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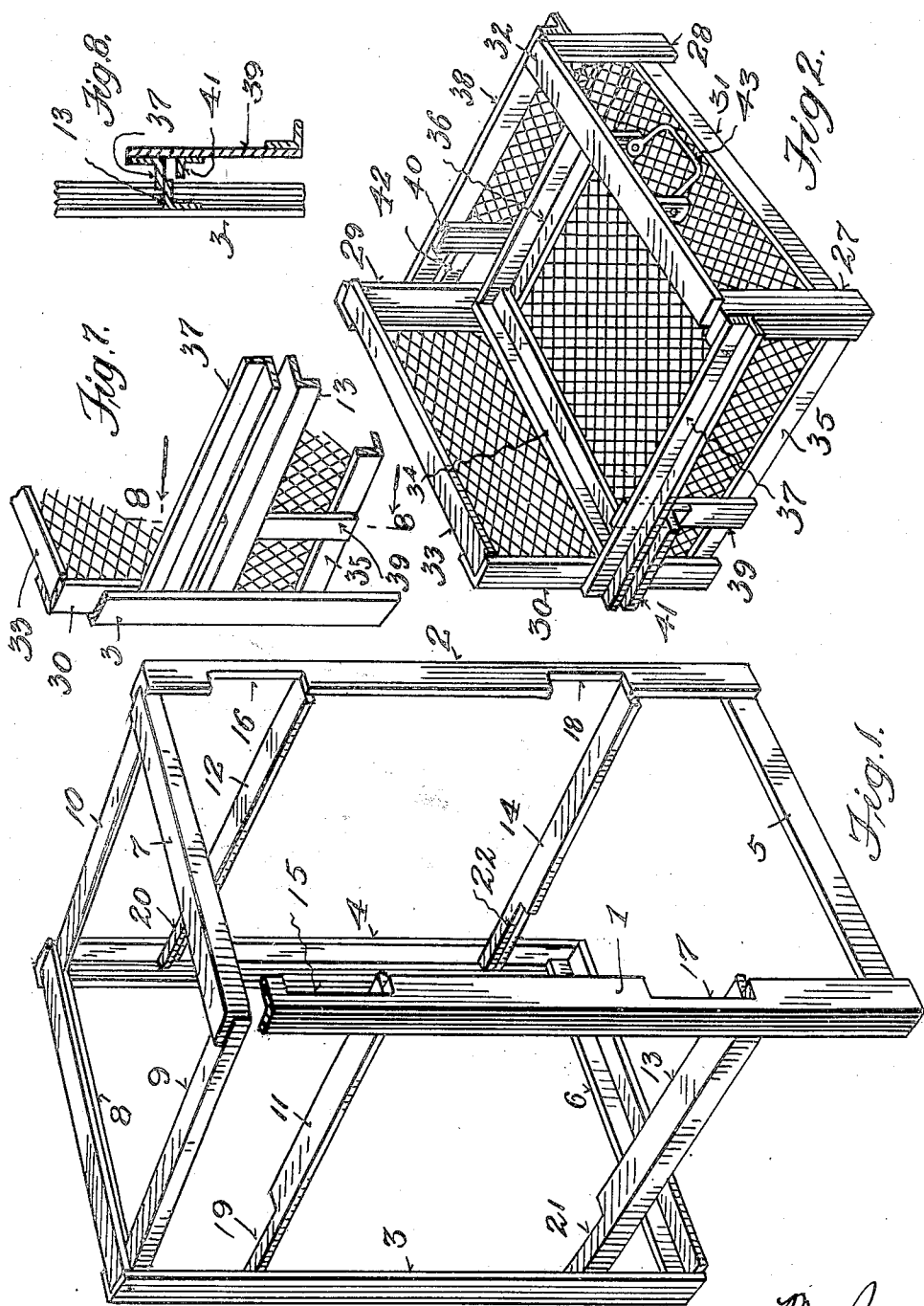
F. M. SUTTON

