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H. W. EAGLES ET AL
SUPPORT FOR SHELF OR BASKET
RAIL WITHIN A REFRIGERATOR
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2,548,593

Fig. 1.

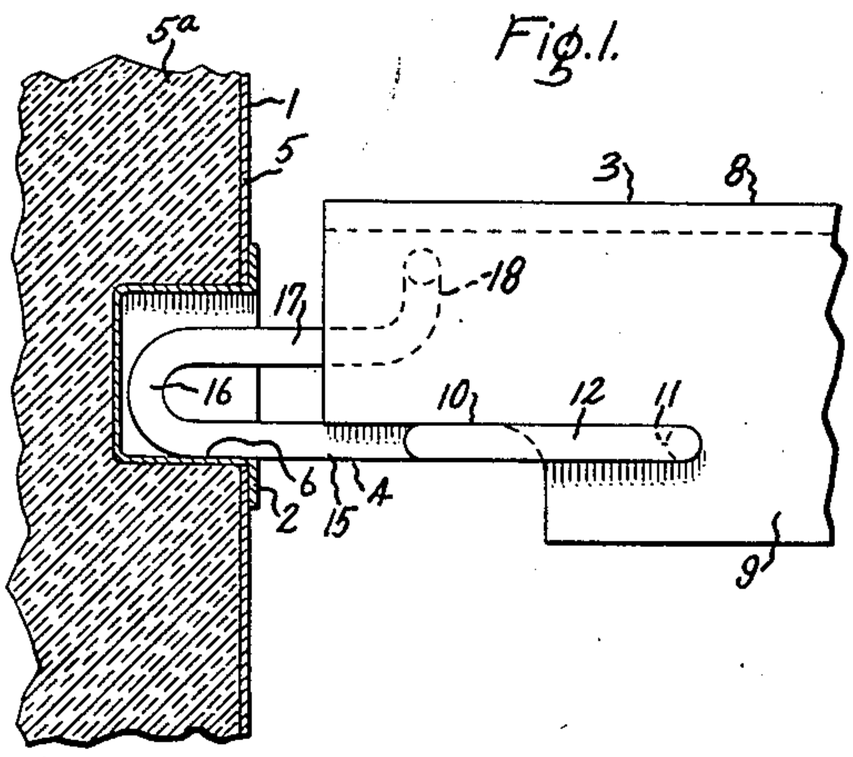


Fig. 3.

