March 10, 1936. O. M. OTTE 2,033,860

EXTENSION SHELF FOR REFRIGERATORS

Original Filed July 1, 1932 3 Sheets-Sheet 1

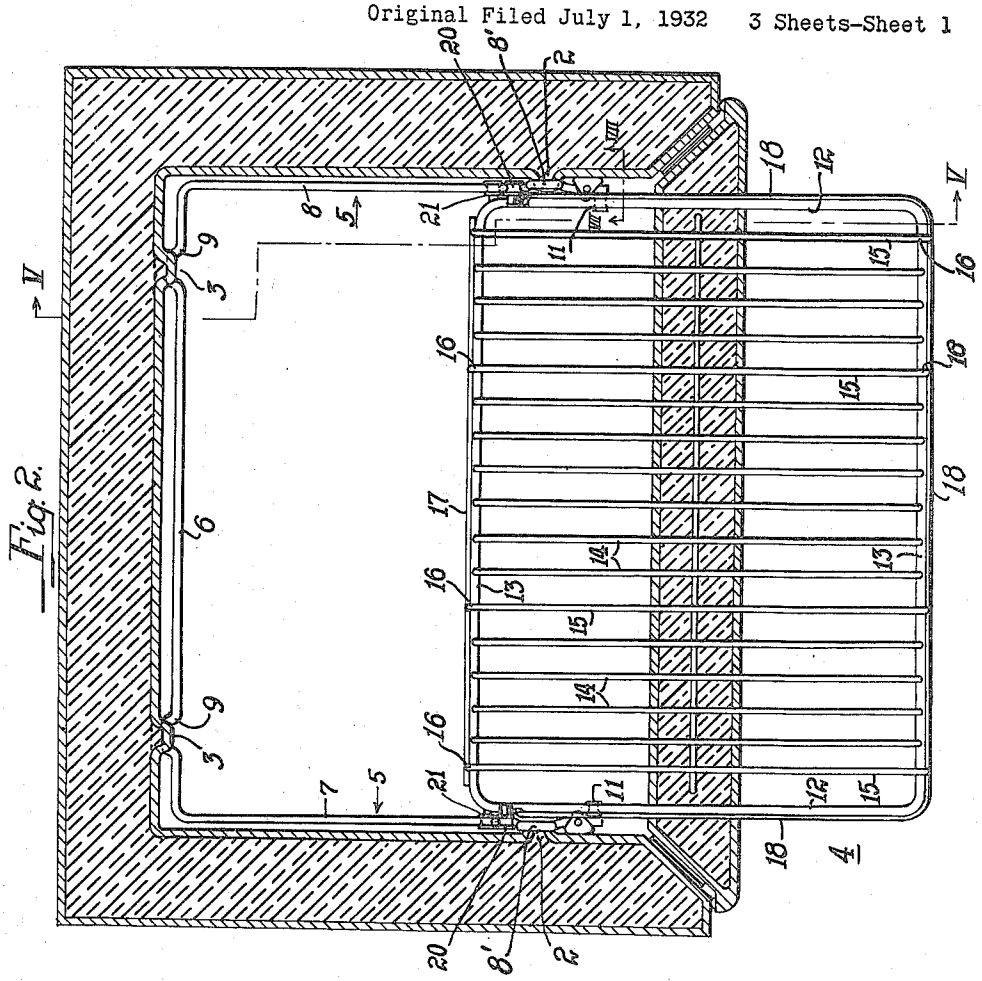


Fig. 2.

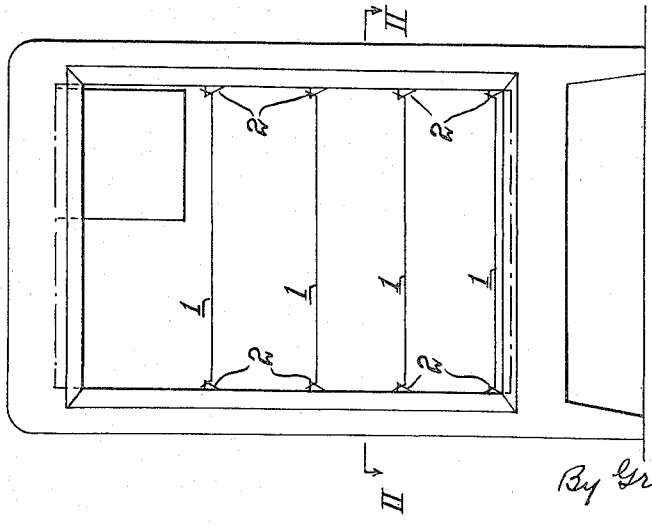


Fig. 1.

