

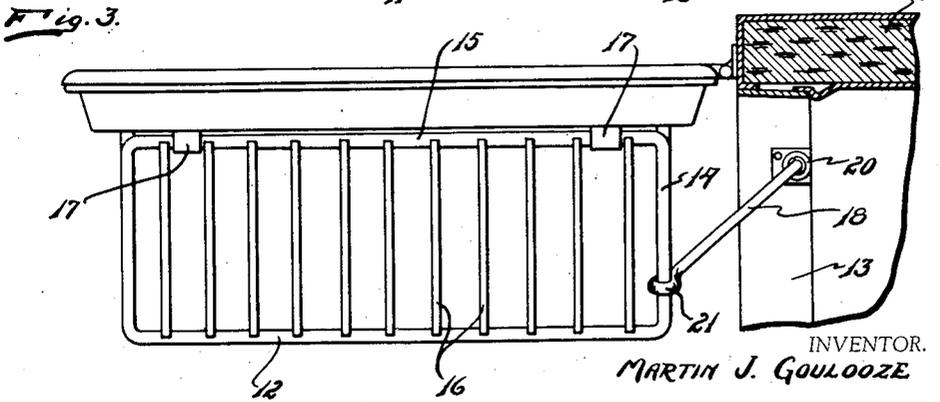
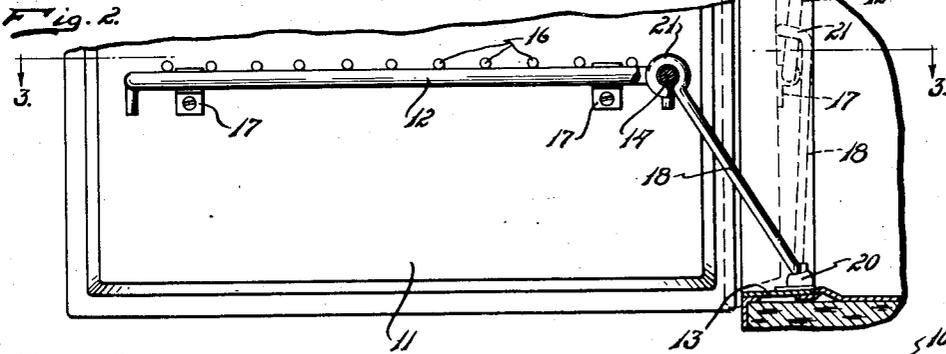
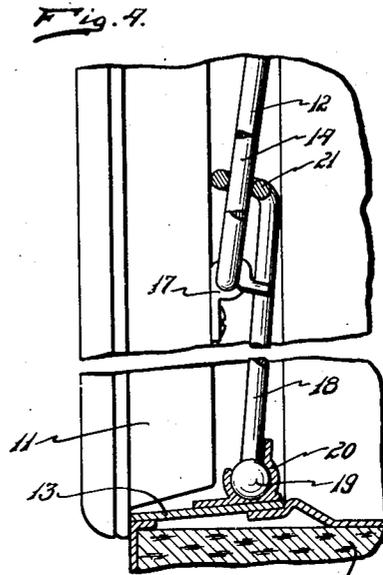
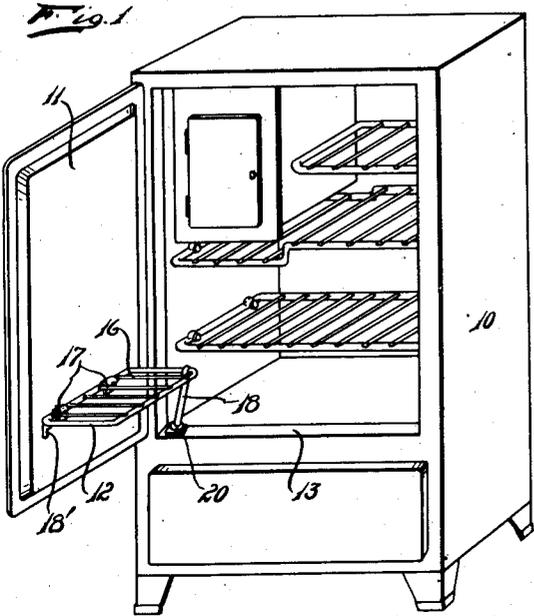
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REFRIGERATING APPARATUS

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2 Sheets-Sheet 1



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REFRIGERATING APPARATUS

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11 Claims. (Cl. 312—173)

This invention relates to refrigerators and more particularly to shelves for receiving and supporting articles while other articles are being placed into or removed from the refrigerator.

In placing articles into or removing them from a refrigerator, it is frequently necessary to remove other articles while this is being done. Often times, there is no readily available place for the temporarily removed articles in the refrigerator, since the shelves of the refrigerator may be crowded, and it is then necessary to dispose them at another place which may be a considerable distance from the refrigerator. This, of course, is a great inconvenience as it consumes time and causes the housewife or other person to take many unnecessary steps.