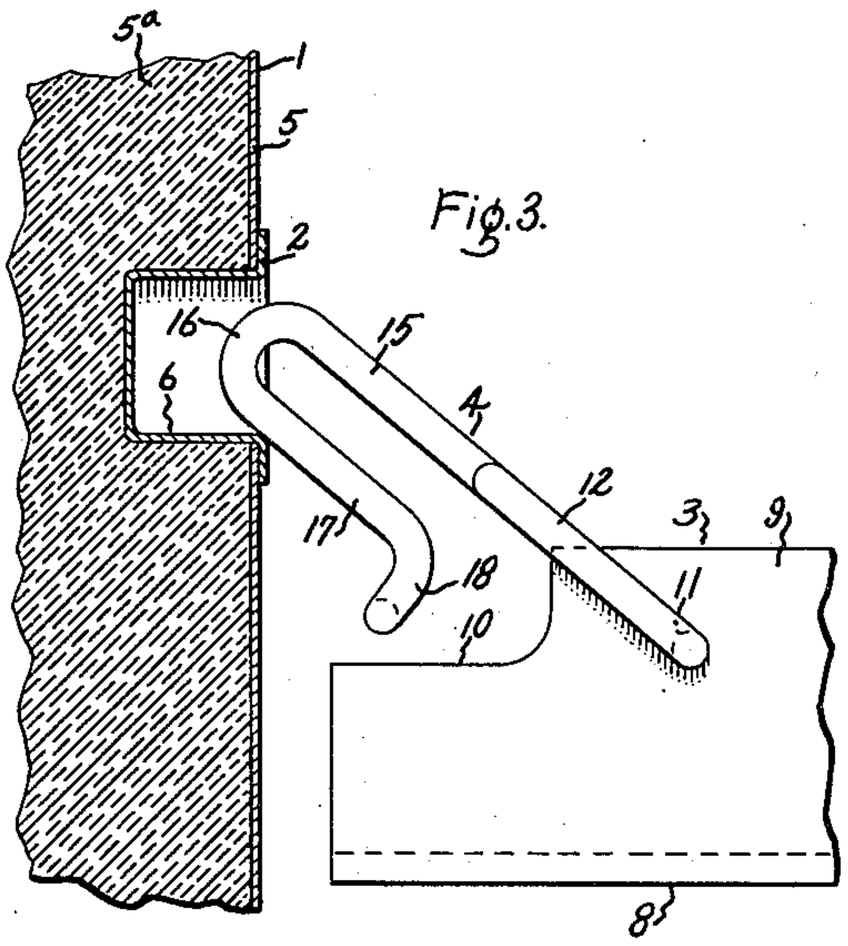


Fig. 2.

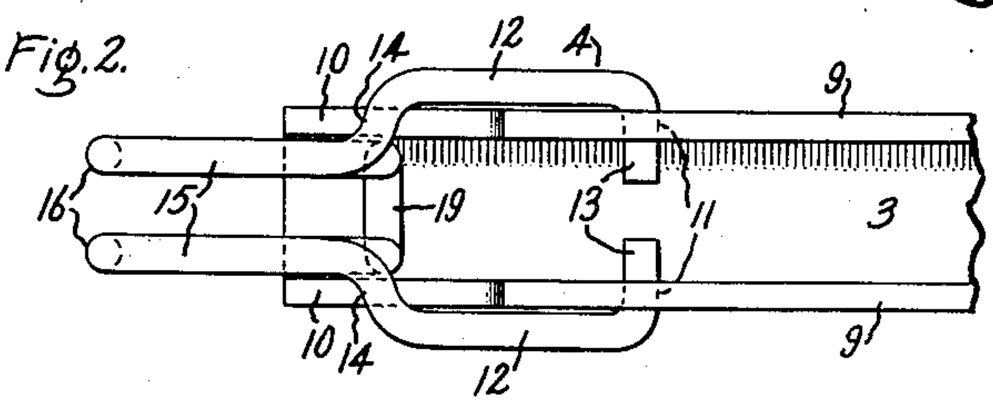


Fig. 4.

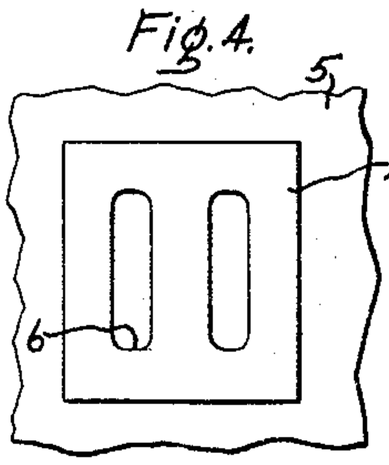


Fig. 7.

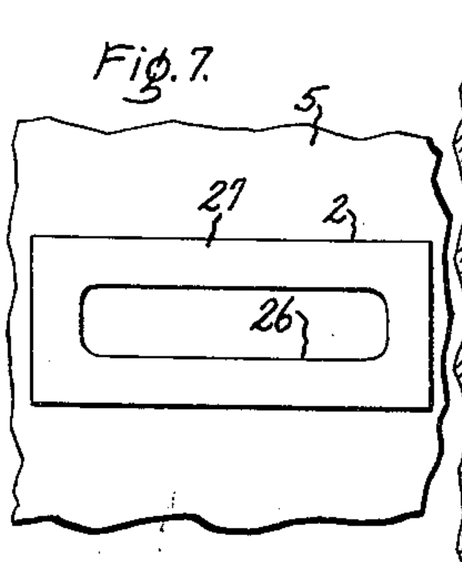


Fig. 5.