1,916,852

REFRIGERATOR CONSTRUCTION

Filed June 10, 1930

3 Sheets-Sheet 1



Francis M. Sutton
INVENTOR

BY
Barley & Darby
ATTORNEYS

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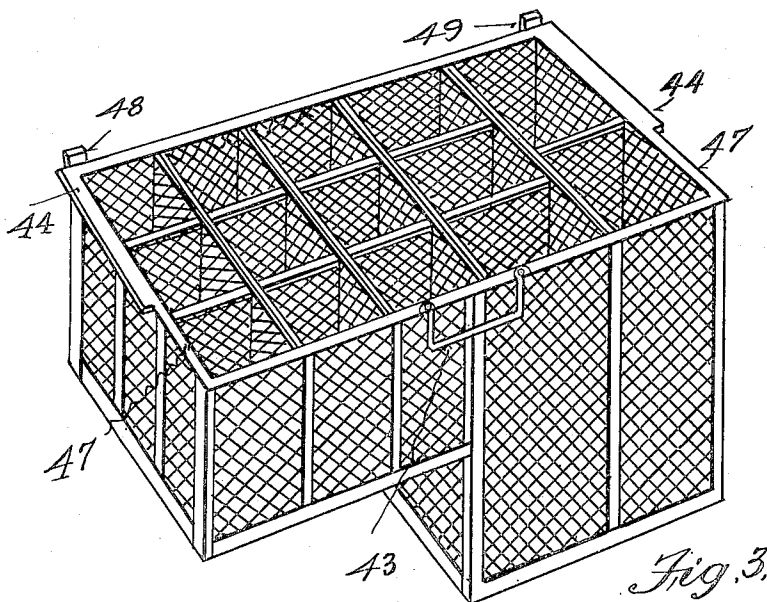
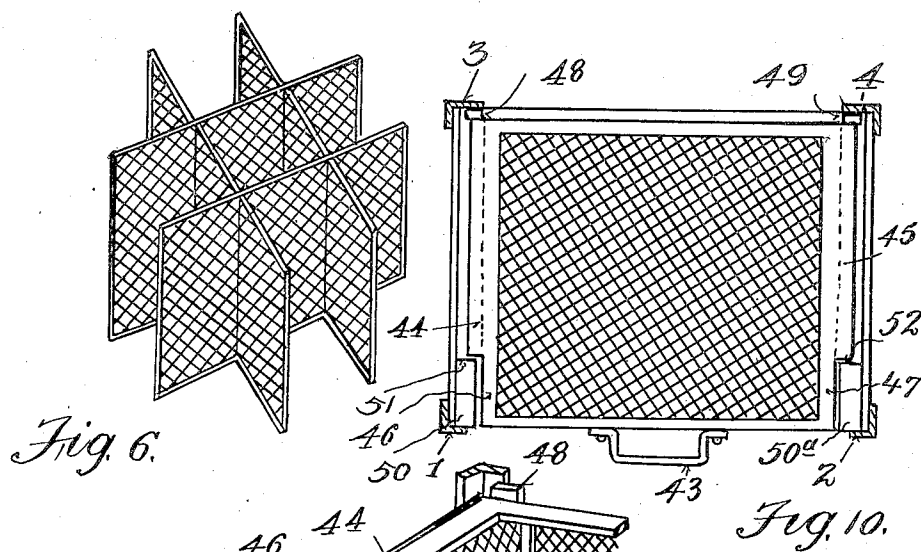
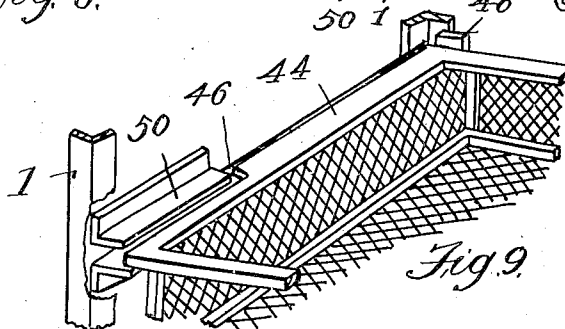
F. M. SUTTON

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REFRIGERATOR CONSTRUCTION

Filed June 10, 1930

3 Sheets-Sheet 2



Francis M. Sutton
INVENTOR

BY *Darby & Darby*
ATTORNEYS

July 4, 1933.