One of the objects of the present invention is to incorporate with a refrigerator a readily accessible means on which articles temporarily removed during the placing into or removal of other articles from the refrigerator, may be quickly and conveniently disposed.

Another object is to provide such an article supporting means which is made readily available for use by the opening of the refrigerator door.

Another object is to provide such an article supporting means which is mounted on the refrigerator door or at the door opening or both.

A further object is to provide such an article supporting means which is carried by the refrigerator door or at the door opening or both and which automatically is made available for use by the opening of the refrigerator door.

With the above and other objects in view, the present invention consists in certain features of construction and combinations of parts to be hereafter described with reference to the accompanying drawings, and then claimed.

In the drawings which illustrate suitable embodiments of the present invention,

Figure 1 is a perspective view of a refrigerator showing the door open and the article receiving shelf in article receiving position;

Figure 2 is a vertical fragmentary section taken through the refrigerator showing the door open and the shelf in operative position, and also showing the door closed and the shelf in raised inoperative position;

Figure 3 is a section taken approximately on the line 3—3 of Figure 2 showing the shelf and operating link in operative position;

Figure 4 is an enlarged fragmentary view of

the operating link showing the universal mounting therefor;

Figure 5 is a perspective view of a refrigerator showing a modified shelf arrangement in which the shelf is mounted at the lower ledge of the door opening;

Figure 6 is a transverse section through the refrigerator, showing the door open and the shelf in operative position;

Figure 7 is a view similar to Figure 6 showing the door closed and the shelf in its inoperative position; and

Figure 8 is a vertical section taken approximately on the line 8—8 of Figure 6 showing the shelf in its article receiving position.

Referring to the accompanying drawings in which like numerals refer to like parts throughout the several views, I have shown in Figures 1 and 5, for the purpose of illustration, a refrigerator 10 having a vertically hinged door 11. The device of the present invention is in the form of an auxiliary shelf 12 which is so movably mounted that upon the opening of the door 11, it will swing to a horizontal position so that when it is desired to place articles into or remove articles from the refrigerator, other articles which may be in the way, may be quickly and conveniently placed on the auxiliary shelf 12, thus obviating the inconvenience of going across the kitchen or refrigerator room to place these articles on a table or some such place, while the other articles are being placed into or removed from the refrigerator.

The shelf is also so arranged that it may be moved to a substantially vertical position when the door 11 is closed so as not to take up useful space in the food compartment of the refrigerator. This may be done manually or by a suitable mechanical means to be later described, which automatically functions upon the opening of the refrigerator door to move the shelf to a horizontal operative position.

Also, as will be seen from the drawings, the shelf 12 may be mounted on the inner side of the refrigerator door or upon the lower ledge 13 of the door opening. Obviously, however, the auxiliary shelf 12 may be mounted at other convenient locations.

In the construction shown in Figures 1 to 4 inclusive, the shelf 12 is in the form of a grid or grill-like frame having rod-like end pieces 14, rod-like side pieces 15 and spaced cross pieces 16. In this construction, the shelf 12 is mounted at a convenient location on the inner side of the door 11 by any means suitable for providing a

swinging movement. As here shown, one of the rod-like side pieces 15 is horizontally hinged by means of a pair of spaced members 17 suitably secured to the inner face of the door 11. The shelf 12 is also provided with suitable projections 18' which, when the shelf is in its article receiving position serve as stops which abut the inner face of the door 11 and support the shelf in a horizontal position.

In order to provide automatic means for swinging the shelf upwardly to a position adjacent the face of the door when it is closed so as not to utilize useful space in the refrigerator food compartment, I employ a suitable link 18, one end of which is preferably provided with a ball portion 19 having a universal connection with a retainer 20 secured to the lower ledge 13 of the door opening. The opposite end of the link 18 is preferably provided with an enlarged eye 21 which slidably surrounds the rod-like end piece 14 adjacent the door opening. This link 18 is arranged at such an angle, when the door is opened and the shelf in its horizontal article receiving position, that as the door is moved to its closed position, the shelf 12 is swung upwardly through the sliding engagement with the link 18 therewith to the position adjacent the inner door face as indicated in dotted outline in Fig. 2. Also, as the door is moved to an open position, the link 18 causes the shelf 12 to swing to the article receiving position shown in solid outline.

In the construction shown in Figures 5 to 8 inclusive, one of the rod-like side pieces 23 of the shelf 12 is hingedly supported on the lower ledge 13 of the door opening by means of suitable spaced members 24. This rod-like side piece is provided with an extension 25 which terminates adjacent the hinged edge of the door 11 in an offset portion 26. The offset portion 25 is so shaped that when the door 11 is swung to its open position, such portion lies somewhat beyond the edge of the door opening as indicated in Figure 6. When the door is open, the shelf 12 is supported in a horizontal article receiving position by the door sill 13.

Upon closing the door, the portion thereof adjacent the hinged edge engages the offset portion 25 during the initial travel, and swings the shelf upwardly to a substantially vertical position, such as indicated in Figure 7.