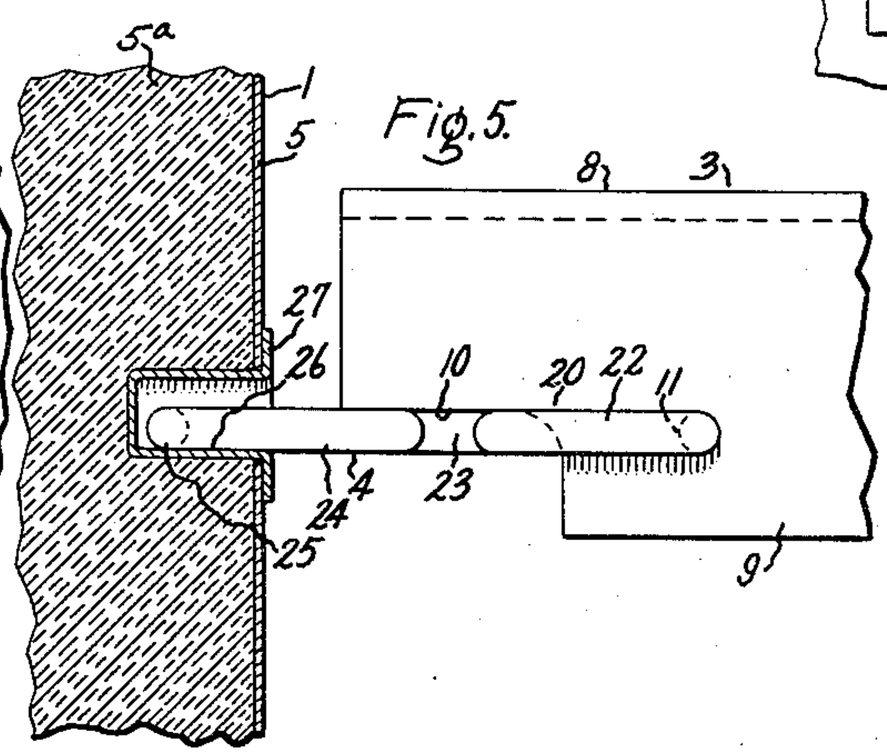
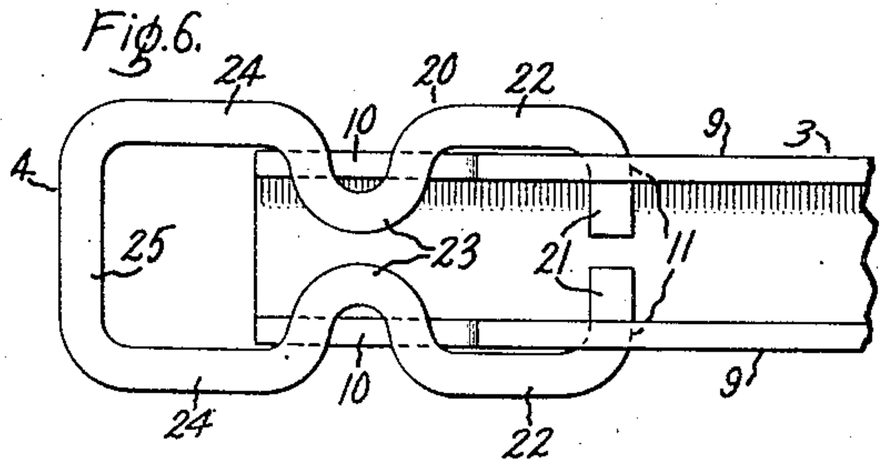


Fig. 6.



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SUPPORT FOR SHELF OR BASKET RAIL WITHIN A REFRIGERATOR

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2 Claims. (Cl. 248—239)

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This invention relates to a device for properly positioning support rails or shelves.

Although, for the purpose of illustration, this invention is described in the following specification as applicable to domestic freezers, it will be understood that it is equally applicable to other types of cabinets or vertical surfaces on which it is desired to support shelves or the like.

Freezers and refrigerators of the chest type are usually provided with a cabinet to which access may be had through a top opening equipped with a suitable lid. When the lid has been raised, the complete storage space is accessible. With this type structure, it is desirable that the food storage space be divided into a large compartment at the bottom of the freezer and a smaller, more accessible compartment in the upper portion. To accomplish this result, a pair of horizontal basket rails are usually provided within the freezing compartment at a predetermined distance above the bottom of the cabinet. Food baskets or containers are then placed on the rails, giving ready access to some of the frozen foods. The provision of rails, however, entails some difficulty. Specifically, if they are not properly positioned, baskets or containers which are set thereon are liable to extend above the top of the vertical walls of the cabinet, causing damage to the lid when it is lowered.