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Fig. 3

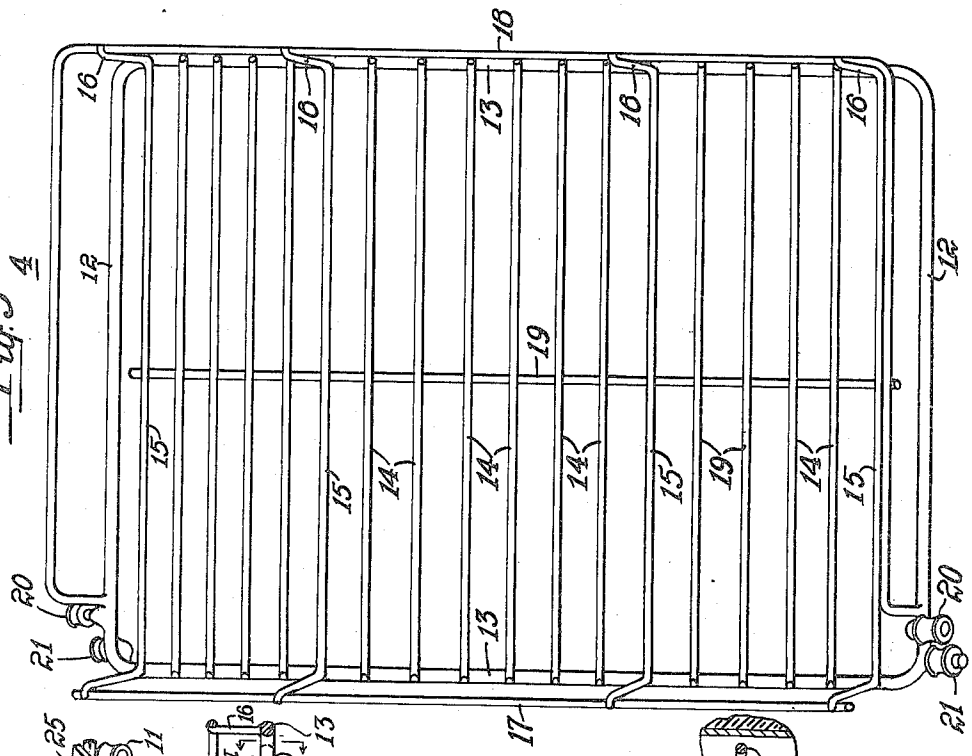


Fig. 4.

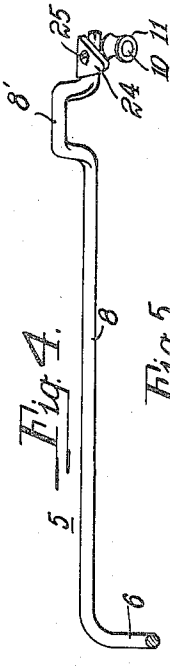


Fig. 5.

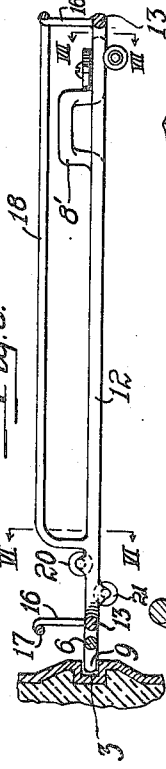


Fig. 6.

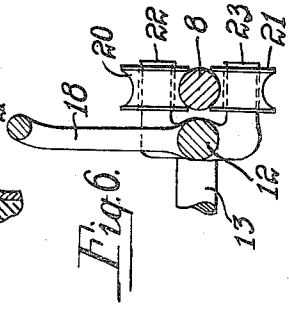


Fig. 7.

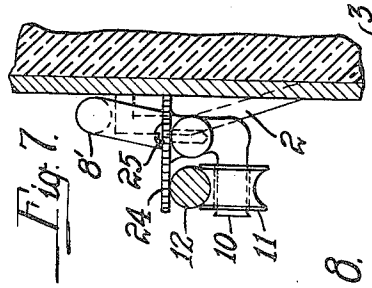
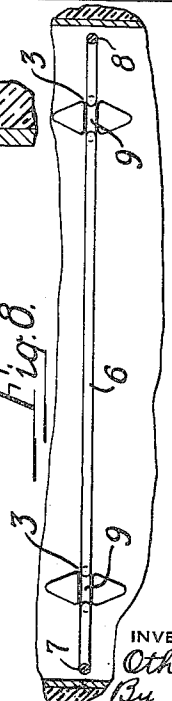


Fig. 8.