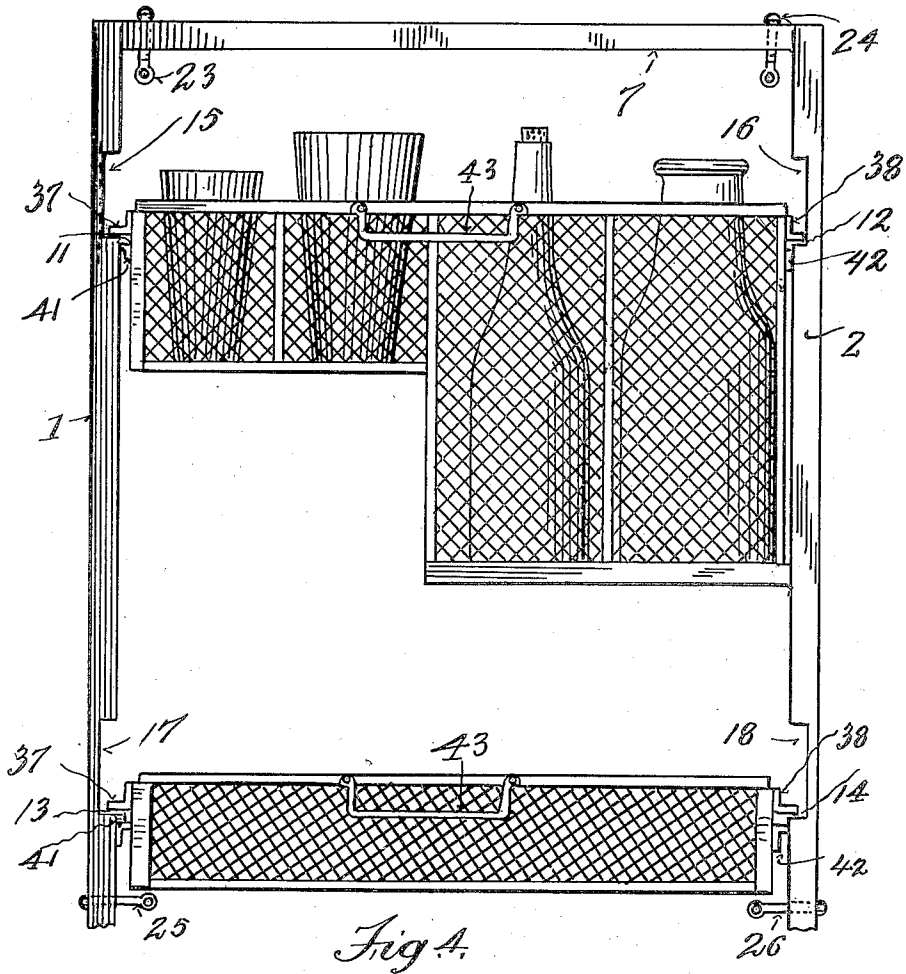
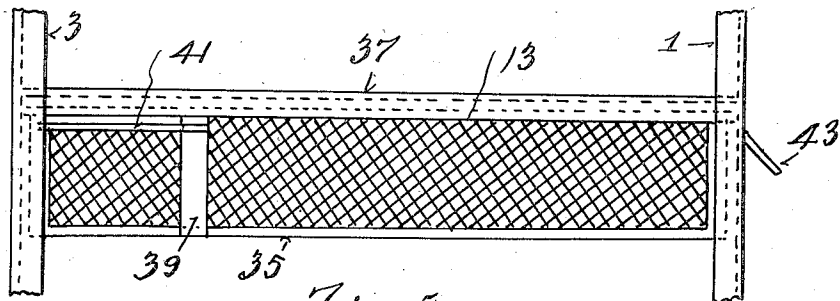
F. M. SUTTON

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REFRIGERATOR CONSTRUCTION

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3 Sheets-Sheet 3



Francis M. Sutton
INVENTOR

BY Darby & Darby
ATTORNEYS

UNITED STATES PATENT OFFICE

FRANCIS MARVIN SUTTON, OF NEW YORK, N. Y.

REFRIGERATOR CONSTRUCTION

Application filed June 10, 1930. Serial No. 460,113.

The invention relates to improvements in refrigerator construction, and more particularly to a novel construction and arrangement of removable trays for holding provisions in a refrigerator and a removable support therefor.

