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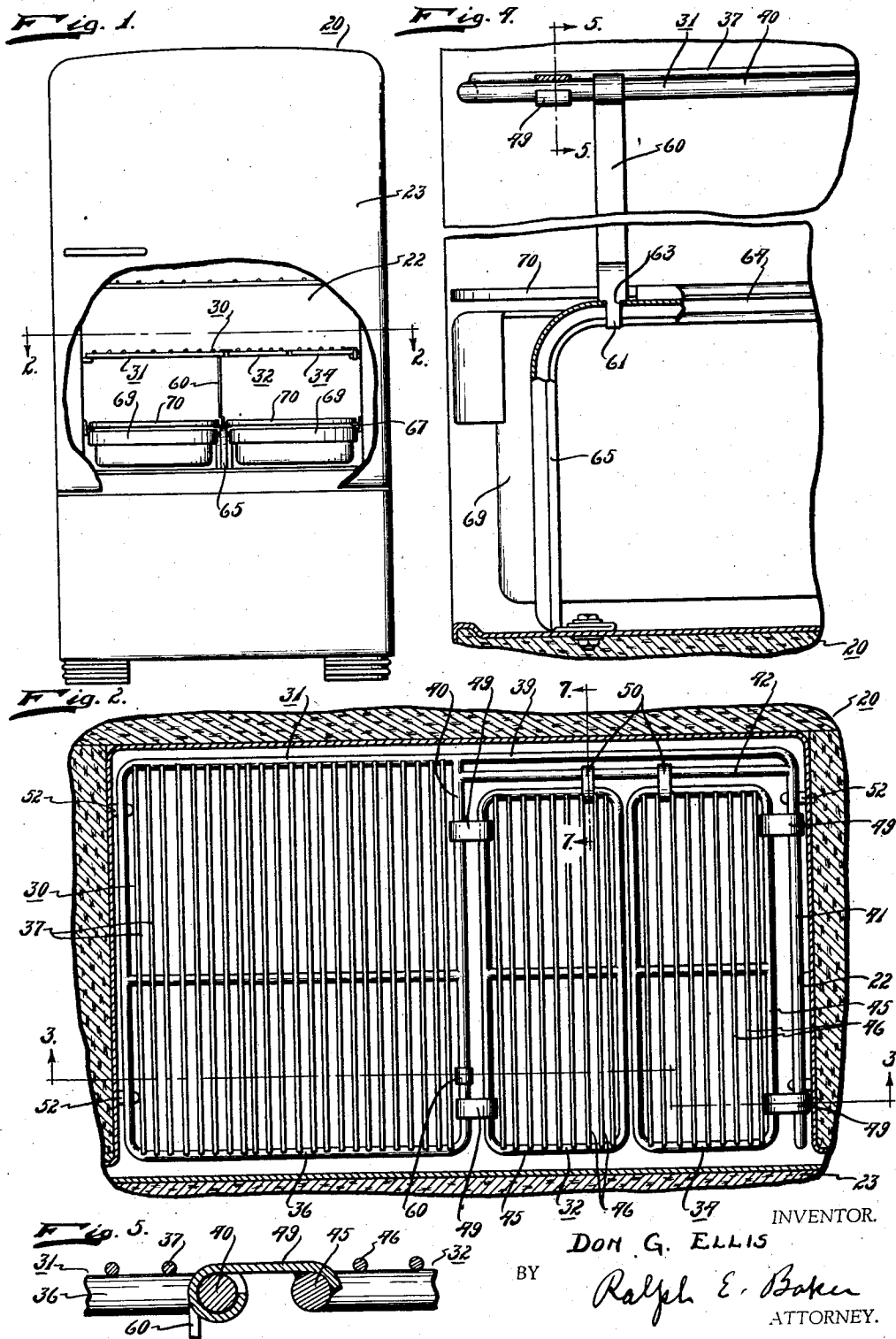
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2,262,578

REFRIGERATING APPARATUS

Filed Oct. 3, 1940

2 Sheets-Sheet 1



INVENTOR.

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Nov. 11, 1941.