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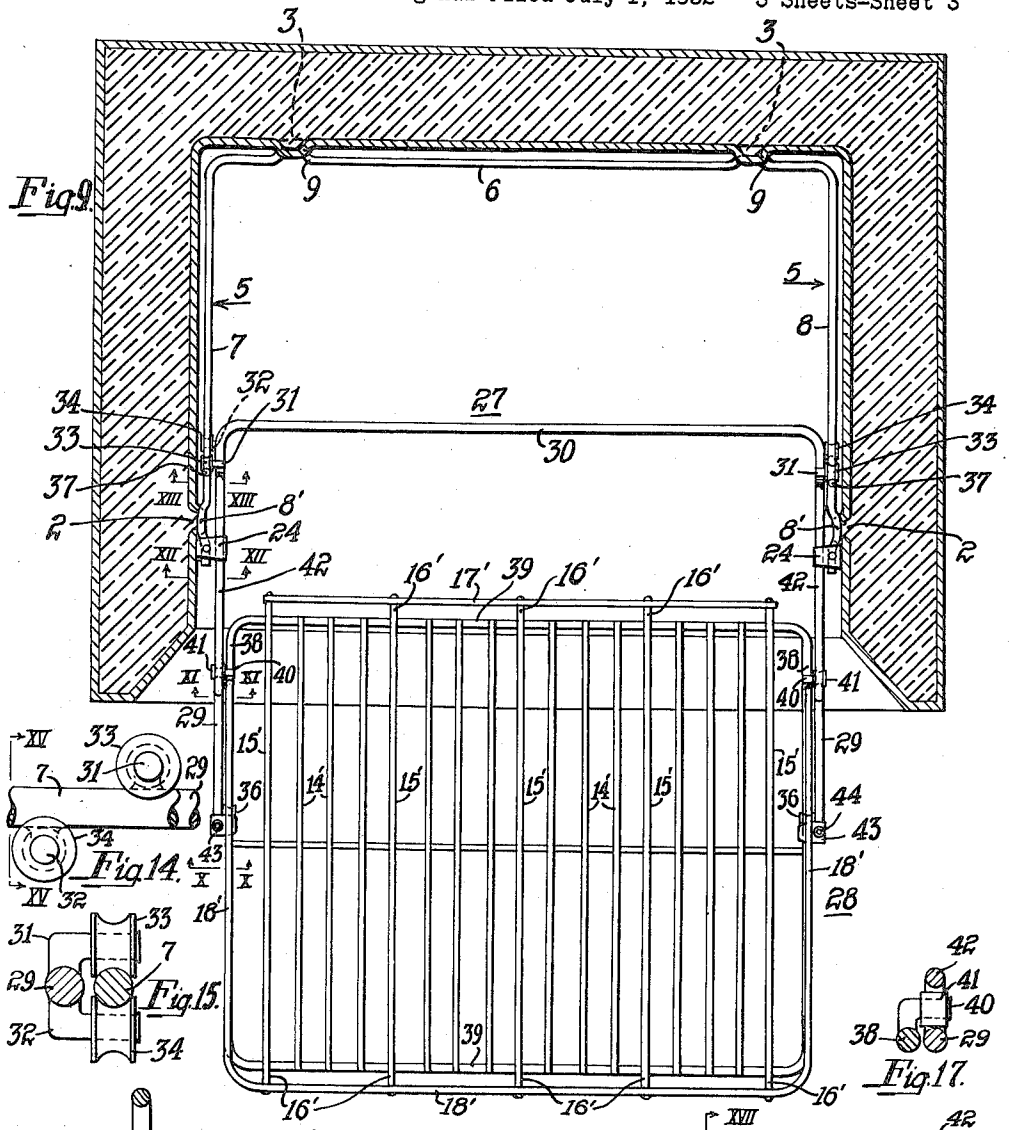


Fig. 9.

Fig. 14.

Fig. 15.

Fig. 17.

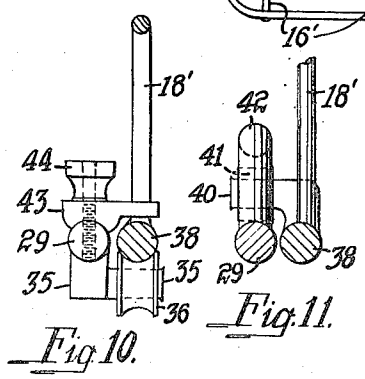


Fig. 10. Fig. 11.

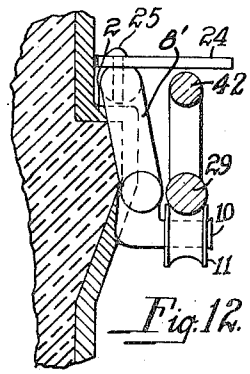


Fig. 12.

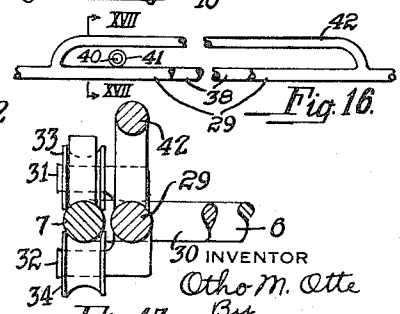


Fig. 16. Fig. 13.

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Patented Mar. 10, 1936

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UNITED STATES PATENT OFFICE

2,033,860

EXTENSION SHELF FOR REFRIGERATORS

Otho M. Otte, Tarentum, Pa., assignor, by mesne assignments, to General Electric Company, a corporation of New York

Application July 1, 1932, Serial No. 620,434
Renewed January 23, 1936

13 Claims. (Cl. 211—143)

This invention relates to refrigerators and more particularly to shelves adapted to be moved to or from a provision compartment such as that of a refrigerator so that access may be had to the provisions placed thereon without interference from the shelf immediately above the same.