In the usual type of refrigerator employed for home use, the trays used for holding the provisions to be refrigerated are either constructed in the form of flat shelves made of wire or some other suitable material, or are made in shallow basket-like form of the same materials, and are arranged in the refrigerator in such manner that different classes and sizes of provisions may be placed thereon.

Ordinarily, these trays or shelves are constructed in such manner that they are permanently secured to the interior of the refrigerating compartment, or are not removable except by lifting the same out of the refrigerator after removing all of the provisions that may be stored on the same. Also when these trays or shelves are positioned in the refrigerating compartment in the usual manner, it is necessary, in order to remove any desired article placed thereon, to reach into the refrigerator and take the same out of the compartment. If other articles happen to be in the way of the desired article it is necessary to first either remove these articles or set them out of the refrigerator. In the usual construction of trays for refrigerators of the type used in homes, there is also no provision made whereby bottles or like articles are prevented from being accidentally upset when removing the same or when removing other articles from the refrigerating compartment.

In addition to the above objectional features of the tray equipment for these refrigerators, it has been found that the usual arrangement of the trays in the refrigerating compartment is ordinarily such that there is a large amount of space which could be utilized for storing articles which is wasted.

It is the special object of my present invention to overcome the above mentioned objections by providing a construction and arrangement of trays and a support therefor which will be adaptable for use in any stand-

ard type of refrigerator in place of the usual type of trays which are now used therein.

A further object of the invention is to provide a removable support for the trays embodying my invention which may be readily assembled and secured as a unit to the interior of the refrigerating compartment of a refrigerator.

A further object of the invention is to provide a novel construction of a removable support for said trays which is so designed that the trays are slidably removable from the interior of the refrigerating compartment of the refrigerator when said support is mounted therein.

A further object of the invention is to provide an arrangement of the trays on said support whereby a maximum of the interior space of the refrigerating compartment will be utilized for the storing of provisions.

A further object of the invention is to provide a novel construction of the trays so that individual articles to be stored in the refrigerating compartment may be separated and maintained in the refrigerator without danger of being upset or knocked over when it is desired to remove other articles from the compartment.

Other objects and purposes than those specifically enumerated will be apparent as understanding is had of the construction illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of the removable support for the trays and which is made in accordance with my invention. The support is shown with the trays removed and a part of the figure is broken away to more clearly show a portion of the construction of said support.

Fig. 2 is a perspective view showing the construction of one type of tray which may be utilized in my improved refrigerator construction.

Fig. 3 is a perspective view showing the construction of another type of tray which may be utilized in said refrigerator construction.

Fig. 4 is a front elevational view of the

support showing the trays illustrated in Figs. 2 and 3 in place therein.

Fig. 5 is a broken side elevational view of the lower basket illustrated in Fig. 4.

Fig. 6 is a perspective view of a removable divider which is adaptable for use in connection with the tray shown in Fig. 3.

Fig. 7 is a partial broken view in perspective of one corner of the tray shown in Fig. 2 and showing the relation of its respective parts with said support when partially in place.

Fig. 8 is a sectional view of Fig. 7 taken on the line 8—8 of Fig. 7 looking in the direction of the arrows.

Fig. 9 is a partial view in perspective showing a modified construction of the tray and support at the point where the tray is slidably supported in said support.

Fig. 10 is a plan view of a tray and the support as constructed in the modified form shown in Fig. 9.

Like reference characters refer to like parts throughout the several views of the drawings.

The tray support illustrated in Fig. 1 is provided with the upright elements 1, 2, 3 and 4 of angle iron construction. The lower extremities of the upright elements 1 and 2 are spaced apart by the bar 5 which is also of angle iron construction. The lower extremities of the upright elements 3 and 4 are similarly spaced apart by the angle iron 6. These spacer bars 5 and 6 are secured to said upright elements in any desirable manner, such for instance as by screws or bolts. The upper extremities of the upright elements 1 and 2 are spaced apart by the angle iron bar 7, whereas the upper extremities of the upright elements 3 and 4 are likewise spaced apart by the angle iron bars 8. The spacer bars 7 and 8 are also secured to said upright elements in any desired manner, such as by screws or bolts.

The upright elements 1 and 2 are separated from the upright elements 3 and 4 by the spacer bars 9, 10, 11, 12, 13 and 14, which are adapted to be secured in a suitable manner to said upright elements. The bars 9 and 10 are secured to the upright elements 1, 2, 3 and 4 in such manner that they are overlapped by the angle iron bars 7 and 8, as clearly shown in Fig. 1.

