Nov. 24, 1953 L. O. MOORE 2,660,036

REFRIGERATOR HAVING DOOR OPERATED VALVE MEANS

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Fig. 1

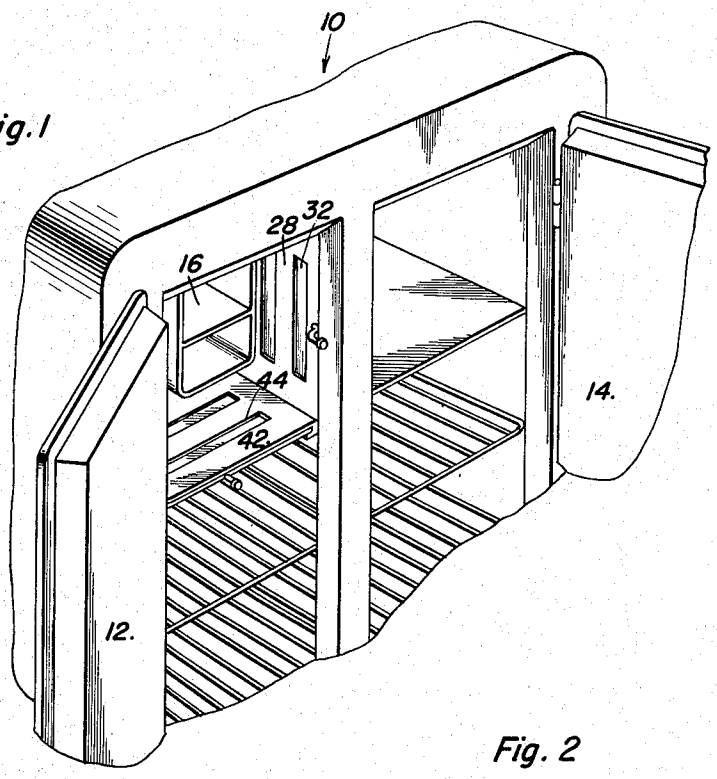
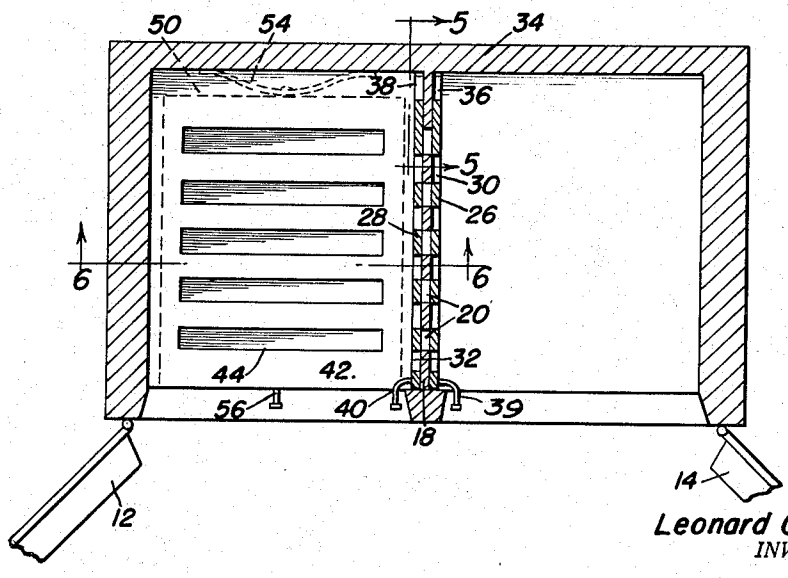


Fig. 2



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Fig. 3

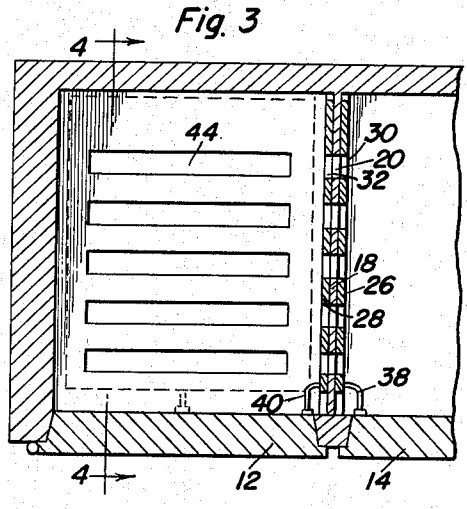


Fig. 5

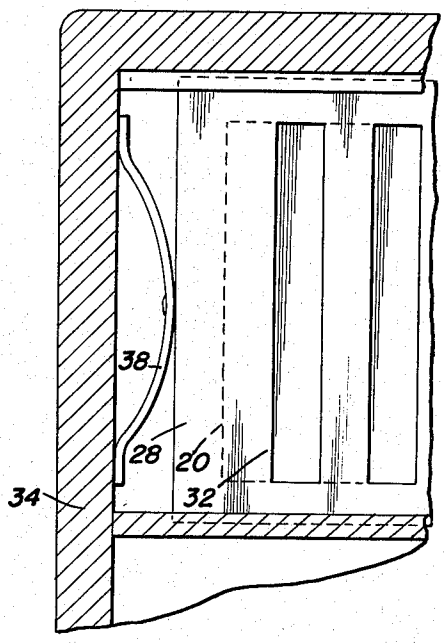


Fig. 4

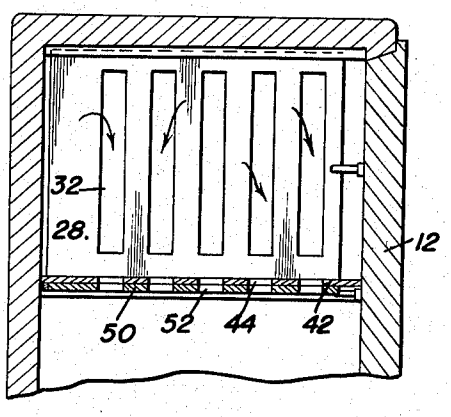


Fig. 6

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UNITED STATES PATENT OFFICE

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REFRIGERATOR HAVING DOOR OPERATED VALVE MEANS

Leonard O. Moore, Holdenville, Okla.