It is an object of this invention to provide an improved support for a basket rail or shelf within a cabinet or the like.

It is a further object of this invention to provide a positioning means which allows the rail to be held in only a predetermined position.

It is a further object of this invention to provide for the simple removal and replacement of a basket rail or shelf within a food storage compartment of a domestic freezer together with the provision of means for insuring that the rail or shelf can be placed only in the proper position.

Further objects and advantages of this invention will become apparent and the invention will be more clearly understood from the following description, referring to the accompanying drawing and the features of novelty which characterize this invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

In carrying out the objects of this invention, a pair of formed clips are provided which are hinged to respective ends of a horizontal basket rail or shelf. The clips are so arranged that the rail or shelf can be supported only in a predetermined position when the free ends of the clips

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are inserted into suitable openings in the vertical liner walls of the cabinet.

Referring to the drawing, Fig. 1 is a side view of a portion of an end wall of a cabinet supporting an end of a basket rail by means of the improved clips; Fig. 2 is a bottom view of the improved clips hinged to the basket rail; Fig. 3 is a side view showing the effect of inserting the support rail improperly into the freezer cabinet; Fig. 4 is a front view of the supporting structure within the freezer liner; Fig. 5 is a side view of a modification of the subject invention; Fig. 6 is a bottom view of the modification; while Fig. 7 is a front view of the supporting structure of the freezer liner adapted to the modification.

Referring to Figs. 1, 2, 3, and 4 of the drawing, a vertical end wall 1 of a cabinet is shown provided with a grommet 2. Corresponding grommets (not shown) are provided in the opposite end wall of the cabinet. A rail or shelf element 3 is supported at each end by the grommets 2. Clips 4 are hinged to each end of rail 3 and are insertable into grommets 2 to support rail 3.

Vertical end wall 1 comprises an inner shell 5, insulation 5*a*, and a conventional outer wall (not shown). Each grommet 2 in wall 1 is provided with a pair of vertical slots of any suitable size (Fig. 4) arranged to provide a supporting surface 6 at a predetermined height above the bottom of the cabinet.

Rail 3 is made of metal or other suitable material and, although the cross-sectional shape may have any physical proportions, it has been found that a rail having a cross section of an inverted U-shape gives adequate support. Rail 3, as shown, is provided with an upper-horizontal portion or surface 8 with two downwardly extending vertical side members 9 giving rigidity to the horizontal portion. Side members 9 have a section removed from each end forming shoulders 10. Side members 9 are also provided with openings 11 in each end to accommodate the clip 4.

Clip 4 comprises two generally parallel legs and is formed from a single piece of wire shaped to provide parallel side portions 12, inturned or pivot portions 13, support portions 14, longitudinally extending parallel portions 15, upturned end portions 16, longitudinal parallel portions 17, upturned portions 18, and connecting portion 19.

Inturned portions 13 of the clip, which are perpendicular to the axis of rail 3, are insertable through openings 11 in sides 9 of support rail 3. Side portions 12 of the clip are parallel to and in spaced relationship with side members 9 of

rail 3, while support portions 14 are bent in toward the central longitudinal axis of rail 3.

When clip 4 is rotated about pivot portions 13 to a supporting position, portions 14 of clip 4 engage shoulder 10 of rail 3, and longitudinal portions 15, which extend axially from the innermost ends of support portions 14, rest against supporting surfaces 6 of grommets 2 in vertical end walls 1 of the cabinet.

The rounded upturned portions 16 provide a smooth hook-shaped surface that does not scrape the inner lining 5 of the cabinet when rail 3 is inserted into or withdrawn from the cabinet, and facilitates insertion of the clip into and withdrawal of the clip from grommets 2.

The only positive connection between clip 4 and rail 3 is the engagement of pivot portions 13 of the clip with openings 11 in sides 9 of the rail. Consequently, when surface 8 of rail 3 is uppermost, clip 4 is rotatable about pivots 13 and gravity causes the clips to hang perpendicular to the longitudinal axis of the rail.

