Nov. 26, 1935. M. J. GOULOOZE 2,021,914

REFRIGERATOR LATCH

Original Filed Dec. 10, 1930 3 Sheets-Sheet 1

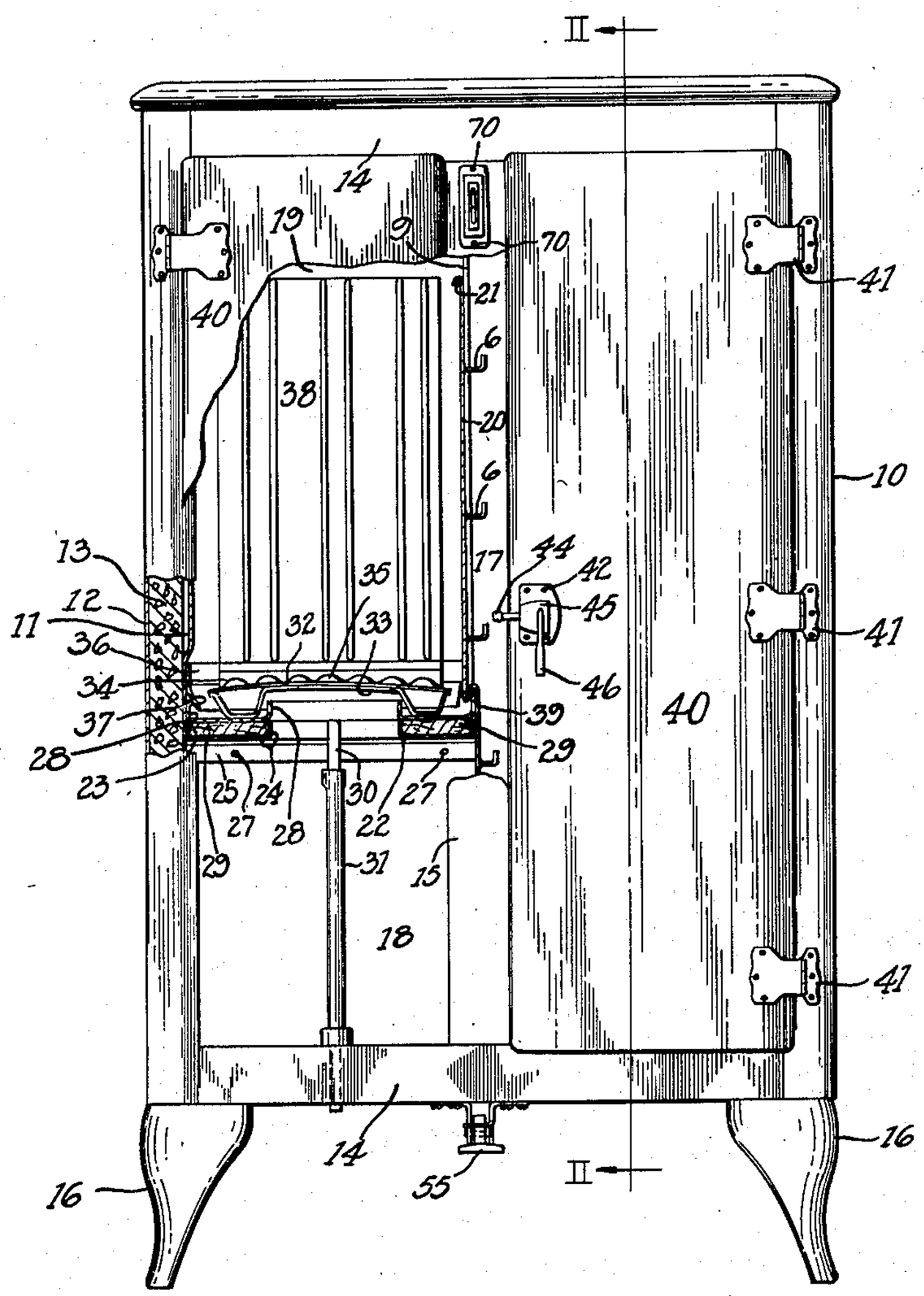

Fig 1

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Original Filed Dec. 10, 1930 3 Sheets-Sheet 2