An object of this invention is to provide a shelf, of the character referred to above, that shall be simple in construction, rugged, efficient in operation and inexpensive to manufacture.

Another object of the invention is the provision of a refrigerator shelf which affords either full extension or partial extension, of the provision supporting parts thereof.

A still further object of the invention is the provision of a shelf of the character referred to above that may be easily removed from and replaced in refrigerator compartments so that the convenience thereof will act as a stimulus to maintaining the shelf in a sanitary condition rather than as a deterrent.

Other objects of the invention will, in part, be apparent and will in part be obvious from the following description taken in conjunction with the accompanying drawings, in which:—

Figure 1 is a more or less diagrammatic view, in front elevation of a refrigerator (the door being removed) showing the relative location of the provision shelves embodying the invention;

Fig. 2 is a view in section, taken on a plane such as indicated by line II—II of Fig. 1, showing a shelf, embodying one form of the invention, in an extended position;

Fig. 3 is an enlarged top view in perspective, of a provision shelf such as illustrated in Fig. 2;

Fig. 4 is a perspective view, in section, of one side of the provision shelf support frame which is shown in plan, in Fig. 2;

Fig. 5 is a view in section showing the relative position of the provision shelf and the support frame, when the shelf is wholly within the compartment of the refrigerator, said section being taken along line V—V of Fig. 2, only a fragment of the refrigerator back wall being shown;

Fig. 6 is a partial view in section of one side of the support frame and shelf taken on line VI—VI of Fig. 5;

Fig. 7 is a partial view in section taken on lines VII—VII of Figs. 2 and 5, showing the construction of the forward end of the shelf and support frame, and the manner in which the support frame is mounted on the refrigerator side walls;

Fig. 8 is a view in section of the support frame looking towards the back wall of the refrigerator compartment, showing the method by which the rear end of the support frame is held in operative position;

Fig. 9 is a view in section of the refrigerator such as shown in Fig. 2 but in which the refrigerator compartment is provided with a modified form of provision shelf which affords full extension with respect to the compartment;

Fig. 10 is a view in section taken along the line X—X of Fig. 9, illustrating the construction of one side of the provision shelf and its method of mounting;

Fig. 11 is a view in section taken along line XI—XI of Fig. 9 showing the construction of the provision shelf and the method of mounting the same on a movable support frame;

Fig. 12 is a view in section taken on line XII—XII of Fig. 9 showing the manner in which a stationary support frame is mounted on the side wall of the refrigerator and the forward mounting or the movable support frame;

Fig. 13 is a view taken on line XIII—XIII of Fig. 9 showing the movable support frame and the stationary support frame and the method of mounting the one on the other;

Fig. 14 is a fragmentary view in side elevation of one side of the stationary and movable support frame showing the method of mounting of the movable frame on the stationary frame;

Fig. 15 is a view in section of one side of the movable and stationary support frames looking in the direction of arrows XV—XV of Fig. 14;

Fig. 16 is a fragmentary view in side elevation showing one side of the movable support frame and the provision shelf and the method whereby the rear end of the provision shelf is mounted on the movable support frame; and

Fig. 17 is a view in section taken on line XVII—XVII of Fig. 16 showing the method of mounting the rear end of the provision shelf on the movable support frame.

Throughout the drawings and the specification, similar reference characters indicate like parts.

With reference to Fig. 1 of the drawings, a refrigerator is shown having a plurality of provision shelves 1 mounted, one above the other and in parallel relation in the provision compartment thereof. The shelves are supported at their forward ends on nubbins or projections 2 formed on the refrigerator side walls and at their rear ends in niches or recesses 3 formed in the back wall.

In this application, two forms of shelf, embodying the invention, are illustrated, one form being illustrated in Figs. 2 to 8, inclusive, and

the other form being shown in Figs. 9 to 17, inclusive.

In the form illustrated in Figs. 2 to 8, inclusive, the provision shelf 4 is adapted to be extended more than half its length through the door opening of the refrigerator. Extension of this order is sufficient for the ordinary household refrigerator of average depth, that is, as measured from front to back.

The form illustrated in Figs. 9 to 17, inclusive, is designed to give full extension of the provision shelf through the door opening. Full extension provision shelves could obviously be used in the aforementioned household refrigerator, but are more advantageous with refrigerators requiring close spacing of the shelves, and where the compartments are of more than average depth as measured from front to back.

In the drawings both forms of the invention are illustrated in conjunction with refrigerators of the same depth in order to show by comparison the actual extensions that each provides. However, it is to be understood that the relative advantages of one over the other for the particular applications referred to above, are appreciated and contemplated herein.