In operation, pivot portions 13 are sprung into openings 11 in side members 9 of basket rails 3 and held there by resilient force. The rail is then placed in the cabinet and, at a convenient distance above grommets 2; end portions 16 of each support clip 4 are directed into the grommets. Then, as rail 3 is further lowered, shoulder portion 10 comes in contact with support portions 14 of clip 4. This limits the rotation of clip 4 about pivots 13, and when extended portion 15 of clip 4 rests on support surfaces 6 in grommets 2, the end of rail 3 is properly positioned.

Referring to Fig. 3 of the drawing, if rail 3 is improperly inserted into the freezer cabinet, then when ends 16 of clip 4 are inserted into grommets 2, the clip is free to rotate about its pivots 13 and shoulder 10 cannot limit this rotation. Consequently, the weight of the rail 3 causes the support clip 4 to rotate and the rail falls downwardly toward the bottom of the freezer.

The above description illustrates that in order to secure rail 3 in its predetermined position, it is necessary to insert it properly; otherwise, no support is available for the rail from clips 4, and it falls downwardly, as shown in Fig. 3.

Figs. 5, 6, and 7 illustrate a modification of this invention in which the clip 4 comprises two generally parallel legs and is formed from a single piece of wire 20 shaped to provide pivot portions 21, side portions 22, inwardly directed U-shaped support portions 23, extended portions 24 and end portion 25. Pivot portions 21 are sprung into openings 11 in side portions 9 of rails 3 in the same manner as pivot portions 13, above described.

The U-shaped support portions 23 provide a double surface 24 for engaging shoulder portion 10 formed by the cutaway section in sides 9 of rail 3. The longitudinally extended portions 24 extend in the same manner as portions 15 of support clips 4 and when rail 3 is properly positioned, extended portions 24 rest against support portion 26 of a grommet 27 in the vertical end wall 1. Grommet 27 in end wall 1 of the cabinet may be of any convenient shape, having the single function of accommodating longitudinally extending portions 24 to support the weight of the basket rail 3. Corresponding to the illustration in Fig. 3, if the modification of the support

bracket just described is inserted into grommet 27 in end walls 1 of the cabinet in any way other than the proper manner, the brackets will swing about pivot portions 21 and rail 3 will fall, since support portions 23 do not engage shoulder portion 10 of rail 3.

Modifications of this invention will occur to those skilled in the art and it is desired to be understood, therefore, that this invention is not to be limited to the particular arrangements disclosed, but that the appended claims are meant to cover all the modifications which are within the spirit and scope of this invention.

What we claim as new and desire to secure by Letters Patent of the United States is:

1. A horizontal supporting structure comprising a horizontal rail of inverted U-shaped cross section and supporting means therefor, a portion of each end of each of the side portions of said U-shaped rail being shaped to provide a supporting shoulder for said rail, a pair of generally U-shaped clips each pivotally connected to a corresponding end of said rail, each of the legs of each of said U-shaped clips including an extended portion, means for engaging said extended portions, and each of said legs further including an inturned portion engageable with said supporting shoulder in a predetermined position of said rail whereby each end of said rail is supported only when said rail occupies said predetermined position.

2. In a freezer cabinet, a structure for horizontally supporting food containers comprising a plurality of horizontal rails and supporting means therefor, each of said rails having a top portion and a pair of side portions arranged to provide an inverted U-shaped cross section, each end of each of said sides of said rails adapted to provide a supporting shoulder for said rails, said supporting means comprising a plurality of generally U-shaped clips each pivotally connected to a corresponding end of said rails and engaging means therefor in said freezer cabinet walls, an inturned portion on each of the legs of each of said clips adapted to engage a corresponding one of said rail supporting shoulders, an extended portion on each leg of each of said clips adapted to engage said engaging means, said engaging means comprising a plurality of grommets in said freezer cabinet walls each adapted to engage said corresponding extended portions of said clips whereby each end of said rails is supported in a predetermined position only when said clip inturned portions engage said rail supporting shoulders and said extended portions of said clips engage said grommets.

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