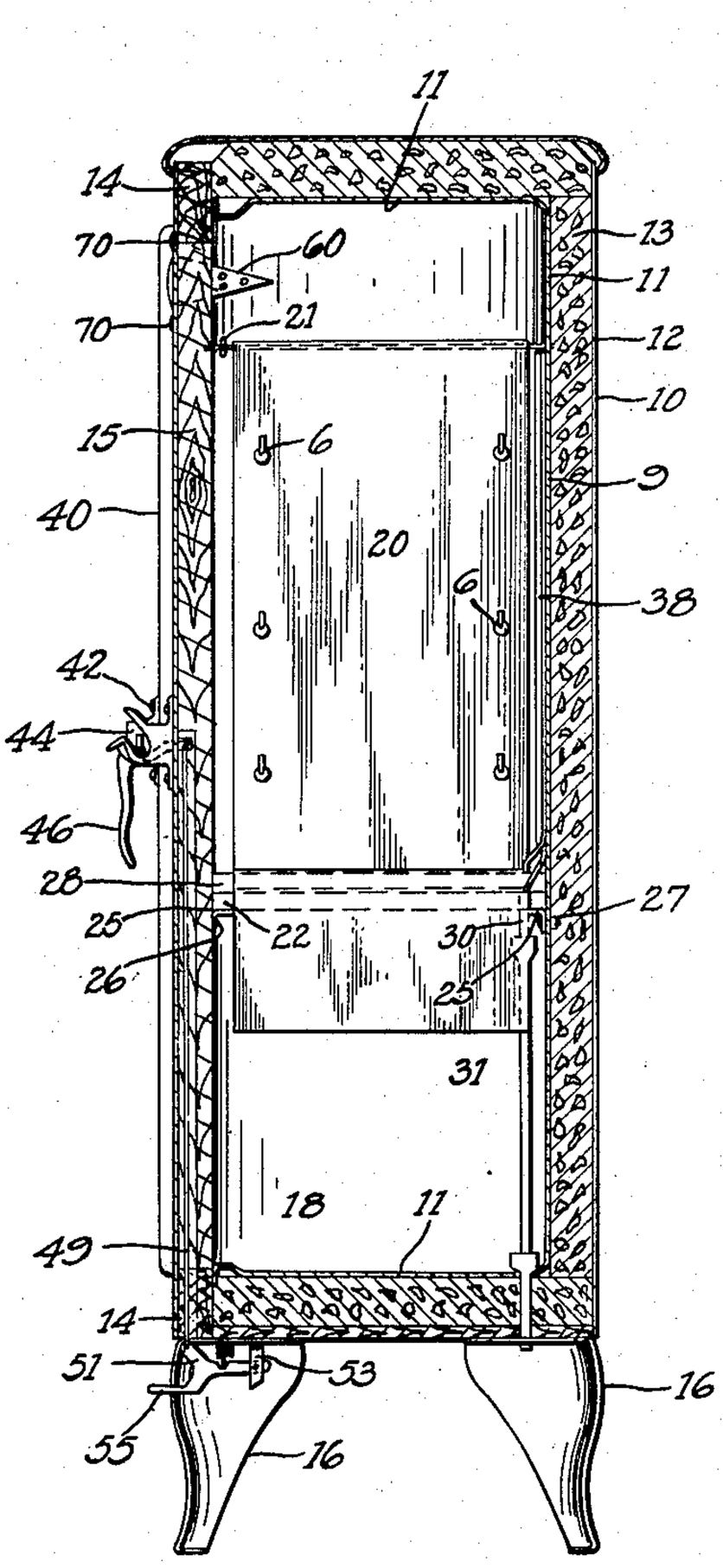

Fig 2

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REFRIGERATOR LATCH

