

April 13, 1965

J. A. WILLIS ET AL

3,178,249

REFRIGERATOR TRAY AND COVER SUPPORT

Filed June 21, 1962

4 Sheets-Sheet 1

FIG. 1.

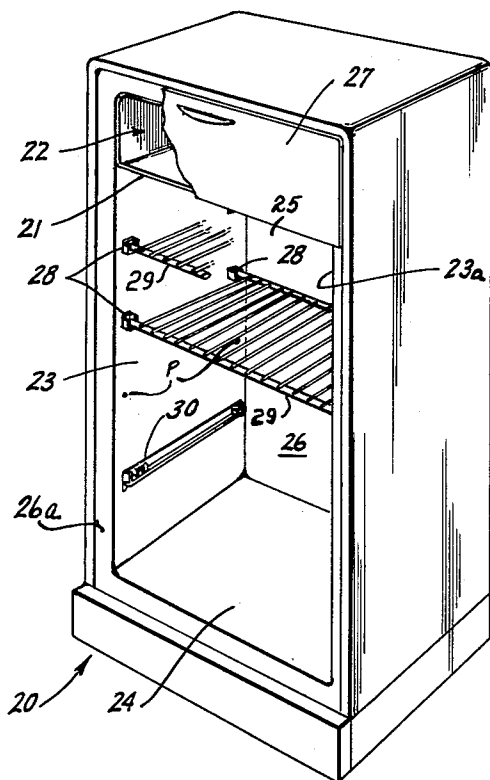


FIG. 3.

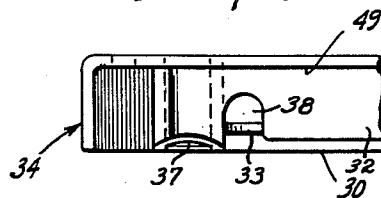


FIG. 4.

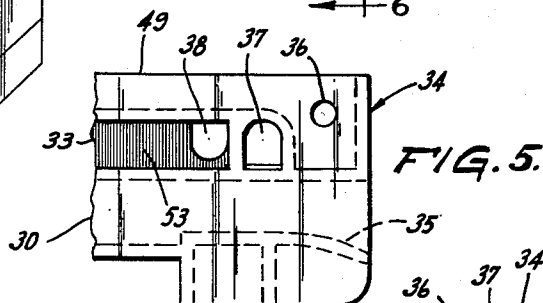
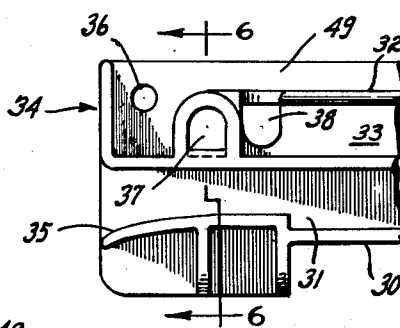


FIG. 5.

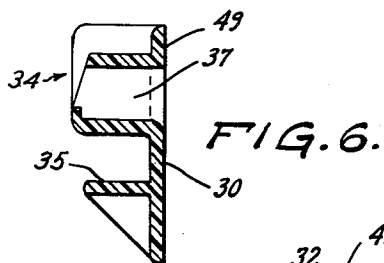


FIG. 6.

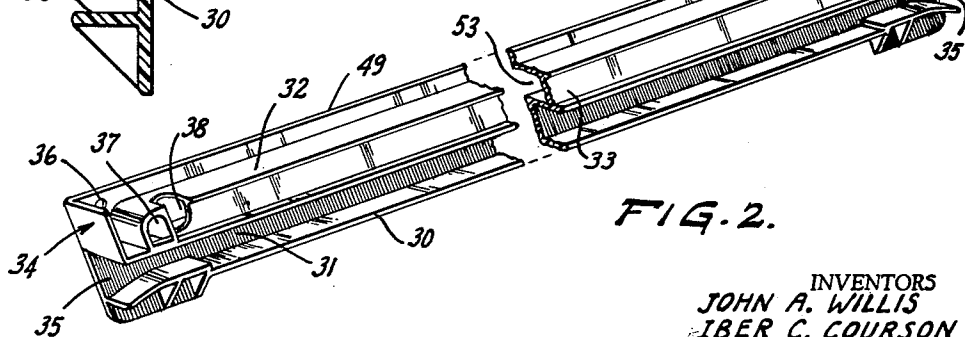


FIG. 2.