The extension or roll-away shelf illustrated in Figs. 2 to 8, inclusive, comprises two major parts, the traveling provision shelf or frame 4 and the support frame 5. The support frame includes a back rail or connecting bar 6 and side rails 7 and 8. The rails may be made from a single or continuous piece of rod of either stainless steel or rustless iron, bent in the form of a U conforming substantially to the contour of the refrigerator compartment in plan. The side rails may be formed with upwardly extending bends 8' of somewhat inverted U shape, at their forward ends, to accommodate the nubbins or projections 2 on which the forward ends of the support frame side rails are mounted. The back rail of the support frame has rearwardly extending loops 9 formed therein that extend into recesses or recessed nubbles, knobs, or bosses 3 of the rear wall of the refrigerator compartment. When the provision shelf is wholly within the compartment, the bottom ledges of the recesses support the rear end of the support frame, and when extended, as in Fig. 2, the upper ledges prevent the rear end thereof from tilting upwardly.

As shown in Figs. 2, 4 and 7, the forward end of the support frame side rails, including the lower ends of the inverted U-bends 8' are bent inwardly, that is away from the adjacent side walls. At the extreme forward ends of the side rails, short trunnions 10 of L-shape are formed to accommodate wheels or rollers 11 having concave rims. The trunnions may constitute an integral part of the support frame side rails, or they may be separately fabricated and welded thereto. The purpose and function of these rollers will be described hereinafter.

The provision shelf or frame 4 may be designed in numerous ways, however, the type illustrated is preferred. The provision shelf, as shown, comprises side rails 12, connected fore and aft by members 13. The side rails 12 and members 13 may be made from round rod, of stainless steel or rustless iron, as a single piece or unit.

The platform or floor of the shelf may be made up from rods 14, the opposite ends of which are welded or otherwise secured to the front and rear members 13, and rods 15. Rods 15 are purposely made longer than rods 14, so that the ends thereof may be bent upwardly to form posts 16 to which a rear fence rail 17 and a front fence rail 18 may be attached. Fence rail 17 extends only across the back of the provision shelf, while the front rail extends across the front and along the sides to approximately the rear ends of the side rails 12, to which it is secured. In order to rigidify the provision shelf floor, a brace rod 19 is attached, as by spot welding, to the undersides of rods 14 and 15, the rods running crosswise thereof and terminating short of the side rails 12.

The fence rails 17 and 18 prevent articles placed on the shelf floor from slipping or falling off the same as the shelf is moved to or from the refrigerator compartment.

As may be seen in Figs. 2, 5 and 7, the side rails 12 of the provision shelf are disposed on the concave rims of rollers or wheels 11, and move back and forth thereon as the shelf is moved to or from the refrigerator compartment. As is apparent from Fig. 7, the rollers 11 are disposed at such a distance below side rails 7 and 8 that the side rails 12 lie in substantially the same horizontal plane as contains the side rails 7 and 8 of the support frame. For this reason, the distance between the side rails 12 of the provision shelf is made less than the distance between side rails 7 and 8, so that there may be adequate clearance therebetween for easy operation.

The rear corners of the provision shelf 4 are provided with a pair of rollers or wheels 20, 21 for supporting the rear end of the provision shelf on the side rails 7 and 8 of the support frame. As shown, the upper rollers 20 are disposed slightly forward of the lower rollers 21 and ride on the top side of the support frame side rails. The lower rollers 21 are disposed under the support frame side rails, so that as the provision shelf approaches its extended position, as in Fig. 2, the lower rollers bear on the underside of the support frame side rails and prevent tipping of the provision shelf about rollers 11.

As may be seen in Fig. 6, the upper rollers 20 are mounted on the side rails 12 by means of trunnions 22 of somewhat L-shape so that the side rails 12 at the rear end of the provision shelf will lie in substantially the same plane as the support frame side rails. The lower rollers 21 are mounted on trunnions 23 of somewhat L-shape, so that the rollers will be disposed slightly below the side rails 12. It will be noted that the trunnions 22 and 23 together form in the nature of a U-shape structure which supports the rollers 21 and 22 in a staggered relationship with respect to each other. Each of the rollers 20 and 21 may have concave rims so that these rollers will hug the support frame side rails as the provision shelf is moved to and from the refrigerator compartment.

In practice, the support frame side rails 7 and 8 may be made or formed slightly out of parallel so as to cause them to normally converge towards the side walls of the refrigerator. To bring the support frame side rails into parallelism with each other, the forward ends thereof may be provided with triangular shaped plates 24 which are pivotally mounted on the support frame side rails by means of screws 25.

When the plates 24 are in the position shown in Figs. 2, 4, and 7, one side thereof abuts the adjacent side wall of the refrigerator, thereby springing the support rails 7 and 8 into parallelism. The inherent resiliency of the rear corners of the support frame therefore holds the forward ends of the rails in snug engagement with

the side walls of the refrigerator so that as the provision shelf is moved back and forth the side rails will not spring out of position and cause binding between the rollers 20, 21 and the support frame guide rails, and the side rails 12 of the provision shelf and support rollers 11.