Original Filed Dec. 10, 1930 3 Sheets-Sheet 3

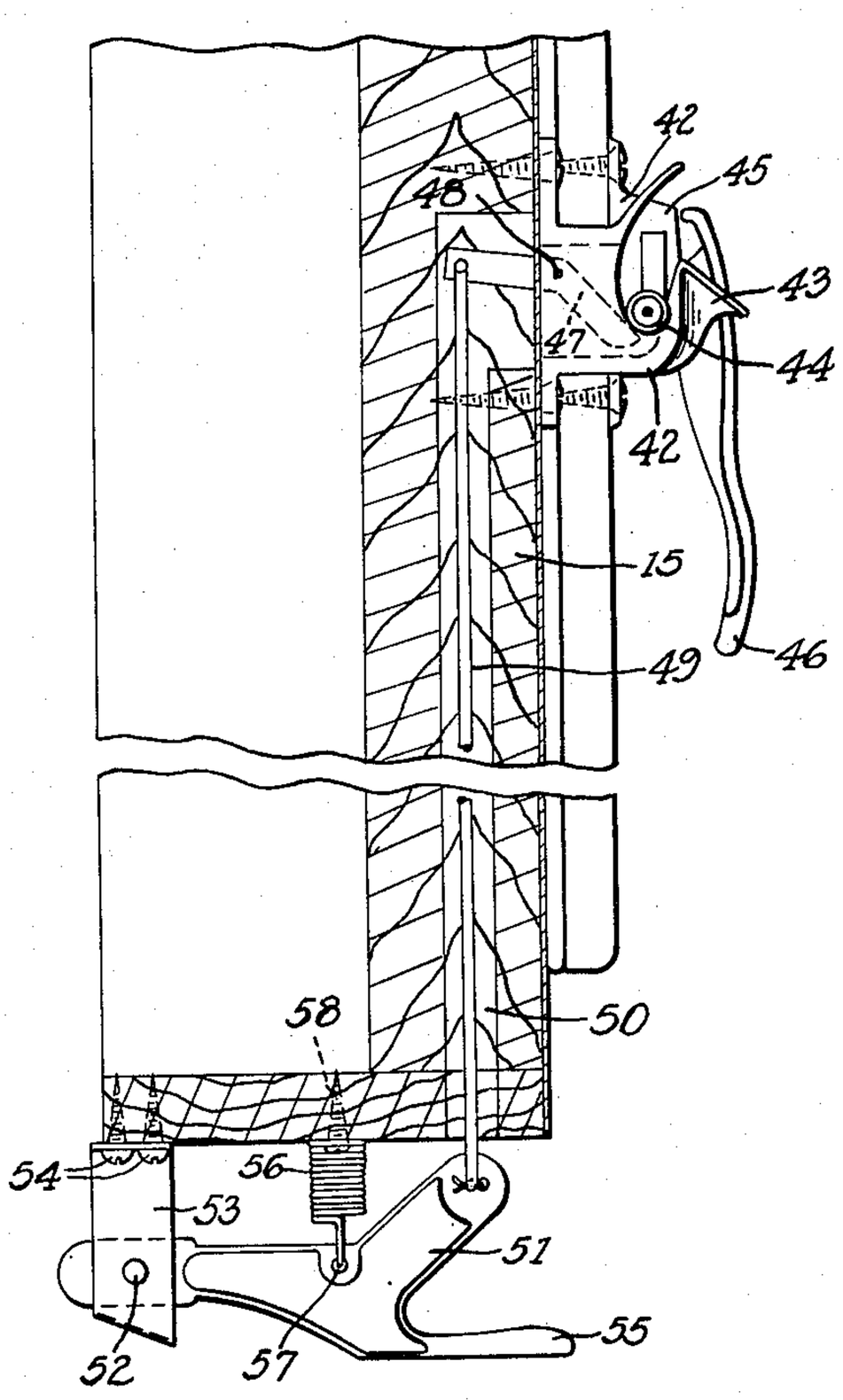

Fig 3

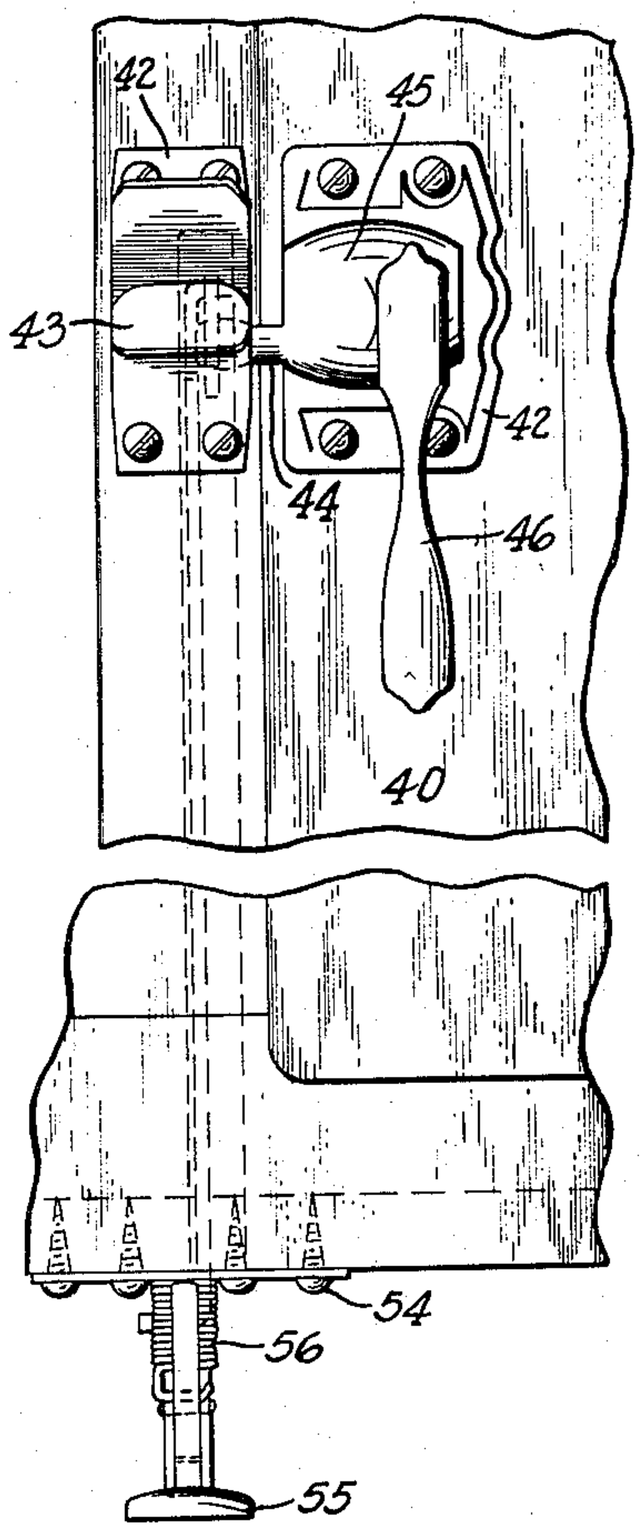

Fig 4

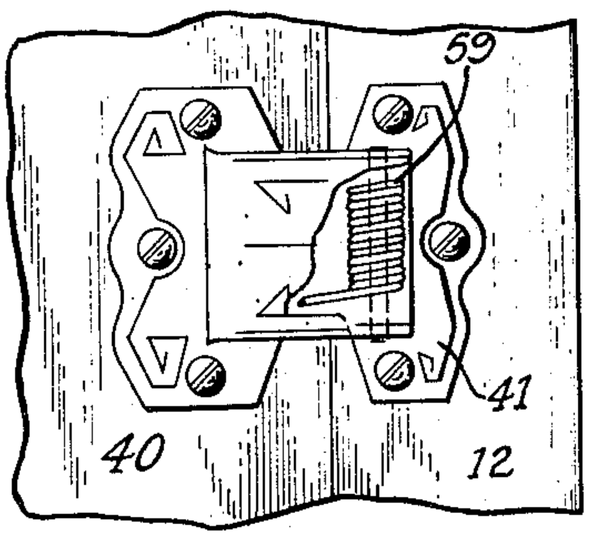

Fig 5

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Patented Nov. 26, 1935 2,021,914