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FIG. 7.

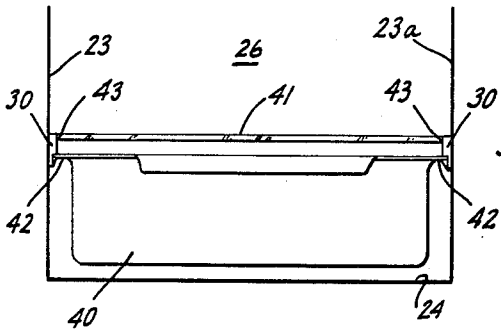


FIG. 8.

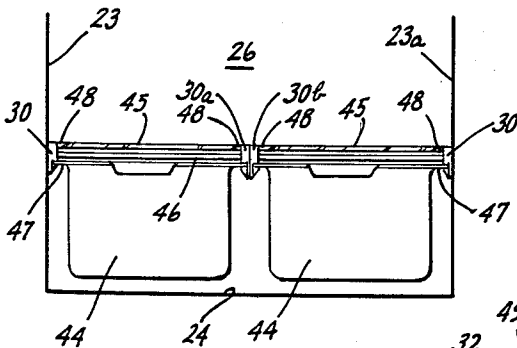


FIG. 9.

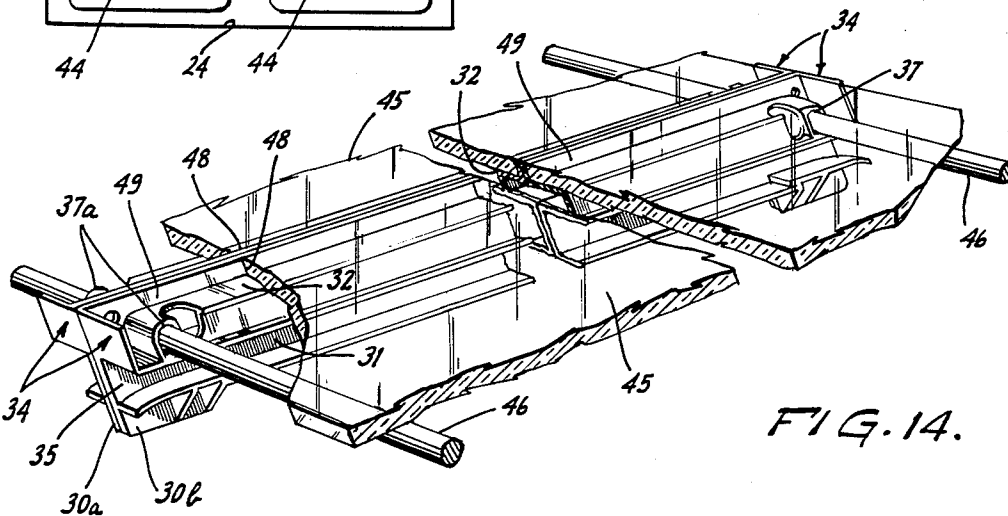
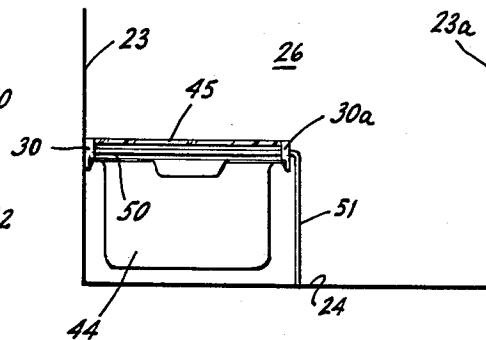


FIG. 14.

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FIG. 10.