The plates 24 also overhang the side rails 12 of the provision shelf, so that the shelf cannot be tilted upwardly, in operation, to thereby accidentally disengage the shelf side rails from the rollers 11.

Since the platform or floor of the provision shelf lies in substantially the same plane as contains the side rails 7 and 8 and the back rail 6 of the support frame, the extension shelf described above requires a minimum of vertical space in the compartment. For this reason, shelves of this character may be applied to refrigerator compartments without detracting from or impairing the storage capacity thereof.

Provision shelf 4 may be extended or moved out of the refrigerator compartment, as seen in Fig. 2, until rollers 20 engage loops 8'. It is therefore apparent that loops 8' serve a double function, i. e., as means to support the forward end of the support frame on the side walls of the refrigerator compartment and also as stops for limiting the forward movement of the provision shelf.

The full extension type shelf illustrated in Figs. 9 to 17 inclusive, comprises in general three main parts, a stationary support frame 5, such as described in connection with Figs. 2 to 8 inclusive, an intermediate support frame 27 movably mounted on support frame 5, and a provision shelf 28 movably supported on the movable support frame. In other words, the framework 27—28 of the embodiment of Figs. 9 to 17 inclusive, takes the place of the framework or shelf 4 of the embodiment of Figs. 2 to 8, inclusive, and thus, the former may be broadly designated as a traveling provision shelf or frame.

Since the stationary support frame 5 has been described in detail previously herein, similar and corresponding parts will be given the same reference characters in the several views without further describing the same in detail.

The movable or intermediate support frame 27 comprises side rails 29 connected at their rear ends by a member 30. Rails 29 and members 30 may be made from a single piece of round rod of stainless steel or rustless iron, bent in the form of a U, as shown. The rear ends of the side rails 29 may be provided with trunnions 31 and 32 of L-shape, welded or otherwise secured thereto. As may be seen in Figs. 13, 14 and 15, the trunnions are spaced longitudinally of the rails and carry rollers or wheels 33 and 34 having concave rims to fit the contour of side rails 7 and 8 of the stationary support frame. Since these rollers are disposed above and below, and to one side of the side rails 6 and 7 in the manner indicated in the drawings, the rails 29 will lie in substantially the same plane as rails 6 and 7, and will be spaced therefrom, horizontally, to permit free relative movement therebetween. Side rails 29 also are supported forwardly of the wheels or rollers 32 and 33 by the rollers 11 carried at the forward ends of the side rails 7 and 8 of the stationary support frame (see Fig. 12).

The forward ends of the side rails 29 of the movable support frame, may be provided with L-shaped trunnions 35 on which wheels or rollers 36 having concave rims, are mounted to support the forward end of provision shelf 28.

In order to limit the extent of forward travel of the support frame 27, stops 37 are attached to the side rails 7 and 8 of the stationary support frame against which rollers 31 run when the movable frame is extended to the position shown in Fig. 9.

From the above, it is apparent that the movable or intermediate support frame 27 and the stationary support frame 5 are mounted relative to each other and to the refrigerator side walls in substantially the same manner as the provision shelf 4 and support frame 5 of Figs. 2 to 8 inclusive, are mounted.

The provision shelf 28 is of substantially the same construction as shelf 4, and comprises side rails 38 connected fore and aft by cross rods 39 and having a platform or floor made up from rods 14' welded to the cross rods and rods 15' also welded thereto but having their ends bent upwardly to form posts 16' to which the fence rails 17' and 18' are attached. As in the case of provision shelf 4, the platform or floor rods above described may be braced by means of a transverse rod 19' welded or otherwise secured to the bottom sides of the cross rods.

The rear end of the provision shelf, is provided with trunnions 40 attached to the side rails 38 on which rollers 41 are mounted to support the rear end of the shelf on the side rails 29 of the movable support frame 27. Rollers 41 may be of yieldable material or of metal, as desired.

To prevent upward tilting of the rear end of the provision shelf about rollers 36 as fulcrums, a retaining rail 42 is attached to each of the side rails 29. The rear ends of these retaining rails are bent downwardly and welded to rails 29 slightly ahead of trunnions 31 (see Fig. 9) and the forward ends are bent downwardly and welded to rails 29 at points ahead of the middle thereof. As may be seen in Figs. 11, 16 and 17, rollers 41 operate between the side rails 29 and the retaining rails 42. The retaining rails 42 and the side rails 29 form in effect a closed loop, the ends of which serve as stops to limit the forward and reverse movement of the provision shelf.

In order to prevent accidental upward tilting of the provision shelf, in the operation of returning the same to the refrigerator compartment, clips 43 are removably secured, as with thumb screws 44 to the forward ends of side rails 29. These clips overhang side rails 38 at points above and slightly in advance of support rollers 36.