UNITED STATES PATENT OFFICE

2,021,914

REFRIGERATOR LATCH

Martin J. Goulooze, Grand Rapids, Mich., assignor to Kelvinator Corporation, Detroit, Mich., a corporation of Michigan

Original application December 10, 1930, Serial No. 501,198. Divided and this application September 16, 1931, Serial No. 563,122

2 Claims. (Cl. 292—255)

This invention relates to refrigeration apparatus and more particularly to improvements in refrigerator cabinets. The present invention is a division of my copending application Serial No. 501,198, for Refrigerator, filed December 10, 1930, now Patent No. 1,955,910.

The principal object of this invention is to provide a refrigerator cabinet in which the parts subjected to contact with ice or other cooling media are readily removable.

Another object of the invention is the provision of a refrigerator cabinet having means associated with the refrigerating compartment for controlling the moisture forming on the walls thereof.

Another object of the invention is the provision of a refrigerator cabinet having a continuous inner lining forming common walls for the refrigerating and refrigerated compartments.

A further object of the invention is the provision of a refrigerator cabinet having means whereby the doors providing access thereto may be opened through the operation of a foot pedal.

In the drawings:

Figure 1 is a front elevational view of a refrigerator cabinet embodying this invention in which the door to the refrigerating compartment has been removed and parts are broken away to show the construction and arrangement of that compartment.

Figure 2 is a cross sectional view taken on line 2—2 of Figure 1.

Figure 3 is a fragmentary sectional view of a refrigerator cabinet showing the details of the door opening mechanism employed in practising this invention.

Figure 4 is a front fragmentary elevational view of the refrigerator cabinet structure shown in Figure 3.

Figure 5 is a fragmentary view of a refrigerator cabinet showing a hinge, with parts broken away, employed in practising this invention.

The refrigerator cabinet 10 embodying this invention comprises a pair of spaced metallic shells 11 and 12. The inner shell 11 forms a continuous inner lining for the cabinet and is constructed from a single sheet of metal. The outer shell 12 consists of five separate sheets of metal including two vertical side walls, a vertical rear wall, a horizontal bottom wall and a horizontal top wall. These several sections of the outer shell 12 are joined together in a suitable manner to provide a relatively continuous sealed shell. Suitable insulating material 13 is disposed between the shells 11 and 12.

The front of the cabinet is provided with a frame structure comprising a pair of horizontally disposed frame members 14 positioned at the top and bottom of the cabinet, and a vertical frame member 15 positioned midway between the side walls and joined to the horizontally disposed frame members. A metallic covering corresponding in finish to the outer shell 12 is provided for the frame members. The cabinet is supported by four legs 16 positioned at the respective corners of the cabinet.

The interior of the cabinet is divided into refrigerated compartments 17 and 18 and a refrigerating compartment 19. The refrigerated compartment 17 is separated from the refrigerating compartment 19 by a removable partition 20 suspended from a rod 21 spaced from the top wall of the cabinet and secured to the rear wall 11 and the vertical frame member 15. The refrigerated compartment 18 is separated from the refrigerating compartment 19 by a partition 22 which is of metal construction and has a centrally disposed opening therein. The outer edges and the edge adjacent the centrally disposed opening are finaged as indicated at 23 and 24. The partition 22 is supported by a pair of angle irons 25 secured in position on the front frame member and rear wall of the cabinet by screws 26 and bolts 27. The angle iron at the front of the cabinet is positioned slightly above the angle iron secured to the rear wall. A drip pan 28 of similar construction to the partition 22 is positioned above that partition and has its centrally disposed opening registering with the similar opening in the partition 22. Disposed between the partition 22 and the drip pan 28 and forming a reinforcing support for the horizontal portions thereof are a pair of supporting blocks 29. The drip pan 28 is provided with a drain spout 30 adjacent its rear edge. The drain spout 30 communicates with a drain pipe 31 which extends through the bottom wall of the cabinet and communicates with any suitable waste receptacle, not shown.

