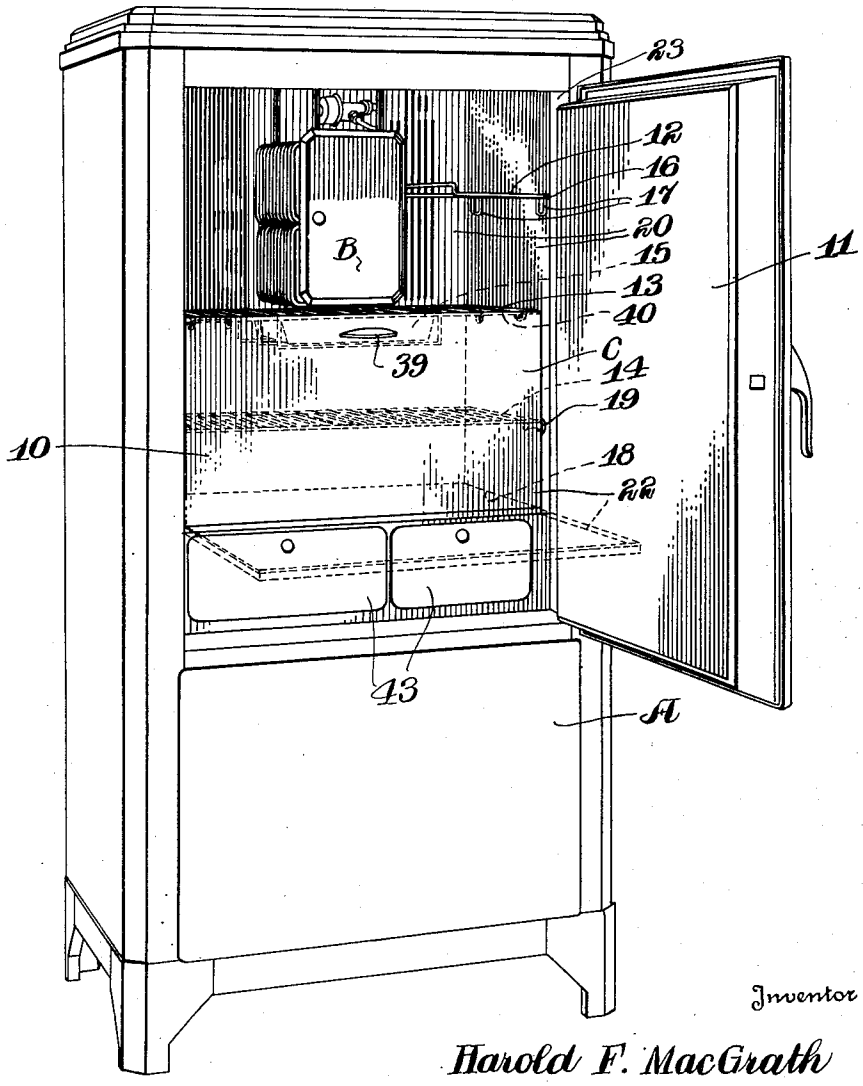
July 26, 1938. H. F. MacGRATH 2,124,857

REFRIGERATOR

Filed Feb. 15, 1935 2 Sheets-Sheet 1

Fig. 1



Inventor

Harold F. MacGrath

By Howard Pierce

Attorney

July 26, 1938. H. F. MacGRATH 2,124,857

REFRIGERATOR

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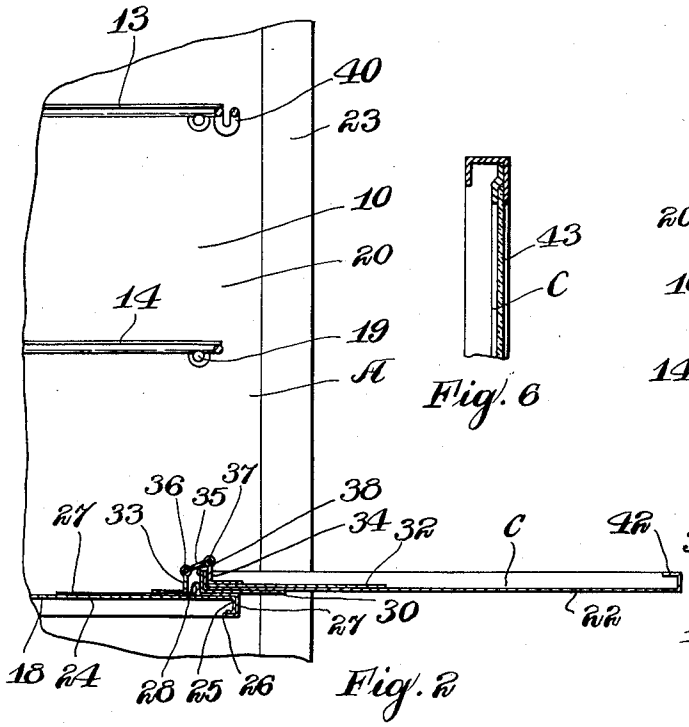