In the operation of the shelf arrangement shown in Figs. 9 to 17 inclusive, assuming the provision shelf to be within the compartment, the forward fence rail 18' is grasped and the shelf pulled forward. The shelf will move forward on rollers 41 and 36 until rollers 41 engage the forward ends of the loop constituted by rails 42 and 29. Continued pulling of the shelf causes shelf and support frame to move forward together on side rails 7 and 8, and rollers 11 of the stationary support frame until rollers 33 engage stops 37, at which time the provision shelf is fully extended as seen in Fig. 9. In returning the provision shelf to the compartment, the relative operation of the three main parts of the shelf structure is the same as above described, except the direction of motion thereof is reversed.

In both forms of shelf, the main parts of each lie in substantially the same horizontal plane, the stationary and movable support frames are open at the front, and the side rails of each are spaced

sufficiently to give ample operating clearances, and easy relative movement between them.

The shelving of either form may be removed easily from the compartment and taken apart for cleaning. In the form shown in Figs. 2 to 8 inclusive, after detaching plates 24 the shelf and its support frame may be removed as a unit by merely raising the forward ends thereof to disengage loops 8' from the nubbins 2 and then pulling the shelf and frame out of the compartment. To detach the shelf from the frame, the shelf is tilted upwardly at the front and rolled backwards until the rollers 20 and 21 are disengaged from the support frame side rails.

In the form shown in Figs. 9 to 17 inclusive, after removal of plates 24, the three major parts of the shelving are removed as a unit by merely tilting the forward ends thereof upwardly to disengage loops 8' from the side wall nubbins 2. The shelving may then be removed through the door opening of the refrigerator. The movable support frame 27 and shelf 28 may then be removed from the support frame 5 as a unit in the same manner as the shelf 4, of the type shown in Figs. 2 to 8 inclusive, is removed from the support frame 5. Having detached the support frame 5 from the movable support frame 27, the shelf 28 may be removed from support frame 27 by merely turning or removing clip 43 and tilting the shelf upwardly at its forward end and at the same time turning it slightly sidewise so as to disengage one of the other of rollers 41 from between its accompanying rail 29 and guard rail 42.

While two forms of the invention have been shown and described herein, it will be apparent to those skilled in this particular art that various modifications and changes may be made therein without departing either from the spirit or the scope of the invention. It is desired, therefore, that only such limitations shall be placed on the invention as are imposed by the prior art and the appended claims.

What I claim as new and desire to secure by Letters Patent is:—

1. A sliding shelf for refrigerator compartments including a support frame consisting of a back rail and side rails adapted for mounting on the walls of a refrigerator compartment, a provision shelf having a pair of rollers at each of its rear corners, a roller of each pair running on top of its accompanying side rail, and the other roller of each pair running under its accompanying side rail, and a roller at the forward end of each side rail for supporting the shelf as it is moved into and out of the compartment, there being an upwardly extending loop adjacent a forward end of each side rail which serves both as means for hanging the rails on projections on the compartment side walls and as a stop for limiting outward movement of the shelf.

2. In a sliding shelf structure, the combination of a support frame having back and side rails for mounting on the walls of a compartment, a traveling frame having a pair of rollers adjacent each of its rear corners, a roller of each pair being mounted to run on top of an adjacent side rail of said support frame, and the other roller of each pair being mounted for running underneath said adjacent side rail, said support frame having a roller adjacent its forward end, said rollers movably supporting said traveling frame, so that said frame may be moved into and out of the compartment, means mounted on the side rails of said support frame adjacent the front thereof, said means co-operating with sides of said traveling frame for normally preventing an upward tilt of said frame, said last-mentioned means permitting an upward tilt of said traveling frame when it is to be removed from said support frame.

3. In a sliding shelf structure of wire-like construction, the combination of a support frame formed from wire and having back and side rails for mounting on the walls of a compartment, a traveling member formed from wire and having a pair of rollers adjacent its rear corners, said traveling member having suitable side rails, a roller of each pair being mounted for running on top of an adjacent side rail of said support frame, the other roller of each pair being mounted for running underneath said side rail of said support frame, so that said traveling member may be moved into and out of the compartment, stop means for limiting outward movement of said traveling member, inwardly projecting fingers mounted adjacent forward ends of the side rails of said support frame, said fingers overhanging adjacent side rails of said traveling member for preventing an upward tilt of said member.

4. In a sliding shelf structure, the combination of a support frame including side rails adapted to lie along the side of a compartment and being connected at one end thereof by a cross bar, a traveling frame having rollers adjacent one end thereof for running on the side rails of said support frame, means adjacent the front end of said support frame for limiting outward movement of said traveling frame on said support frame, said support frame having rollers adjacent the front thereof for running on said traveling frame, means co-operating with said last-mentioned rollers for preventing an upward tilt of said traveling frame with respect to said support frame, a traveling shelf having side rails and rollers mounted thereon for running on side rails of said traveling frame, rollers mounted on said traveling frame adjacent the front end thereof for running on the side rails of said traveling shelf, and means for limiting outward movement of said traveling frame with respect to said support frame and of said traveling shelf with respect to said traveling frame.