Application September 1, 1950, Serial No. 182,815

1 Claim. (Cl. 62—89)

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This invention relates to the class of refrigeration and more particularly to a device for isolating the freezing compartment of a refrigerator from the rest of the refrigerator so as to reduce condensation on the refrigeration compartment.

An object of this invention is to provide means for preventing condensation on the freezing compartment of a refrigerator which will reduce the freezing capacity of the refrigerator.

Another object of this invention is to provide a device for preventing the flow of warm air permitted to enter the storage compartments of a refrigerator to enter the freezer compartment, to thus reduce the efficiency of the refrigerator and permitting additional condensation to form on the freezing compartment thereof.

Still further objects of the invention reside in the provision of movable partitions for slidably closing the freezing compartment of the refrigerator from the other storage compartments thereof.

Other objects reside in the provision of a device for isolating the freezing compartment that is strong, durable, highly efficient in operation, simple in construction and manufacture, capable of being readily installed on new models of refrigerators or existing refrigerators, and which is relatively inexpensive to produce.

These, together with the various ancillary objects of the invention which will become apparent as the following description proceeds, are attained by this invention, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a perspective view showing the construction of the present invention;

Figure 2 is a horizontal sectional view showing the construction of the vertical fixed partition and movable vertical partitions in greatest detail;

Figure 3 is a vertical sectional view, similar to that shown in Figure 2 but showing the device with the doors in a closed position;

Figure 4 is a vertical sectional view as taken along the plane of line 4—4 in Figure 3;

Figure 5 is a vertical sectional view as taken along the plane of line 5—5 in Figure 2; and

Figure 6 is a vertical sectional view as taken along the plane of line 6—6 in Figure 2.

With continuing reference to the accompanying drawings, wherein like reference numerals designate similar parts throughout the various views, the reference numeral 10 generally designates an ice box or cabinet having doors 12 and 14 which are the closure means for the ice box 10. A freezing compartment 16 is provided for the ice box and as is conventional is usually located in an upper corner thereof.

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Secured within the refrigerator 10 is a fixed vertically extending partition wall 18 which is provided with a plurality of openings 20 therein. Suitable guides 22 and 24 are secured in the refrigerator for slidingly receiving a pair of vertical shutter plates or partitions 26 and 28 having therein openings or apertures 30 and 32 respectively. There are carried by the inner ends of the slidable partitions 26 and 28 bowed springs 36 and 38, respectively, which are engaged with the rear wall 34 of the cabinet and which continuously urge said partitions 26 and 28 to a position where, as shown in Figure 2, the apertures 30 and 32 are not in alignment with the openings 20. However, as is shown best in Figure 3, suitable stops in the form of arms 39 and 40 are carried by the movable partitions 26 and 28 so that the doors 12 and 14 contact such to urge the movable partitions into a position where the apertures 30 and 32 are in alignment with the opening 20 so as to permit free flow of the cooling air from the refrigerating compartment when the doors are closed.

Likewise, below the refrigerating compartment 16 there is carried a horizontally extending partition extending half way across the width of the refrigerator which is fixed in position and is generally indicated by reference numeral 42. The partition 42 is provided with openings 44 therethrough. Slidably mounted in guides 46 and 48 secured in the refrigerator is a movable partition 50 which is provided with apertures 52. The spring 54 continuously urges the movable partition 50 into a position where the apertures 52 are not in alignment with the openings 44. However, an arm 56 is carried by the movable partition 50 in such manner as to permit the door 12 to urge the movable partition into such a position that when the door is closed the apertures 52 will be in alignment with the openings 44.

Hence, when the door 12 is closed and the door 14 is opened for access into the storage compartments in that half of the refrigerator, the freezing compartment 16 will be completely isolated from the storage compartment to which the door 14 permits access, because the partition 26 will be in such position that the apertures 30 will not be in alignment with the apertures 20.

When the door 12 is opened, the apertures 32 will not be in alignment with the apertures 20 and likewise the apertures 52 will not be in alignment with the apertures 44, thus isolating the freezing compartment 16.

Since, from the foregoing, the construction and advantages of this refrigerator are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiment shown and described, but all suitable modifications and equivalents may be readily resorted to which fall within the scope of the appended claim.

Having described the invention, what is claimed as new is:

In a mechanical refrigerator of the type including a cabinet comprising a back wall, said cabinet having storage compartments therein, hinged access doors and a freezing unit, partitions separating the unit from the storage compartments, one of said partitions including a stationary vertical panel having elongated openings therein for the passage of air, pairs of horizontal guides on the upper and lower portions of said panel, vertical shutter plates slidable in said guides and having openings therein for registry with the first named openings, bowed springs, mounted on the inner ends of the shutter plates and engaged with the back wall of the cabinet for yieldingly urging said plates toward closed position, and arms on the shutter plates engageable by the doors for opening said shutter plates when said doors are closed.

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