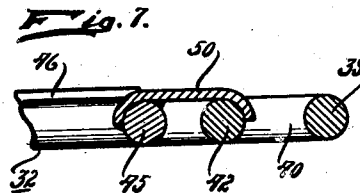
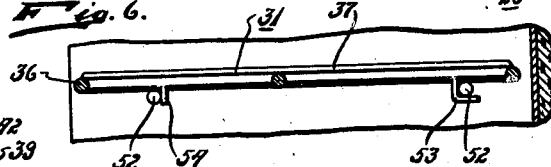
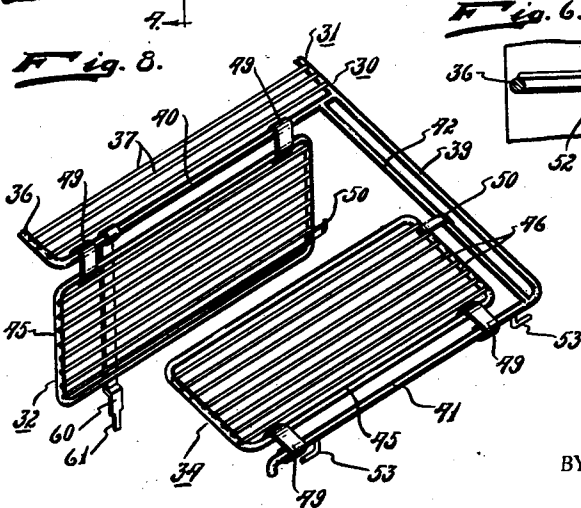
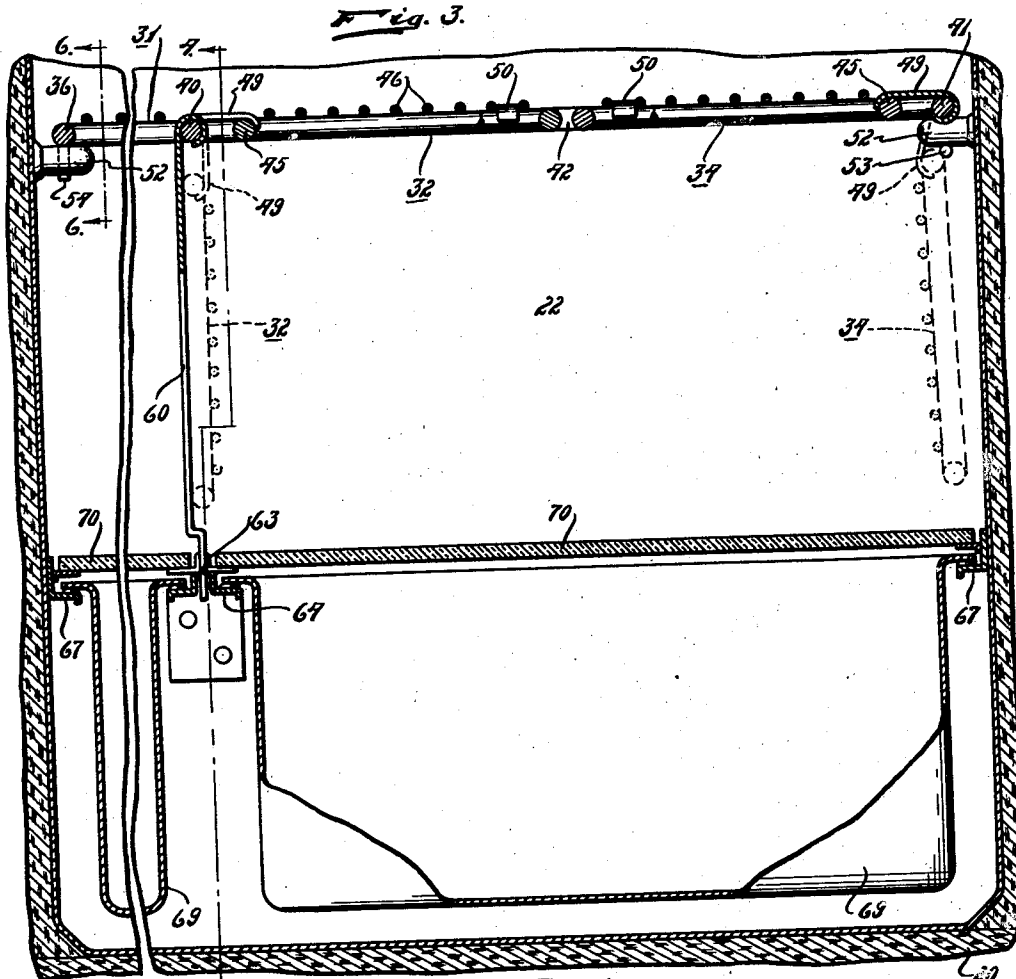
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REFRIGERATING APPARATUS

Filed Oct. 3, 1940

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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REFRIGERATING APPARATUS

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Application October 3, 1940, Serial No. 359,522

8 Claims. (Cl. 211-153)

The present invention pertains to a refrigerating apparatus and more particularly to shelves used in refrigerator cabinets.

It is an object of the present invention to provide a refrigerator cabinet with shelf supporting surface which may be increased or decreased, at will, in accordance with the size or shape of the articles or food that is to be stored in the food storage compartment of the cabinet.

