Oct. 13, 1959 H. D. WHITE ET AL 2,908,539

COMPARTMENTS FOR REFRIGERATORS

Filed May 20, 1957 3 Sheets-Sheet 1

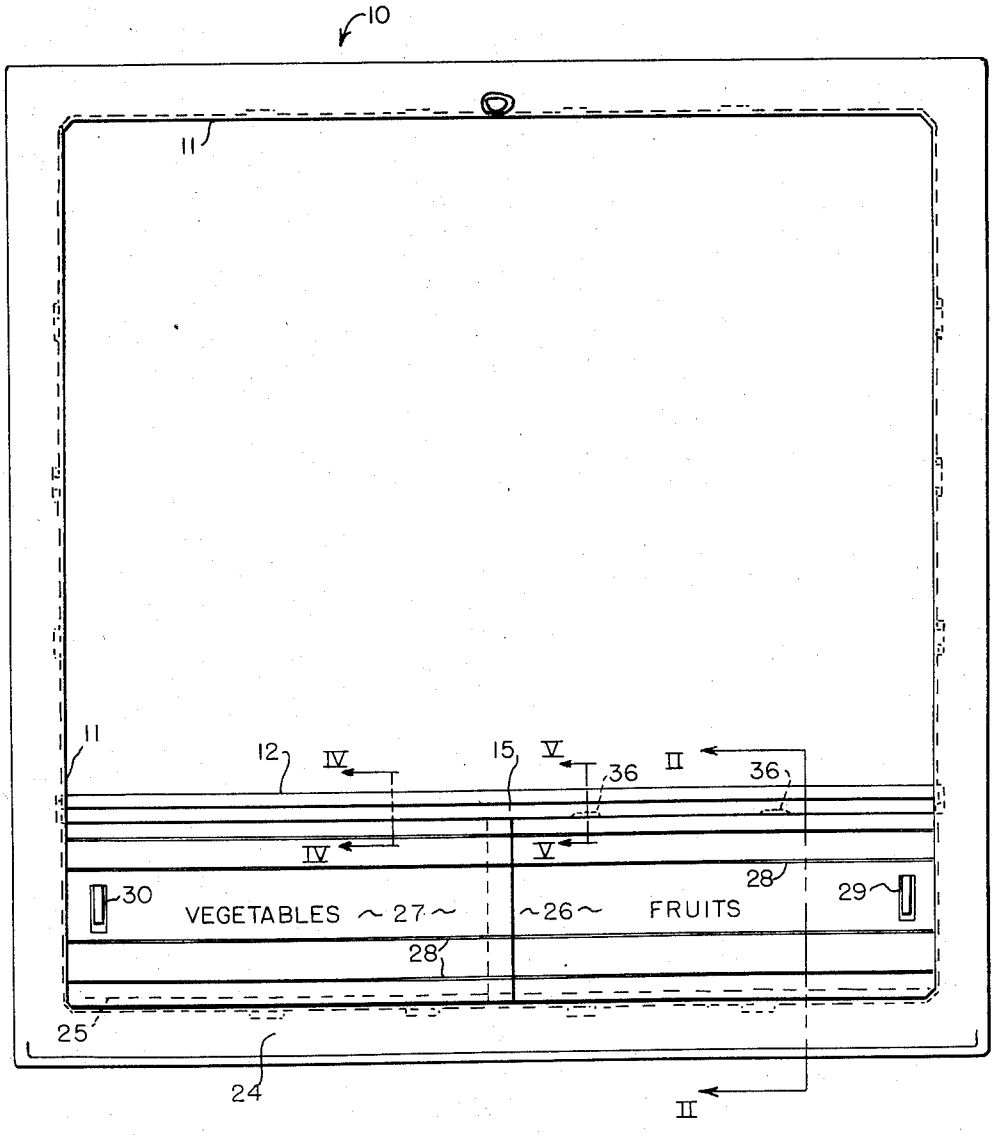


Fig. I

INVENTOR.
HOWARD D. WHITE
HOWARD J. TENNISWOOD
BY
Marshall, Marshall & Yeasting
ATTORNEYS