An ice rack 32 is supported upon the horizontal portion of the drip pan 28. The ice rack 32 consists of a pair of base irons 33 having their opposite ends made U-shaped with a horizontal portion between, a pair of brace rods 34 secured to the horizontal portions and the flanged extremities of the base irons, and a corrugated shelf 35 supported upon the brace rods 34. The corrugations of the shelf 35 run from the front to the rear so that moisture collecting thereon will drain towards the rear of the refrigerator.

A metallic apron 36 having its lower extremity

projecting towards the interior of the cabinet is secured by welding or other suitable means to the two stationary walls of the refrigerating compartment immediately above the partition 22. The apron 36 is positioned with its lower extremity 37 inside of the adjacent flanged edge of the drip pan 28. This construction causes the moisture condensed on the side walls of the refrigerating compartment to flow into the drip pan and makes possible the use of a continuous inner wall throughout the interior of the cabinet. Heretofore a joint in the wall was necessary at the point where the horizontal partition separating the refrigerating compartment and the refrigerated compartment was secured in position in order to provide adequate supporting means for the horizontal partition and to prevent moisture condensed on the walls of the refrigerating compartment from running down the walls into the refrigerated compartment.

A galvanized baffle plate 38 having a suitably formed lower extremity adapted to hold it in position against the rear inner wall of the refrigerating compartment is provided for the protection of that wall from injury due to carelessness when placing ice in the compartment.

The removable vertical partition 20 separating the refrigerating compartment from the refrigerated compartment abuts the partition 22 and has its lower extremity somewhat below that partition. The partition 20 is folded back upon itself, as indicated at 39, along a horizontal line adjacent the lower edge of the drip pan 28. The lower extremity of the fold 39 projects into the drip pan 28. By this construction moisture collecting either on the inside of the removable partition 20 or the outside thereof drains into the drip pan 28. The shell 11 forming the inner lining for the cabinet has a raised bead 9 along a vertical line extending from the top wall to a point below the apron 36. The bead is positioned in the refrigerated compartment immediately adjacent the removable partition 20. This bead prevents the flow of moisture, collected on the wall of the refrigerating compartment, into the refrigerated compartment. The partition 20 carries a plurality of shelf supports 6 which project into the refrigerated compartment 17. These supports cooperate with similar supports positioned on the opposite side of the compartment 17 to support a plurality of removable food shelves, not shown.

From the above description it will be seen that provision has been made to positively prevent the moisture which necessarily collects on the walls of the refrigerating compartment from getting into the refrigerated compartment, thus insuring cleanliness in the latter compartment and control over the waste water in the refrigerating compartment. It will also be apparent that suitable means for supporting a horizontal partition adapted to sustain the weight of an adequate supply of ice is provided without necessitating a break in the vertical walls of the cabinet.

One of the most common complaints in respect to refrigerators by the users thereof is to the effect that it is difficult to keep them clean and to prevent the sediment deposited by melting ice from producing an odor in the refrigerator. To eliminate this cause for complaint applicant has provided a removable partition 22, a removable drip pan 28, a removable ice rack 32 and a removable baffle plate 38. Each of these parts of the refrigerating compartment which comes in contact with the ice or the sediment deposited from its melting may be removed and cleaned by any suitable method and replaced without any appreciable effort.

The space between the top of the removable partition 20 and the top wall of the refrigerator cabinet, and the centrally disposed openings in the removable partition 2 and the drip pan 28 provide means for the circulation of air from the refrigerated compartment through the refrigerating compartment and back into the refrigerated compartment. The ice rack 32 positioned over the centrally disposed opening in the partition 22 and the drip pan 28 prevents moisture or sediment from passing through this opening while at the same time offering no obstruction to the ready flow of the circulating air therethrough.