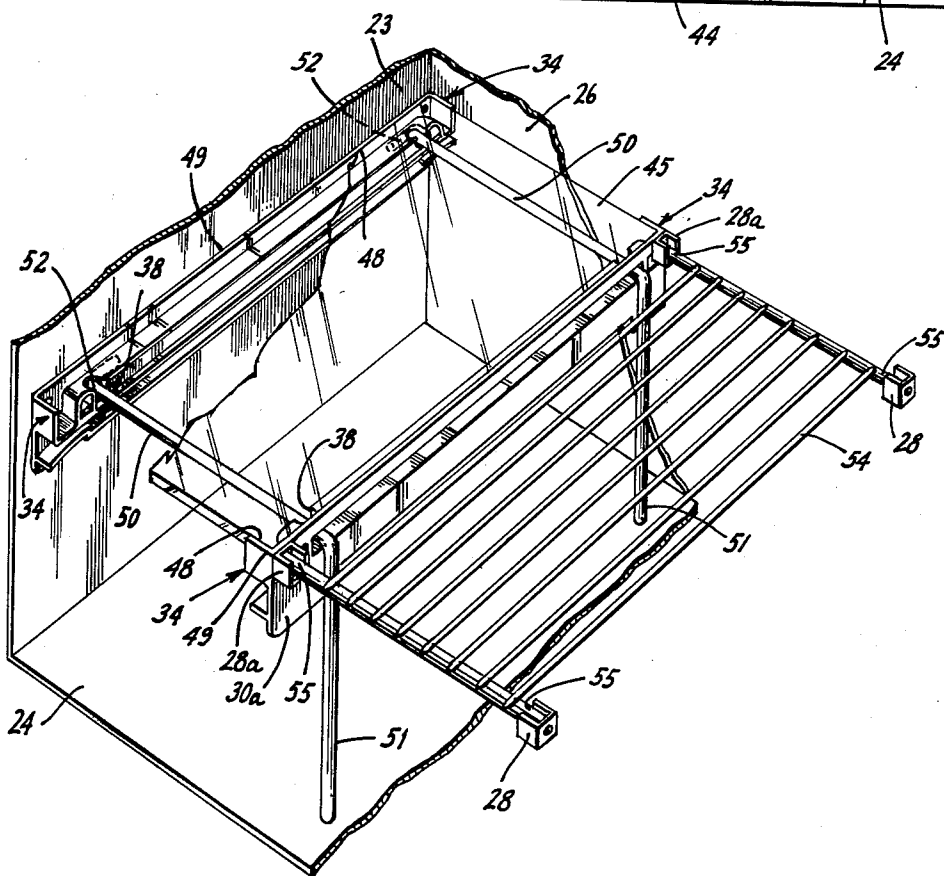
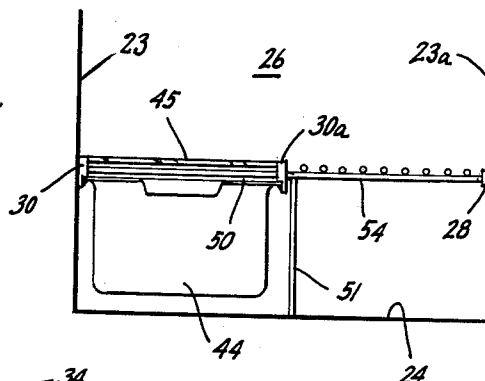


FIG. 15.