Fig. 2

Fig. 6

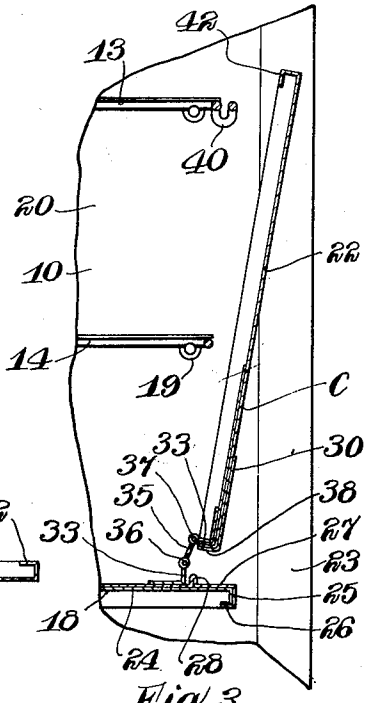


Fig. 3

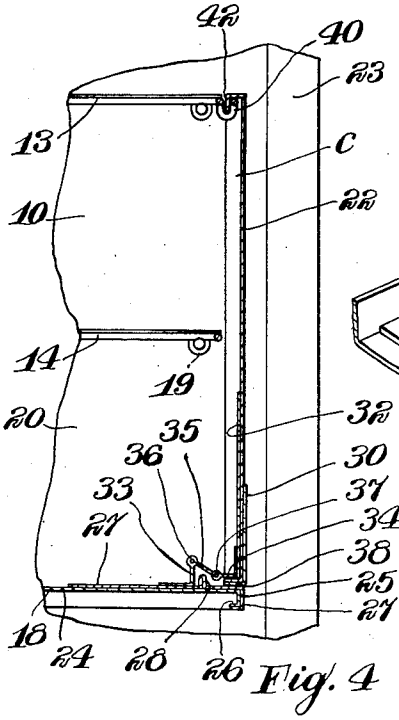


Fig. 4

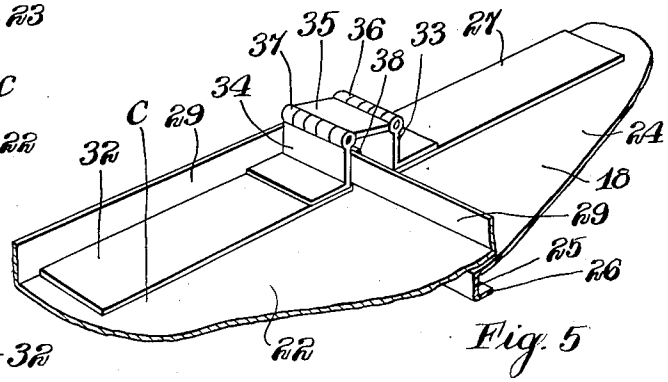


Fig. 5

Inventor

Harold F. MacGrath

By Howard Price

Attorney

Patented July 26, 1938 2,124,857

UNITED STATES PATENT OFFICE

2,124,857

REFRIGERATOR

Harold F. MacGrath, Chicago, Ill.

Application February 15, 1935, Serial No. 6,688

4 Claims. (Cl. 312—186)

My invention relates to an improvement in refrigerator construction, and describes in particular an inner closure for a refrigerator which will act to prevent a good proportion of the warm air ordinarily entering a refrigerator when the door thereof is opened from such entry.

It is my object to provide an inner closure within the outer closure of a refrigerator which closes off a portion of the space within the refrigerator, and acts to prevent a circulation of warm air into the refrigerator acting to drive cold air therefrom. This inner closure is preferably mounted adjacent the flooring of the refrigerator, leaving a single opening at the top of the refrigerator through which air will not readily circulate. The contents of the refrigerator shelves above the top of the inner closure are readily accessible upon opening the outer door in the usual manner; but goods placed on the shelves to the rear of the inner closure are also readily obtained by merely opening the inner closure. Thus the entire inside of the refrigerator is only open to the outer air when it is necessary to insert articles into, or withdraw articles from, the space to the rear of the inner closure. The action usually known as "spilling the cold" from the refrigerator upon the opening of the door thereof is thus to a large extent obviated.