It is another object of the present invention to provide a shelf having complementary swingable portions which may be swung into horizontal position to increase the shelf supporting surface, or swing into a vertical position to permit a greater vertical height for the storage of tall containers and the like on the shelf below.

It is another object of the present invention to arrange the shelf on supporting lugs within the food storage compartment against vertical or horizontal movement and provide supporting means to prevent sagging of the shelf.

The invention itself, however, both as to its organization, and its method of operation together with additional objects and advantages thereof, will best be understood from the following description of specific embodiments when read in conjunction with the accompanying drawings, in which:

Fig. 1 is a front elevational view of a refrigerator cabinet with parts broken away showing the invention embodied therein;

Fig. 2 is a top plan view of the invention taken along line 2-2 of Fig. 1 showing the cabinet in section;

Fig. 3 is a fragmentary cross sectional view taken along line 3-3 of Fig. 2;

Fig. 4 is a fragmentary cross sectional view taken along line 4-4 of Fig. 3;

Fig. 5 is a fragmentary cross sectional view taken along line 5-5 of Fig. 4;

Fig. 6 is a fragmentary cross sectional view taken along line 6-6 of Fig. 3;

Fig. 7 is a fragmentary cross sectional view taken along line 7-7 of Fig. 2; and

Fig. 8 is a fragmentary perspective view of the invention.

Referring to the drawings there is shown a refrigerator cabinet 20 of the household type having insulated walls forming a food storage compartment 22. The storage compartment 22 is cooled by a suitable cooling unit (not shown). Access to the cabinet is through an opening closed by a swingably mounted door 23.

The storage compartment 22 is divided into a plurality of storage sections by vertically spaced horizontally disposed shelves to provide a maximum shelf supporting surface. However the shelves are so spaced vertically that some provision must be made for storing and cooling articles and food that because of its size or shape cannot enter between the normally arranged

shelf. To this end there is arranged a shelf 30 which may remain at all times within the food storage compartment having a portion of its supporting surface arranged to be moved into inoperative position to permit extra height for storage of tall articles on the shelf therebelow.

The shelf 30 comprises a stationary supporting section 31, and complementary swingable sections 32 and 34. The stationary shelf section 31 comprises a rectangular frame member 36 across which are secured parallel strands 37. The rear side 39 of frame member 36 extends beyond the side 40 of the frame member and bent to form an arm supporting section 41 in spaced parallel relation to side 40. A reinforcing rod member 42 extends between side 40 and arm 41 parallel to extension arm 39.

Each of the complementary shelf sections 32 and 34 includes a rectangular frame member 45 across which are secured parallel strands 46. Hinges 49 hingedly support the shelf 32 to the side 40 of the frame 36, and shelf 34 to the arm supporting section 41. The hinges 49 are formed of a strip having one end secured by weld or the like to frame 45 and its opposite end looped around the side 40 or arm 42. The looped portion of the hinge permits the shelves to be swung about its respective supporting arm 42 or side 41 as an axis, and also arranged to allow the hinge to be axially movable thereon.

The shelves 32 and 34 are supportingly held in horizontal position by stops 50 which are welded to frame member 45 and project outwardly to engage over the reinforcing rod member 42. The stops 50 are formed so as to engageably lock over the member 42 to prevent forward movement of the complementary shelves when in horizontal planular alignment with the shelf 31. Should it be desired that either shelf 32 or 34 be dropped to provide additional height clearance for storage of articles on shelf 30 the shelf is first swung upwardly then pulled forwardly along the axis of side 40 or arm 41 until the stop 50 clears the rod 42 permitting the shelf to swing downwardly, coming to rest in a depending vertical position, as shown in Fig. 8 and in dotted lines in Fig. 3. The depending shelf is moved axially inwardly into the compartment to allow closing of door 23.

The shelf 30 is supported on pins 52 provided on the side walls of the storage compartment 20. The shelf 30 is locked to the pins 52 by means of hooks 53 secured to the underside of the frame member of the shelf. In placing the shelf within the compartment the shelf is inclined downwardly towards its rear so that the hooks 53 may engage beneath the pin 52 with the frame member resting on the pins. The forward section is dropped to rest on the pins 52 with the stud 54 carried by frame 36 engaging behind a respective pin 52. The forward hook 53 beneath arm 41

is locked beneath a respective pin 52 by flexing inwardly the arm 41, with the shelf 34 dropped into a vertical position, until the hook is aligned to slide beneath the pin, and the arm 41 rests on the pin 52. As the hooks 53 on arm 41 (see Fig. 8) are oppositely positioned, the stationary shelf 31 is lockingly held against either lateral or vertical movement.