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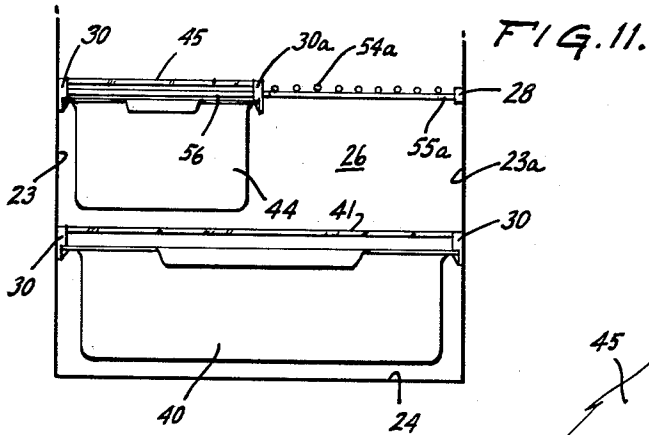
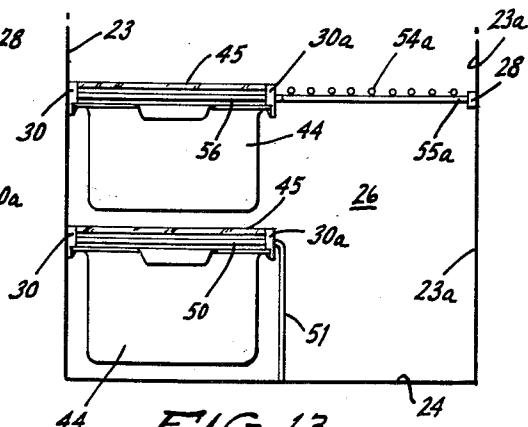
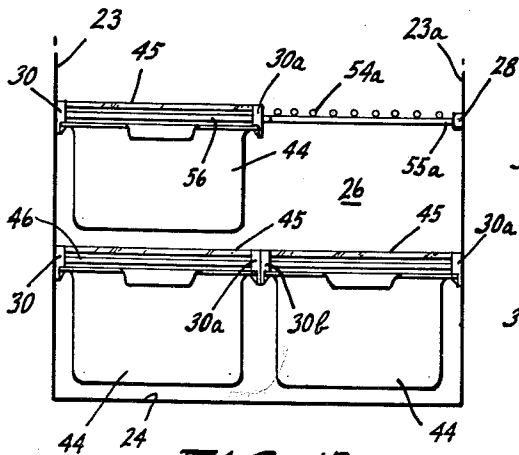
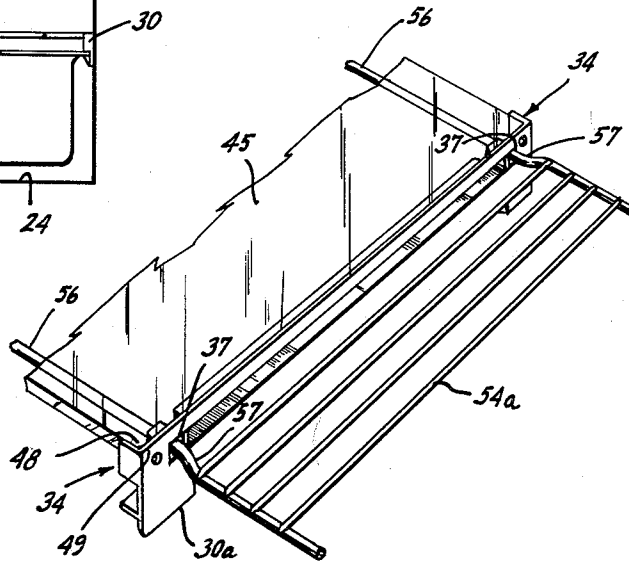


FIG. 16.



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Filed June 21, 1962, Ser. No. 204,095
4 Claims. (Cl. 312—350)

The present invention relates to cabinet structure, more particularly to cabinet shelf and storage arrangements. While of broader applicability the invention is specifically concerned with novel and improved means for supporting and storing foodstuff in domestic refrigerator cabinets.

According to prevailing custom, domestic refrigerator cabinets supplied by manufacturers to dealers for sale to prospective purchasers are equipped with a full complement of storage accessories including such items as shelves and food containers commonly known as hydrators or crisper pans. Generally, the number, size and type of these accessories or items are determined by the manufacturers, and the cabinets are constructed with permanently installed fixtures for supporting said accessories or items. This customary practice precludes a prospective purchaser from selecting among available storage accessories those which he would prefer or which he deems sufficient for his particular need, and it limits a dealer in his ability to satisfy such preferences or desires.

In the past manufacturers have attempted to minimize these drawbacks by providing refrigerator cabinets with arrangements designed to allow a user to change the position of shelves and pans with respect to each other within the storage area of a cabinet. However, these arrangements still do not enable a prospective purchaser to select storage accessories or items in the quantity and of the size and kind which such purchaser prefers.

Accordingly, it is a primary object of the invention to overcome the drawbacks noted above and to give to dealers greater latitude in completing the interior set-up of refrigerator cabinets so as to equip them with food supporting shelves and storing pans or containers which more nearly meet the demands of their customers. Toward realization of this general end, the invention provides novel constructional arrangements for domestic refrigerator cabinets whereby the dealer can custom-fit the storage facilities interiorly of a cabinet to satisfy the desire of a prospective purchaser.