The spacer bars 11 and 12 and 13 and 14 form the supports for slidably supporting the trays as will be more fully described hereinafter. If desired more spacer bars forming supports for further trays may be utilized, the drawings merely illustrating supports for two trays for the sake of clarity.

The upright elements 1 and 2 are provided with the cut out portions 15 and 16, 17 and 18. These cut out portions are for permitting the insertion and removal of the trays from said support.

The drawings illustrate two types of tray construction and two types of construction of the spacer bars for slidably supporting the trays. The support shown in Fig. 1 shows the preferred form of construction and the tray shown in Fig. 2 shows the preferred form of tray construction adaptable to be used with the support illustrated in Fig. 1.

Fig. 3 shows a form of modified tray construction adaptable for use in a modified support construction which is illustrated in Fig. 9.

The tray support illustrated in Fig. 1 and which has been above described, may be readily assembled and by utilizing upright elements and spacer bars of a desired length the said support can be made adaptable for use in the refrigerating compartment of any sized refrigerator. The said support may be also removably secured to the interior of the refrigerating compartment by any suitable means, such as screw bolts 23, 24, 25 and 26 shown in Fig. 4.

Trays adaptable for being removably maintained in the support shown in Fig. 1 are constructed in the manner clearly illustrated in Fig. 2. The tray shown is provided with the upright elements 27, 28, 29 and 30 which may be of angle iron construction. The upright elements 27 and 28 are spaced apart by the lower angle iron 31 and the upper bar 32. The upright elements 29 and 30 are spaced apart by similar angle bars 33 and 34. The rearwardly upright members 29 and 30 may be made of a greater height than the forward members 27 and 28 so as to prevent any provisions which may be stored on the tray from falling off when the tray is removed from the refrigerating chamber.

The lower extremities of the upright members 27, 28, 29 and 30 are spaced apart by the side angle bars 35 and 36. The upper end of the upright members 27 and 28 are spaced apart from the rear upright members 29 and 30 by means of the angle bars 37 and 38. The angle bars 37 and 38 are of less width than the spacer bars 11, 12, 13 and 14 of said support but adapted to slide thereon.

The bottom ends and sides of the tray are covered in any suitable manner with a wire mesh or other suitable material, as clearly shown in the drawings, and it is of course understood that the width of the tray is such that the side angle irons 37 and 38 will pass through the openings 15, 16, 17 and 18 in the upright elements 1 and 2, and the depth of the tray in such that it will be completely supported on the spacer bars 11 and 12, or 13 and 14, when it is slid into position in the support.

Mounted on the sides of the tray are upright members 39 and 40. Secured to the upright members 39 and 40 and also to the upright members 29 and 30 are short angle iron pieces 41 and 42. These short angle

iron pieces are positioned so that the upper surface thereof lies parallel with but spaced apart from the under surfaces of the angle irons 37 and 38. The tray is also provided

50 and 50^a which are so positioned that their under faces lie above and parallel with the spacer bars.

When this construction of the tray and support is utilized the tray is inserted into the support so that the side angle irons will slidably ride along the surfaces of the upper short angle irons 50 and 50^a until the cut out portions 46 and 47 coincide with the short angle irons. When this point is reached the side angle irons 44 and 45 will drop downwardly until they are supported on the spacer bars 11 and 12, or 13 and 14. When the tray is pulled forward its forward movement is arrested by means of the lugs 48 and 49 which will strike against the ends 51 and 52 of the short angle irons 50 and 50^a. If it is desired to entirely remove the tray from the support, this may readily be accomplished when the tray is completely within the support by simply raising the front portion of the tray until the under surfaces of the side spacer bars 44 and 45 are above the upper surfaces of the short angle bars 50 and 50^a and then pulling the tray forward.

In Fig. 3 there is illustrated a type of tray which is adaptable for use in my improved refrigerator apparatus and which is constructed in a particular manner so as to carry out the objects of my invention. This type of tray may be formed with the side spacer bar construction as above described in reference to the tray shown in Fig. 2, although it is illustrated as being made with the side bar construction described as the modified form shown in Figs. 9 and 10.