By means of my inner closure, it is possible for me to provide a refrigerator having a single door opening, and yet to provide a means of retaining the cold air in the refrigerator when the same is opened. Accordingly, through the use of my inner closure, I am able to provide a refrigerator which will operate more economically and retain a more uniform low temperature than is possible in the refrigerators commonly in use at the present time.

It is an object of my invention to provide an inner closure which will act as a shelf when in open position, making it possible for me to provide a shelf extending from the refrigerator for use during the rearrangement of goods within the refrigerator, or for supporting articles being inserted into or withdrawn from the refrigerator. In preferred form, my inner closure extends from the refrigerator substantially flush with the floor of the refrigerator, and is supported in such a manner that articles may be rested thereupon when the goods are removed from the refrigerator for rearrangement or cleaning of the refrigerator.

It is a feature of my invention to provide a special hinge construction on my inner closure by means of which the inner closure may be easily and quickly supported in either open or closed position. In the form of construction shown, my closure is pivoted into vertical position and then moved vertically to hang the same upon one of the refrigerator shelves. It is my object to provide a closure which will remain in either extreme position without complicated or cumbersome apparatus to accomplish this end. It is also desired to provide an inner closure which can be operated without necessitating the application of a strong force in the operation of the same.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a perspective view of a refrigerator illustrating a manner in which my inner closure may be positioned, and illustrating in dotted lines the open position of the closure.

Figure 2 is a cross-sectional view vertically through a refrigerator, illustrating the inner closure in open position.

Figure 3 is a cross-sectional view through a refrigerator similar to Figure 2, but showing the inner closure in partially closed position.

Figure 4 is a cross-sectional view similar to Figures 2 and 3, illustrating the inner closure in completely closed position.

Figure 5 is a perspective detail view of the hinge construction of my inner closure.

Figure 6 is a sectional detail of an alternative inner closure.

My refrigerator A comprises a body portion provided with a food compartment 10 within which the cooling unit B may be situated. The food compartment 10 is provided with a door 11 through which access to the food compartment 10 is afforded. Within the food compartment 10 are suspended a series of shelves 12, 13 and 14, which may be spaced in any manner desirable. In the present refrigerator A illustrated, for example, the cooling unit B is mounted centrally in the compartment 10, and the shelf 13 extends directly beneath the cooling unit B. Embodied in the shelf 13 is a drip pan 15 to catch condensation from the cooling unit. The shelf 12 is pivotally mounted at 16 to the wall bracket 17.

The shelf 14 is suspended between the shelf 13 and the floor 18 of the food compartment 10. Each of the shelves are secured by means of rubber covered pins 19, or by any other suitable

means secured to the side walls 20 of the food compartment 10.

The inner closure C is in the form of a flat tray or shelf 22. The closure C is pivoted in a manner which will be more fully described, to the flooring 18 of the food compartment 10. When in closed position, the closure C is shown as extending into contact with the shelf 13, thus inclosing the lower portion of the food compartment. In the form illustrated, it may be seen that any food resting upon the floor 18, or the shelf 14, cannot be removed from the refrigerator A without opening the closure C. Anything positioned on the upper shelves 12 or 13, however, may be reached after opening the door 11 of the refrigerator without opening the closure C.

By placing articles most often inserted or removed from the refrigerator upon the top shelves 12 and 13, it is obvious that a more uniform temperature can be maintained within the food compartment 10 without as much actuation of the cooling unit B. Furthermore, as when articles are removed from the shelf 14 or from the floor 18 the closure C is ordinarily not entirely opened, there is less circulation of warm air through the food compartment 10 than would be the case if the front of the compartment was entirely open.

I provide a means of supporting the closure C extending horizontally through the opening 23 of the food compartment 10, for use in supporting food or articles during the rearrangement of the shelves of the refrigerator, or during the cleaning of the interior of the food compartment. I show, in dotted outlines in Figure 1, the position assumed by the closure when in open position. Figure 2 of the drawings illustrates the construction more in detail.

In Figure 2, the floor 18 is illustrated as being formed with a sheet-like body portion 24 having a downwardly extending edge 25 thereon provided with an inturned flange 26 along the bottom edge thereof. A pair of spaced reinforcing strips 27 are secured along the top surface of the floor 18, and extend down over the forward edge 25 and inturned flange 26, as illustrated. A shoulder 28 is formed in the reinforcing strip 27, against which the lower edge of the closure C may abut when the closure is in open position.