Another and more specific object of the invention has to do with the provision of improved support means adapted to be easily installed within the interior of a domestic refrigerator cabinet. In accordance with this specific objective, the improved support means of the invention is constructed for combination with any one of a plurality of different storage accessories selectable from standardized stock, the support means and selected accessories being adapted for cooperative association in conformity with a definite plan chosen by the prospective purchaser.

The present invention is especially characterized by the fact that the support means is obtained through provision of support members which can be employed indiscriminately either as left hand members or as right hand members. In this manner the invention eliminates the necessity of providing sets of dissimilar left and right hand members thereby effecting significant reduction in manufacturing and assembly costs.

The nature of the invention, as well as its objectives and advantages, will be more fully understood from the following description based on the accompanying drawings, in which:

FIGURE 1 is a perspective view of a domestic refrigerator cabinet, the door of the cabinet being removed to reveal the cabinet interior and showing elements of a shelf

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arrangement embodying the principles of the present invention;

FIGURE 2 is an enlarged perspective view of a main member of the arrangement shown in FIGURE 1;

FIGURE 3 is an enlarged fragmentary view of the forward end portion of the member illustrated in FIGURE 2, as seen from the top;

FIGURE 4 is a view similar to FIGURE 3 illustrating the mentioned end of the member as seen from the side presented inwardly of the cabinet;

FIGURE 5 is a view similar to FIGURES 3 and 4 illustrating the mentioned end of the member as seen from the side facing outwardly of the cabinet;

FIGURE 6 is an enlarged cross-sectional detail taken substantially on line 6—6 of FIGURE 4;

FIGURES 7 to 13, inclusive, are schematic views illustrating various supporting and storing arrangements obtainable in accordance with the invention;

FIGURE 14 is a fragmentary view illustrating, in perspective and on an enlarged scale, certain details of the arrangement represented in FIGURE 8;

FIGURE 15 is a fragmentary view illustrating, in perspective and on an enlarged scale, the shelf and pan arrangement represented in FIGURE 10; and

FIGURE 16 is a fragmentary view illustrating, in perspective, and on an enlarged scale, certain details of the arrangement represented in FIGURE 11.

With more particular reference to the drawings, there is illustrated in FIGURE 1 a domestic refrigerator cabinet 20 of the kind having a horizontally disposed evaporator 21 which provides an upper freezing compartment 22 below which inner walls including confronting side walls 23 and 23a, bottom wall 24 and back wall 25 define a lower food storage compartment 26 provided with an open front 26a giving access to said compartment. An inner door 27 is provided for closing the freezing compartment 22 and, as is customary, an outer door (not shown) is employed to close the open front of the cabinet. Hangers 28 are arranged for suspending conventional shelves 29 within the storage compartment 26 and, in accordance with the present invention, combined guide track and support rail members identical to the one designated by reference character 30 are provided for supporting food containing means and cover means therefore, in the manner to be presently described.

In FIGURE 1 only one member 30 is shown. However, as the description progresses it will become evident that at least one other such member is required to support an associated food container and its cover. In the illustrated embodiment, each member 30 is in the form of an elongated molded plastic bar adapted to be mounted within the storage compartment 26 of the refrigerator cabinet 20 to extend in a generally horizontal position and in parallelism with respect to the inner side walls 23 and 23a of said compartment.

In particular accordance with the invention, the track-and-rail members 30 and the hanger members 28 are interchangeable and can selectively be supported through utilization of standardized mounting means arranged on the cabinet inner side walls 23 and 23a. For that purpose standard piercings, such as those represented at P in FIGURE 1, are provided on said side walls at pre-established locations to receive conventional securing elements, for example, sheet-metal screws (not shown) adapted to pass through either the members 30 or the hangers 28. Thus these members and hangers can be mounted in any given location within the storage compartment.

As clearly appears in FIGURE 2, the individual member 30 is formed with an elongated channel 31 and an elongated ledge 32, the ledge being disposed above and in spaced parallelism with respect to the channel. A web

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33 extends vertically between and is joined to the channel and ledge for cooperation therewith to provide a recess 53 for the purpose to be hereafter described. As seen in the drawing, each member 30 is of one-piece construction and terminates with two symmetrically identical end portions 34. The channel and ledge extend continuously between said end portions 34. These end portions, one of which is shown on an enlarged scale in FIGURES 3-6, are each provided with a flared guide section 35 leading into the channel 31, and has a set of three adjacent openings, namely a first opening 36 which serves primarily to receive fastening elements (not shown) for attaching the member 30 to the cabinet wall, and a second opening 37 and third opening 38 which serve to receive mounting crosspieces in the manner and for the purposes fully described below.