Attached to the side 40 is a downwardly extending brace 60 having a reduced end 61 receivable in a slot 63 formed in guide rail 64. The end 61 locking in the recess 63 permits the shoulder of the brace 60 to rest on the back of rail 64 and give vertical support to the shelf 30 against sagging. The rail 64 is secured to the rear wall of the compartment 22 and by its leg 65 to the bottom wall of the compartment. The rail 64 is positioned intermediate the side walls of the compartment and serves as a tractable guide and support with the complementary rails 67 secured to a respective side wall, for pans 69 and the imperforate shelves 70. The imperforate shelf 70 also by its close proximity to a respective pan 69 serves as a cover thereto as well as retarding the air circulation therebelow to provide a high humidity compartment. The pan 69 and shelf 70 beneath the shelves 32 and 34 may be removed and stacked upon adjacent shelf 70 where additional height is required.

While I have described the preferred form of my invention in detail, I do not wish to limit myself to the precise details as shown, but wish to avail myself of such variations and modifications as may come within the scope of the appended claims.

I claim:

1. A shelf for a refrigerator cabinet comprising a fixedly supported section having an open area in its supporting surface, a complementary shelf positioned in said area, hinge members connecting said complementary shelf to an edge of said fixedly supported section, means for aligning and locking said complementary shelf in surface supporting relation with said fixedly supported section, and said hinge member axially movable along said edge to disengage said means permitting said complementary shelf to be swung into a vertical depending position to provide an open area in said fixedly supported section.

2. A shelf for a refrigerator cabinet comprising a fixedly supported section having an open area in its supporting surface, complementary shelves positioned in said opening, hinge members connecting said complementary shelves to a respective adjacent edge of said fixedly supported section, means for aligning and locking said complementary shelves in surface supporting relation with said fixedly supported section, said hinge members axially movable along their respective edge to disengage said means permitting said complementary shelves to be swung into vertical depending positions to provide an open area in said fixedly supported section.

3. A shelf for a refrigerator cabinet comprising a stationary supporting section having a spaced parallel supporting arm joined thereto by a transverse connecting member, a pair of shelves positioned in the area formed between said stationary section and said supporting arm, hinge members for swingably mounting one of said shelves to an edge of said stationary section and other of said shelf to said supporting arm, means for maintaining each of said swingable shelves in horizontal alignment with said stationary section, and said hinge members axially movable for

disengaging said means permitting said shelves to be swung to a depending vertical position.

4. A shelf for a refrigerator cabinet comprising a stationary supporting section having a spaced parallel supporting arm joined thereto by a transverse connecting member, a shelf positioned in the area formed between said supporting arm and said stationary section, hinge members for swingably mounting said shelf to said supporting arm, a means for maintaining said shelf in horizontal alignment with said stationary section, and said hinge members axially movable for disengaging said means permitting said shelf to be swung to a depending vertical position.

5. A shelf for a refrigerator cabinet comprising a stationary supporting section having a spaced parallel supporting arm joined thereto by transverse connecting members, a shelf positioned in the area formed between said stationary section and said arm, hinge members for swingably mounting said shelf to said arm, a means carried by shelf engaging a transverse connecting member for horizontally supporting with said hinge members the shelf in horizontal alignment with said stationary section, and said hinge members axially movable along said arm for disengaging said means permitting said shelf to be swung to a depending vertical position.

6. A shelf for a refrigerator cabinet comprising a stationary supporting section having a spaced parallel supporting arm joined thereto by transverse connecting members, a pair of shelves positioned between said stationary section and said arm, hinge members for swingably mounting one shelf to an edge of said stationary section and the other to said arm, means carried by each of said shelves for engaging a transverse connecting member for horizontally supporting with said hinge members a respective shelf, said hinge members axially movable for disengaging said means permitting the respective shelf to be swung to a depending vertical position.

7. A shelf for a refrigerator including a stationary section and a swingable section forming complementary supporting surfaces, hinge members for swingably mounting said complementary section to an edge of said stationary section, an arm affixed to said complementary section to engage said stationary section and support said complementary section in horizontal position, said arm disengageable from said stationary section upon an upward swinging of the complementary section, said hinge members longitudinally movable along said edge permitting the clearance of said arm in swinging said complementary shelf section to a vertical depending position.

8. A shelf for a refrigerator including a stationary section and swingable sections forming complementary supporting surfaces, hinge members for swingably mounting each of said swingable sections to a respective edge of said stationary section, an arm affixed to each of said complementary sections to engage said stationary section and support the complementary sections in horizontal position, each arm disengageable from said stationary section upon an upward swinging of the respective complementary section, said hinge members longitudinally movable along said edge permitting the clearance of the arm in swinging a complementary shelf section to a vertical depending position.

DON G. ELLIS.