The closure C is in the form of a flat sheet 22 having a peripheral right angular extending edge 29 entirely about the same, for reinforcing purposes. Reinforcing strips 30 extend over a portion of the outer surface of the sheet 22, and are bent along the adjacent portion of the edge 29. These strips 30 are secured to the sheet 22 in spaced relation to correspond with, and to contact, the reinforcing strips 27 on the floor 18. On the inside of the sheet 22, or on the upper side when the closure C is in open position, I provide reinforcing strips 32 oppositely disposed from the strips 30, so that the sheet 22 is clamped or interposed between the strips 32 and the strips 30. Both the strips 30 and the strips 32 are secured by any suitable means to the sheet 22, as by bolts, or spot welding.

To pivotally connect the closure C to the floor 18, I provide angle members 33 and 34 extending from each strip 27 and 32, respectively, having right angular upstanding sides terminating in a hinge connection. A link 35 connects the hinge connecting portions 36 and 37 of the angle members 33 and 34, providing a double hinge arrangement capable of pivoting at two spaced points. Figure 2 of the drawings illustrates the closure C in open position, in which the reinforcing strip 30 of the sheet 22 of the closure C rests upon the reinforcing strip 27 of the floor 18, with the portion 38 of the reinforcing strips 30 abutting the shoulder 28 on the strip 27. When a weight acts to force down the outer extremity of the closure C, the link 35 and the shoulder 28 hold the inner end of the closure from upward or inward movement. The closure C can therefore not pivot down below the position shown in Figure 2.

When the closure C is moved into closed position, as shown in Figure 3, the handle 39 is engaged, and the closure pivoted upwardly. The link 35 permits the closure to be raised above the surface of the floor 18, as shown in this figure, and by this means the closure may be hooked over the hook members 40 secured to the shelf 13. The hooks 40 are so designed as to engage a flange 42 on the edge 29 at the top of the closure when the same is in closed position, or on the outer edge when the closure is in open position. As shown in Figure 4, when the closure C is in closed position, the flange 42 engages in the hooks 40, and the closure may be dropped down so that the lower edge thereof rests upon, or comes into close proximity with, the floor 18, to substantially close the opening between the closure C and the floor 18.

I have shown the closure C as made preferably of the material used in the construction of the interior of the refrigerator, such as sheet metal finished in any suitable manner. Any suitable material could, however, be used. In Figure 6, I have shown the closure as made of a transparent sheet, such as glass 43, which is secured in the place of the sheet 22, and which may operate in a similar manner to the construction described in detail.

In the foregoing description I have spoken of the element 18 as the floor of the food compartment. In actual construction, the element 18 is in reality the lowermost shelf, which acts to separate the food compartment from the drawer compartment containing food drawers 43. The element 18 is spaced slightly from the walls 20 of the food compartment to permit a limited circulation of air about the drawers 43. The element 18 cooperates with the door C to provide an elongated shelf when the door C is in lowered position, and assists the door C in preventing a circulation of cold air out of the door opening 23 of the refrigerator when the door 11 is opened.

In accordance with the patent statutes, I have described the principles of operation of my refrigerator, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that this is only illustrative of a means of carrying out my invention, and that obvious changes may be made within the scope of the following claims without departing from the spirit of the invention.

I claim:

1. A refrigerator including a body portion, two superimposed shelves therein, a baffle pivotally secured to the lower of said shelves, means for detachably connecting said baffle to the upper of said shelves above said one shelf, and means for pivotally connecting said baffle to said lower shelf, said connecting means including upstanding flanges on said lower shelf and upstanding flanges on said baffle adjacent the connecting edges of said lower shelf and baffle, and link means pivotally connecting said upstanding flanges.

2. A refrigerator including a body portion, a pair of superimposed shelves therein, a baffle

plate, means pivotally connecting said baffle plate to the lowermost of said shelves, said means including a link pivotally connected at one end to said baffle and at the other end to said lowermost shelf at a point spaced from the edge thereof, said lowermost shelf extending beyond said pivotal connecting means to support the adjacent edge of said baffle overlying said shelf when said plate is in one position.

3. A refrigerator including a body portion, a shelf therein, a baffle plate, a second shelf above said first shelf, means pivotally supporting said baffle plate to said first named shelf, to permit said plate to move from a horizontal position parallel and adjacent said first shelf to a vertical position extending adjacent said second shelf, said means including a link pivotally connecting said baffle plate adjacent one edge thereof and said first named shelf along a line spaced from, but adjacent, one edge of said first named shelf, and stop means on said first named shelf against which the adjacent edge of the baffle plate abuts when said plate is in horizontal position.

4. A refrigerator including a body portion, a shelf therein, a baffle plate, means pivotally connecting one edge of said baffle plate to said shelf at a point spaced from the edge of said shelf and pivotal from horizontal to vertical position, said shelf overlapping said baffle in horizontal position of said baffle, and stop means on said shelf against which an edge of said baffle abuts in horizontal position.

HAROLD F. MacGRATH.