It will be seen from Figure 7, that with the door 11 closed, the shelf 12 is substantially vertically disposed adjacent the inner face of the door and does not occupy any of the useful space of the food compartment. The shelf 12 when the door is being moved to open position gradually swings downwardly by gravity to its horizontal article receiving position, as shown in Figure 8.

It will be noted from the drawings and foregoing description that I have provided a new and useful device for refrigerators which will save the time and unnecessary movements of the housewife or other persons in placing articles into and removing them from the refrigerator, and which is so arranged that it may be conveniently located, and that it may be moved into a readily accessible article receiving position immediately upon the opening of the door.

While I have shown the auxiliary shelf as being of a grid or grill-like construction, it is to be understood that it may be of a solid piece of any suitable material hinged to the desired supporting portion of the refrigerator in any suitable manner and by the use of any suitable means.

Aside from the specific embodiments of the invention herein shown and described, it will be understood that numerous details of the construction may be altered or omitted without departing from the spirit and scope of the invention, and that I do not desire to limit the invention to the exact construction herein set forth, as I desire to claim the invention broadly as well as specifically as indicated in the appended claims.

What I claim is:

1. In a refrigerator having a swingable door, an article supporting shelf horizontally hinged to the inner face of said door, and a link universally connected at one end to said refrigerator and slidably connected at the opposite end to said shelf, whereby upon swinging movement of said door, said shelf is caused to swing to and from a horizontal article supporting position.

2. In a refrigerator having a swingable door, an auxiliary shelf horizontally hinged to the inner face of said door, means on said shelf engageable with said face to hold said shelf in a horizontal position when said door is open, and means for swinging said shelf upwardly out of horizontal position upon closing movement of said door.

3. In a refrigerator having a swingable door, an auxiliary shelf horizontally hinged to the inner face of said door, means on said shelf engageable with said face to hold said shelf in a horizontal position when said door is open, and means for swinging said shelf upwardly out of horizontal position upon closing movement of said door, said last mentioned means comprising a link member, slidably connected at one end with said shelf and hingedly connected at the opposite end with a stationary portion of the refrigerator.

4. In a refrigerator having a food compartment and a swingable door for closing the same, an auxiliary shelf horizontally hinged to the inner face of said door, stop means associated with said shelf to support said shelf in horizontal position when said door is open, and means for swinging said shelf out of horizontal position upon closing movement of said door.

5. In a refrigerator having a food compartment and a swingable door for closing the same, an auxiliary shelf horizontally hinged to the inner face of said door, stop means associated with said shelf to support said shelf in horizontal position when said door is open, and means for swinging said shelf out of horizontal position upon closing movement of said door, said last mentioned means comprising a link having one end slidably connected with said shelf and its opposite end universally connected with said refrigerator within said food compartment.

6. In a refrigerator having a food compartment and a swingable door for closing the same, an auxiliary shelf horizontally hinged to the inner face of said door, stop means associated with said shelf to support said shelf in horizontal position when said door is open, and means for swinging said shelf out of horizontal position upon closing movement of said door, said last mentioned means comprising a rod portion on said shelf, and a link having an eye portion at one end encircling said rod portion and universal means at the other end thereof for universally mounting said last named end within said food compartment.

7. In a refrigerator having a food compartment and a vertically hinged door for closing the same, an auxiliary shelf pivotally mounted with-

in the food compartment, and engageable means actuatable upon closing movement of said door for turning said shelf from an operative article supporting position to an inoperative position.

5 8. In a refrigerator having a food compartment and a swingable door for closing the same, an auxiliary shelf horizontally hinged to said refrigerator, the hinge axis being within said food compartment, and means on said shelf engageable
10 with said door for swinging said shelf from a horizontal position during closing movement of said door.

9. In a refrigerator having a door opening and a swingable door for closing the same, a swingable
15 auxiliary shelf disposable in a horizontal article supporting position when said door is open, means for hinging said shelf to the lower ledge of said door opening, and means extending from
20 said shelf for engagement with said door during closing movement thereof to swing said shelf out of its horizontal position.

10. In a refrigerator having a door opening and

a swingable door for closing the same, a swingable auxiliary shelf, means for hinging said shelf to the lower ledge of said door opening, said ledge supporting said shelf in horizontal position while the door is open, and an offset arm extending
5 from said shelf toward the hinged edge of said door for engagement with said door upon closing movement thereof to swing said shelf out of its horizontal position.

11. In a refrigerator, a heat insulating cabinet
10 enclosing a storage compartment, a stationary shelf horizontally disposed in said storage compartment, an open doorway in said cabinet closed by a vertically hinged door, a rearranging shelf,
15 means for pivotally supporting said rearranging shelf, and actuating means for turning said rearranging shelf to a horizontal article receiving
20 position as said door is opened and to a vertical folded position between said door and said horizontal shelf as said door is closed.

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