In particular accordance with the present invention, two or more members 30 are associated for mutual cooperation in providing various arrangements of shelves and other storage accessories within the cabinet compartment 26. Because of the two symmetrically identical end portions 34 of support member 30, the latter can selectively be mounted with either of said end portions lying adjacent the compartment open front 26a. Thus, such members can be employed either as a left or right hand support in providing the several possible storage accessory arrangements which will now be described with particular reference to schematic FIGURES 7-13.

FIGURE 7 represents an arrangement in which a so-called "full size" hydrator or crisper pan 40 and a so-called "full-size" covering plate 41 therefor, that is to say a pan and covering plate constructed to span substantially the full depth and width of the cabinet compartment 26, are supported in said compartment. In this arrangement a pair of members 30 are disposed to confront each other, one member being affixed to the side wall 23 and the other member being affixed to the other side wall 23a. In this manner, the channel 31 (FIGURE 2) of each of the members 30 provide confronting guide tracks in which oppositely directed lateral flanges 42 of the hydrator or crisper pan 40 are slidably seated, and the ledge 32 (FIGURE 2) of each of said members provide support rails on which marginal edge portions 43 of the covering plate 41 are nested so that said plate overlies the open top of said pan 40.

In FIGURE 8 there is represented an arrangement in which two so-called "half-size" hydrator or crisper pans 44 and two so-called "half-size" covering plates 45, that is to say pans and covering plates each constructed to span substantially the full depth of the compartment 26 but to occupy only about half the width of said compartment, are mounted in coplanar side-by-side relation between the side walls 23 and 23a. In this arrangement of FIGURE 8, two members 30 are affixed one on each of said side walls and two additional identical members designated at 30a and 30b, are disposed back-to-back and located between said members 30 so that one of said additional members (the member 30a) faces the member 30 on the cabinet wall 23 and the other of said additional members (the member 30b) confronts the member 30 on the cabinet wall 23a. The additional members 30a and 30b are suspended in their operative position by means of elongated rods 46, which, as clearly shown in FIGURE 14, pass through openings 37a in said members. These openings 37a are aligned with the aforesaid and identical openings 37 (FIGURE 2) which are provided in side members 30 and into which the opposite end portions of said rods 46 extend. In this manner, channels 31 in the mentioned back-to-back members 30a-30b cooperate with the corresponding channels of side members 30 to provide guide tracks in which oppositely directed lateral flanges 47 of the half-size pans 44 are slidably seated, and ledges 32 in said back-to-back members cooperate with the corresponding ledges in said side members to provide support rails on which marginal edge portions 48 of the covering plates

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45 are nested so that said plates overlie said pans 44. It will be noted that in an arrangement as illustrated in FIGURES 8 and 14, the covering plates 45 serve to maintain the back-to-back members 30a in their operative position because the marginal edge portions 48 of said plates bear upon upstanding ridges 49 which rise vertically from the support ledges on which said plates 45 are seated.

In FIGURES 9 and 10, there are represented cooperative arrangements which comprise only one half-size pan 44 and one half-size covering plate 45 within the cabinet compartment 26. In each of these arrangements of FIGURES 9 and 10, one member 30 is affixed to side wall 23 and one member 30a confronting said member 30 is suspended on support means which, as clearly seen in FIGURE 15, is provided by angularly bent rods 50. These rods pass through aligned openings 38 in said members 30 and 30a, one end portion of each rod 50 constituting a supporting leg 51 which rests on the bottom wall 24 of the refrigerator cabinet, the other end portion of each rod constituting a locking finger 52 which occupies recess 53 provided in the member 30 on the cabinet side wall 23. Because of this arrangement, the fingers 52 of the support rods 50 are held captive within said recess 53 (see FIGURE 5) and thus rigidly maintains said rods in their operative position as seen in FIGURE 15.

In the arrangement of FIGURE 10, provision is further made to support a half shelf 54. For that purpose, hangers 28 are mounted in the cabinet side wall 23a in the manner hereinabove mentioned and, as seen in FIGURE 15, similar hangers 28a are secured upon the supported bar member 30a to confront said hangers 28 so as to receive lateral projections 55 on said half shelf 54.

