respectively which are lined with corrugated iron indicated at 14. The spacing of the walls is continuous throughout the sides, top, back and bottom of the body so as to define a continuous chamber 15 from which the air is exhausted by means of a suction pump 16 suitably mounted on one side of the casing and having a pipe 17 leading through the outer wall into the space 15. The detailed construction of the pump may be such as preferred though it is here illustrated as having a piston rod 18 carrying a handle for effecting operation of the piston 19, suitable automatic valves being provided as shown. Mounted on the top or at some suitable place is a gauge 20 for indicating the degree of vacuum.

The front of the body or casing may be provided with any desired number of openings, two being indicated in the present instance and these openings are intended to be closed by doors 21 which are of hollow construction and which include outer and inner walls 22 and 23 spaced apart to define a chamber 24. These doors may be equipped with any suitable latch mechanism 25 such as that illustrated and they are supported from the body or casing by means of hinges 26.

The essential feature of the invention lies in the peculiar means for establishing communication between the hollow doors and the hollow wall of the body. This means consists of a helical flexible tube 27 shaped to resemble a helical spring and having one arm or end 28 extending through the hinged edge of the door into the interior thereof, and having its other end or arm 29 extending through the closed forward edge of the hollow wall of the body. When the doors are opened, the members 27 must yield in exactly the same manner as a spring and for this reason they are constructed of resilient material.

Any desired number of shelves or parti-

tions 31 may be provided in the casing or body and at their ends these shelves and partitions are formed with openings 32 so as to permit communication throughout the whole interior of the body.

In the case of large refrigerators the use of the above described corrugated iron for spacing the walls might not be sufficiently strong to withstand the strains produced by the exhaustion of the air from the space between the walls. In such an instance it is preferable to make use of the bracing construction shown in Figures 7 and 8. Referring to these figures, it will be seen that I have shown the inner wall 30 as formed as a sheet 31ª of iron of suitable gage secured to intersecting bars 32ª arranged against both sides thereof, the sheet 31 being convexed between the intersecting strips and braced by angle irons 33 of T shape. In other respects the construction would be the same as above described.

While I have shown and described the preferred embodiment of my invention it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention I claim:

1. A refrigerator comprising a body formed of spaced walls defining a continuous space extending throughout the sides, top, back and bottom, the front being formed with openings, doors hinged upon the front for closing said openings, the doors being of hollow construction, and means establishing communication between the interiors of the doors and the hollow wall of the body, said means comprising helical coils of tubular formation having their ends extending into the doors and the hollow wall of the body.

2. In a refrigerator, a body construction consisting of outer and inner walls spaced apart, the inner wall consisting of intersecting strips located at both sides of a metal sheet, the sheet being convexed outwardly between the strips, and bracing wires T-shaped in cross section secured to the sheet and certain of the strips.

In testimony whereof I affix my signature.

JOHN D. MITCHELL.