5. In a sliding shelf structure, the combination of a shelf support member and a shelf member movably mounted thereon, said support member and said shelf having suitable side rails, a pair of rollers mounted on said shelf member and having a staggered relationship with respect to each other, one of said rollers being mounted for running on one side of a side rail of said support member, the other roller of said pair being mounted for running on an opposite side of said side rail, said rollers having a staggered relationship with respect to each other, so that said shelf member may be readily removed from and remounted on said support member when pushed beyond the side rails of said support member.

6. In a sliding shelf structure, the combination of a shelf support member and a shelf member movably mounted thereon, said shelf member and said shelf support member having suitable side rails and suitable rear connecting rails, a pair of rollers mounted on at least one of the side rails of said shelf member, one of said rollers being mounted for running on top of an adjacent side rail of said support member, the other roller of said pair being mounted for running underneath said side rail, said rollers having a staggered relationship with respect to each other, so that said shelf may be readily

removed from and remounted on said side rail of said support member when pushed beyond the length of said side rail, at least one roller mounted on a side rail of said support member for running on a side rail of said shelf member, so that said shelf member may be readily moved with respect to said support member.

7. In a sliding shelf structure, the combination of a shelf support member and a shelf member movably mounted thereon, said support member and said shelf member having suitable side rails, and means mounted on the side rails of both of said members for slidably supporting one with respect to the other, and means pivotally mounted on the side rails of said support member and co-operating with the side rails of said shelf member for preventing an upward tilt of said shelf member with respect to said support member and for permitting a removal of said shelf member from said support member.

8. In a sliding shelf structure, the combination of an assembly which includes a support member and a shelf member movably mounted thereon, said support member and said shelf member having suitable side rails, means mounted on said assembly for slidably supporting one member with respect to the other, means on said support member for pressing the side rails thereof toward side walls of a compartment, and means mounted on said assembly and co-operating with the walls of the compartment for spacing the side rails of said support member with respect thereto, said last-mentioned means having an extending portion for preventing one of said members from tilting with respect to the other of said members.

9. In a compartment having support projections incorporated in its wall make-up, the support projections of a rear wall of the compartment having recesses therein, and the support projections of side walls of the compartment having shoulders thereon, the combination of a movable shelf structure, said structure including a support frame and a shelf movably mounted thereon, said support frame having side members and a rear bar connecting said side members, said rear bar having rearwardly extending loops adapted to fit within the recessed support projections of the rear wall, so that said support frame may be non-tiltably mounted in the compartment adjacent the rear thereof, the side rails of said support structure having extending bends for co-operating with and resting upon the shouldered support projections of the compartment side walls.

10. In a compartment having support projections incorporated in its wall make-up, the support projections of a rear wall of the compartment having recesses therein, the support projections of side walls of the compartment having shoulders thereon, the combination of a sliding shelf structure, said structure including a support frame and a shelf slidably mounted thereon, said support frame having side members and a rear bar connecting said side members, said rear bar having rearwardly extending loops adapted to fit within the recessed support projections of the compartment rear wall, so that said support frame will be non-tiltably mounted in the compartment adjacent the rear end thereof, the side rails of said support frame having upwardly extending bends adapted to co-operate with the shouldered support projections of the compartment side walls, means mounted on said sliding shelf structure for slidably supporting said shelf with respect to said support frame, the parts of said structure having such a relationship that the upward bends of the side rails of said support frame will act as stops for limiting outward movement of said shelf with respect to said support frame.

11. In a sliding shelf structure of wire-like construction, the combination of an assembly which includes a support member and a shelf member movably mounted thereon, said support member and shelf member being formed of wire and having suitable side rails, means on said assembly for slidably supporting one member with respect to the other, means on said support member for pressing the side rails thereof toward side walls of a compartment, a detachable plate means mounted on said assembly and cooperating with the walls of the compartment for spacing the side rails of said support member with respect thereto.

12. In a sliding shelf structure of wire-like construction, the combination of an assembly which includes a support member and a shelf member movably mounted thereon, said support member and shelf member having suitable side rails, means on said assembly for slidably supporting one member with respect to the other, means on said support member for pressing the side rails thereof toward side walls of a compartment, triangular-shaped plate means mounted on the side rails of said support member, base portions of said triangular-shaped plate means being adapted to abut walls of the compartment and space the side rails of said support member with respect thereto, and apices of said triangular plate means being adapted to extend inwardly of the compartment for preventing said shelf member from tilting with respect to said support member.

13. In a sliding shelf structure, the combination of a shelf support member and a shelf member mounted thereon, said support member and said shelf member having suitable side rails and cross rails connecting their respective side rails, means slidably mounting said shelf member upon said support member, said means including a guide means projecting from a side rail of one of said members and being operatively associated with an adjacent side rail of the other of said members, and a guard rail extending from said last-mentioned side rail for maintaining said guide means in a proper relationship with respect thereto during the operation of said shelf structure.

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