The tray shown in Fig. 3 is generally adapted to be used as an upper tray fitting into the support in the upper part thereof, as shown in Fig. 4, and is supported by the upper spacer bars 11 and 12. The tray is formed with a box-like frame having wire mesh sides. One-half of the frame of the tray is of greater depth than the other half and is divided into compartments formed by spaced apart wire mesh dividing members. The other half of said tray is divided into compartments by similar dividing members. The dividing members may be removable as a unit (see Fig. 6). The compartments of the greater depth are designed to accommodate bottles and like articles which are likely to tip over when the tray is moved and the depth of the tray for these articles is such that only a small portion of the article will project above the top plane of the tray. The other half of the tray is also designed to hold articles of medium height and which are of the type that might accidentally upset.

Referring to Fig. 4, it will be seen that when a tray constructed in accordance with the design illustrated in Fig. 3 is in place with reference to the support it is possible to utilize a flat tray of the design shown in Fig. 2 positioned in the support so that it is compara-

The rear ends of spacer bars 11, 12, 13 and 14 are provided with cut out portions 21 and 22. Said cut out portions are of a width slightly greater than the width of the angle irons 37, 38, 41 and 42 and of a length slightly greater than the length of the short angle iron pieces 41 and 42.

As above stated, the basket tray constructed as illustrated in Fig. 3 is adapted to be slid through the openings 15 and 16, or 17 and 18, in the support and when the tray is inserted through either pair of these openings and pushed to the rear of the support the lower surface of the short angle irons 41 and 42 slide along the upper surface of the spacer bars 11 and 12, or 13 and 14, until the cut out portions 19 and 20, or 21 and 22, are reached and then the short angle irons 41 and 42 drop down below the surface of the spacer bars and the tray is supported on said spacer bars by means of the angle bars 37 and 38. The position of the tray with respect to the support at the point where the short angle irons are about to drop below the surface of the spacer bars is clearly shown in Fig. 7.

After the said tray has thus been positioned in the support it can readily be pulled forward by means of the handle 43, the angle bars 37 and 38 sliding on the upper surface of angle bars 11 and 12, or 13 and 14, and the upper surface of short angle bars 41 and 42 sliding on the under surface of angle bars 11 and 12, or 13 and 14. The forward movement of the tray when it is pulled forward is arrested before the tray can be completely pulled from the support by means of the forward ends of the short angle irons 41 and 42 abutting against the upright elements 1 and 2.

If it is desired to completely remove the tray from the support, the tray is pushed to the rear of the support so that the cut out portions 19 and 20, or 21 and 22, coincide with the position of the short angle irons 41 and 42 and then the forward end of the tray is tilted slightly downwardly until the short angle irons 41 and 42 are above the surface of the spacer bars and then the tray is pulled forward allowing the under surface of angle bars 41 and 42 to slide on the upper surface of the spacer bars.

In the modified structure of support and tray shown in Figs. 9 and 10 the side angle bars 44 and 45 of the tray are formed with the cut out portions 46 and 47 and at the ends there is provided the upstanding lugs 48 and 49. The upright members 1 and 2 of the support at the cut out portions 15, 16, 17 and 18 have secured thereto, in addition to the spacer bars 11, 12, 13 and 14, the short angle irons

tively close to the upper tray and because of the reduced depth of one-half of the upper tray there is provided a space between the trays on one side where large provisions, such as cuts of meat may be stored, whereas there is no lost space between the upper and lower trays on the other side. By this manner of constructing and arranging the trays in the support all of the available space is utilized to the best advantage and it is possible to provide for the storing of a maximum quantity of provisions.

It will be seen from the above description that there is provided a refrigerating construction which is readily adaptable for use in the standard types of refrigerator compartments and said construction can be readily removed from the compartment as a whole unit for cleaning purposes or the trays thereof can be individually removed either with the provisions stored thereon or empty. The trays are also constructed in such manner that although they are capable of being slidably withdrawn partially from the refrigerator compartment, they are prevented from being accidentally withdrawn completely from the refrigerator compartment when they are being used in the ordinary manner.

It will also be seen that the provisions stored upon the trays are made readily accessible by reason of the fact that the tray may be slidably withdrawn from the refrigerator compartment and individual articles which are liable to be tipped over are protected from such a mishap by reason of the compartments provided in the tray construction.