FIGURES 11, 12 and 13 represent different arrangements in which storage pans, covering plates and shelves are disposed in several tiers one above the other.

In FIGURE 11 the lower tier includes a full size pan 40 and a full size covering plate 41 therefor, said pan and plate being supported within the cabinet compartment 26 by track and rail members 30 mounted on a cabinet side wall 23 and 23a in the manner described with reference to FIGURE 7. In FIGURE 12 the lower tier includes two half-size pans 44 and two half-size covering plates 45 therefor, said pans 44 and plates 45 being mounted within the cabinet compartment 26 by means of track and rail members 30, 30a and 30b in the manner described with reference to FIGURE 8. In FIGURE 13 the lower tier includes a single half shelf outside pan 44 and half size covering plate 45 therefor, this latter pan and its covering plate being supported within the cabinet compartment 26 by means of track and rail members 30 and 30a, the member 30a being supported by means of bent rod 50, in the manner described with reference to FIGURE 9.

In all three arrangements of aforesaid FIGURES 11, 12 and 13, the upper tier comprises a half size pan 44, a half size covering plate 45 therefor and a half shelf 54a. As illustrated the half-size pan and covering plate of the mentioned second tier are removably seated in track and rail members 30 and 30a. The member 30 is attached to the side wall 23 of the cabinet, whereas the member 30a is suspended on rod portions 56 which, as clearly appears in FIGURE 16, extend laterally from the half shelf 54a. This half shelf 54a is provided with lateral projections 55a which are seated in hangers 28 attached to the side wall 23a in the manner described with reference to FIGURES 10 and 15. As seen in FIGURE 16, the rod projections 56 of said shelf 54a pass through the openings 37 in the member 30a and have offset portions 57 which serve to locate the member 30a in its operative position where it is maintained by the covering plate 45 due to the abutting engagement between the marginal edge portion 48 of said covering plate with the upstanding ridge 49 of said member.

It is particularly to be noted that in each illustrated arrangement, cooperative use is made of the same ele-

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ments including: members 30, hangers 28, suitable means to receive and support either on the walls 23 and 23a, similar hydrators and cover members, shelf members, and the like.

From the foregoing description, it will be appreciated 5 that the present invention makes it possible for a prospective purchaser of domestic refrigerators to select from several available arrangements of standardized storage accessories, and for dealers to custom-fit the interior of refrigerator cabinets to satisfy such selection. Moreover, 10 it will be recognized that, by utilizing the principles of this invention, arrangements other than those here given by way of example may be obtained, and it is to be understood that the invention is not limited to the specific constructions shown and described but embraces such changes and variations as come within the scope of the 15 subjoined claims.

What we claim is:

1. Individual elongated companion members adapted for mounting horizontally in an open front refrigerator 20 storage compartment to support therein a food-storage pan having oppositely directed lateral flanges and a pan cover having opposite marginal edge portions, each member being of one-piece construction and comprising a channel extending throughout the length of the member 25 and facing outwardly to one side thereof for engagement with a lateral flange of the pan, a ledge facing upwardly of the member for engagement with a marginal edge portion of the pan cover and disposed above and in space parallelism with respect to the channel, a web extending 30 vertically between and joined to the channel and ledge for cooperation therewith to provide a recess facing out-

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wardly to the other side of the member, and means at each end portion of the member providing therein a pair of transverse rod-receiving openings, one of said openings communicating with the aforesaid recess.

2. Individual elongated companion members as set forth in claim 1, in which the end portions of each member are symmetrically identical so that the member can selectively be mounted in the mentioned compartment with either end portions lying adjacent the open front 10 of the refrigerator cabinet.

3. Individually elongated companion members as set forth in claim 1, in which each of the end portions of each member includes a flared section leading into the mentioned channel for access thereto through either of 15 said end portions.

4. Individual elongated companion members as set forth in claim 1, in which the end portions of each member are symmetrically identical so that the member can selectively be mounted in the mentioned compartment with either end portion lying adjacent the open front of the refrigerator cabinet, each of the end portions of each member including a flared section leading into the mentioned channel for access thereto through either of said 20 end portions.

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