The cabinet 10 is provided with suitable doors 40 for securely closing the structure. In Figure 1 the door to the refrigerating compartment and the refrigerated compartment 18 has been removed to more clearly show the interior of the refrigerating compartment and the wall construction adjacent thereto. The doors are suspended on hinges 41 by means of which the doors may be swung open outwardly. The doors are secured in a closed position by means of a suitable door latch mechanism 42. The latch mechanism consists of a latch catch or keeper 43 secured to the upright frame member 15, a latch lever 44 enclosed in a latch housing 45 secured to the door 40, and a latch handle 46 for operating the latch lever 44.

Prior to this invention it has been necessary for a housewife using a refrigerator to have one hand free to open the refrigerator door. This has been a source of considerable inconvenience and annoyance to housewives who have occasion to use their refrigerators frequently because they are obliged to make a separate trip to the refrigerator with each article to be placed therein, or to provide shelf space near the refrigerator to be used as a depository for articles to be subsequently placed in the refrigerator. This invention provides door opening mechanism for a refrigerator which may be operated by pressing downwardly on a foot pedal. The door opening mechanism consists of an operating lever 47 positioned partly within the vertical frame member 15 and pivoted at 48 to the latch catch or keeper 43. One end of the lever 47 projects outwardly from the vertical member 15 and is adapted to engage the latch lever 44 when moved vertically. An upward movement of the outer extremity of the lever 47 unseats the latch lever 44 and permits the door 40 to be swung outwardly. The opposite end of the lever 47 which projects into the interior of the vertical frame member 15 is pivotally connected to a rod 49 concealed within the vertical frame member 15 in a longitudinal channel 50 provided for that purpose. The lower extremity of the rod 49 is pivotally connected to a foot pedal 51 which is itself pivotally connected at 52 to a supporting post 53 secured to the bottom wall of the refrigerator cabinet by means of screws 54. The foot pedal 51 is operated by means of pressure supplied as for example by the refrigerator user's foot on a downwardly and outwardly extending projection 55. When a downward pressure is applied to the foot pedal 51 the operating lever 47 through means of the rod 49 releases the latch lever 44 and the door is free to swing open. Suitable means for normally holding the operating lever 47 in a position that will not interfere with the operation of the latch mechanism by means of the latch handle 46, is provided for in the form

of a spring 56 having one end thereof secured to the foot pedal 51 at 57 and the other end to the bottom wall of the refrigerator cabinet by screws 57. The tension of the spring 56 holds the foot pedal 51, the rod 49, and the operating lever 47 in the positions shown in Figures 3 and 4 except when distorted by a downward pressure on the projecting arm 55.

From the foregoing it will be observed that by pressing downwardly on the foot pedal 51 the latch lever 44 will be released and the door 40 will be free to swing outwardly. Means for causing the door to swing outwardly when the latch 44 is released is provided for in the form of a coil spring 59 associated with one of the hinges 41. One end of the spring 59 is rigidly secured to the stationary part of the hinge 41 associated with the cabinet wall while the other end of the spring is secured under compression to the movable part of the hinge. When the latch 44 is released the spring causes the door to swing outwardly.

I claim:

1. In combination, a keeper adapted to receive a movable door latch bolt, means for rigidly securing the keeper to a door jamb frame, said keeper being provided with a recessed portion whereby said keeper may be disposed in alignment with a hollow portion of a door jamb frame, and latch releasing means pivotally supported in said keeper and insertable into said hollow portion of said door jamb frame for connection with an actuating member operable therein.

2. In combination, a keeper adapted to receive a movable door latch bolt, means for rigidly securing the keeper to a door jamb frame, said keeper being provided with a recessed portion whereby said keeper may be disposed in alignment with a hollow portion of a door jamb frame, movable means pivotally supported in said keeper and insertable into said hollow portion of a door jamb frame for connection with an actuating member operable therein, a foot pedal for operating said actuating member and said pivoted movable means, and a spring for maintaining said movable means in normal position when the latch is freed from said keeper by auxiliary means.

MARTIN J. GOULOOZE.