What I claim is:

1. In a refrigerator construction, a support for removable trays comprising front and rear frames each consisting of vertical members spaced from each other by horizontal members, and a plurality of horizontal members connecting said frames, a plurality of removable trays adapted to be supported on said horizontal frame connecting members of said support, said trays comprising a frame having wire mesh covered sides and bottom, cut out portions in the vertical members of the front frame of said support, horizontal angle iron bars secured to each side of said tray and adapted to be slidably received through the cut out portions of said vertical members of the front frame of said support and to be supported by the horizontal frame connecting members thereof, a short horizontal angle iron bar secured to each side of said tray positioned parallel with but spaced apart from said first mentioned side angle bars on the sides of said tray, cut out portions in the horizontal frame connecting members of said support, said cut out portions being of a greater length than the length of said short horizontal angle iron bars secured to the sides of said tray.

2. In a refrigerator construction, a support comprising front and rear frames each consisting of vertical members spaced from each other by horizontal members, and a plurality of horizontal members connecting said frames, a plurality of removable trays adapted to be positioned in said support and supported on said horizontal frame connecting members, said trays having front, rear and side members and bottom covered with wire mesh, a horizontal angle bar secured to each side of said tray, cut out portions in the vertical members of the front frame of said support adapted to receive the horizontal angle bars of said trays, cut out portions in the horizontal frame connecting members of said support, means on said trays to abut against said horizontal frame connecting members of said support to prevent the accidental withdrawal of said trays.

3. In a refrigerator construction, a support comprising front and rear frames each consisting of vertical members spaced from each other by horizontal members, and a plurality of horizontal members connecting said frames, a plurality of removable trays adapted to be positioned in said support, said trays being formed with wire mesh front and rear members, wire mesh side members and a wire mesh bottom, a horizontal angle iron bar secured to each side member of said tray, said angle bars being adapted to be slidably supported on the horizontal connecting members of said support, a short horizontal angle iron bar secured to each side member at the rear portion of said side member and positioned parallel to but spaced apart from said first mentioned horizontal angle bars of said tray, cut out portions in said vertical members of the front frame of said support adapted to receive the horizontal angle bars of said tray, said cut out portions being adjacent the joining point of the horizontal connecting members with the vertical members of said support, cut out portions at the rear ends of the horizontal connecting members of said support, said cut out portions being of a length greater than the length of the short angle iron bars of said trays.

4. In a refrigerator construction, a supporting frame for removable trays comprised of pairs of front and rear vertical bars spaced apart by horizontal front and rear bars at the bottom and top thereof and by a plurality of horizontal side bars connecting with said vertical bars at points at the tops and intermediate the ends thereof, cut out portions in the front vertical bars adjacent the joiner points of the side bars with said vertical bars, a removable tray having wire mesh sides and bottom, and adapted to be supported on a lower pair of said horizontal side spacing bars, a second removable tray having wire meshed sides and bottom and adapted to be supported on an upper pair of said

horizontal side spacing bars, and formed so
 that a portion of the tray is of greater depth
 than the remainder thereof and having re-
 movable wire mesh partitions therein, hori-
 5 zontal angle iron bars secured to the sides
 of said trays and adapted to be slidably sup-
 ported on the horizontal side spacing bars of
 said frame, short horizontal angle iron bars
 secured to the sides of said trays at the rear
 10 portion of said sides and positioned below
 and spaced apart from the upper horizontal
 angle iron bar, cut out portions in the hori-
 zontal side spacing bars of said frame at the
 rear end of said bars, said cut out portions
 15 being of a greater length and width than the

length and width of said short horizontal an-
 gle bars secured to the sides of said tray so as
 to permit said short horizontal angle bar to
 drop below the level of the plane of the up-
 per surface of the horizontal side spacing 70
 bar of said frame when said tray is posi-
 tioned entirely within said frame and so the
 upper surface of said short angle bars will
 slide along the under face of said horizontal
 side spacing bars of said frame when said 75
 tray is pulled outwardly from said frame.

In testimony whereof I have hereunto set
 my hand on this 6th day of June A. D., 1930.

FRANCIS MARVIN SUTTON. 80

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