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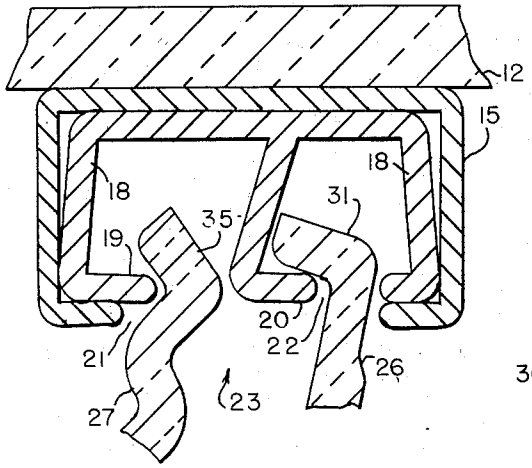


Fig. IV

Fig. II

INVENTOR.
HOWARD D. WHITE
HOWARD J. TENNISWOOD
BY
Marshall, Marshall & Yeates
ATTORNEYS

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COMPARTMENTS FOR REFRIGERATORS

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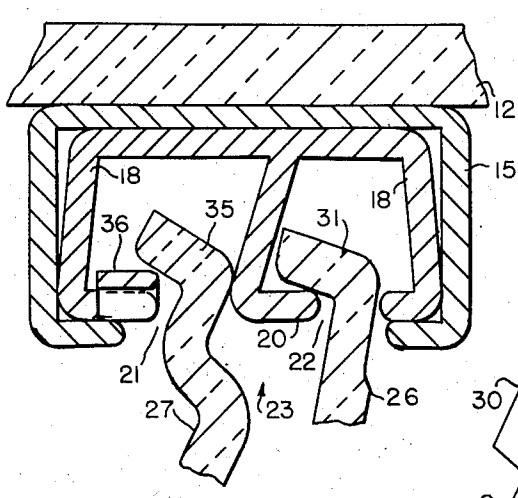


Fig. V

Fig. III

INVENTOR.
HOWARD D. WHITE
HOWARD J. TENNISWOOD
BY Marshall, Marshall & Yeates
ATTORNEYS

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2,908,539

COMPARTMENTS FOR REFRIGERATORS

Howard D. White, Deerfield, and Howard J. Tenniswood, Adrian, Mich., assignors to Revco, Inc., Deerfield, Mich., a corporation of Michigan

Application May 20, 1957, Serial No. 660,301

3 Claims. (Cl. 312—295)

Household refrigerators often have fresh fruit and vegetable compartments which are separated by partitions from the other parts of the refrigerator interiors. Such fresh fruit and vegetable compartments usually have doors which when closed prevent free ingress of cold air into the compartments.

A compartment may extend entirely or almost entirely across the interior of the refrigerator and may be equipped with two sliding doors which overlap when one of the doors is opened. Hence either of the doors can be opened, but they both cannot be fully opened at the same time.

In constructions designed prior to the instant invention, the upper edges of the doors slide along tracks and the lower edges of the doors slide in grooves which constitute guides so that the doors cannot become displaced and cannot be removed without disassembling either the upper track structures or the lower guide structures.

With the doors in place, even though one of them be fully open, the arrangement is awkwardly contrived for cleaning the deep compartment. Moreover, the guiding grooves are dirt catchers which are insanitary and difficult to keep clean.

It is an object of this invention to provide a compartment door construction devised to facilitate removal and replacement of the doors.

It is a further object of this invention to provide a compartment door construction having overlapping slidable doors which can both be removed at the same time to make the interior of the compartment more freely accessible.

Another object is the elimination of dirt catching grooves from guides at the lower edges of compartment sliding doors.

Another object is to provide compartment sliding doors which are attractive in appearance and easy to manipulate.

And still another object is to provide sliding door mechanism having the advantages mentioned above which is of sturdy, economical construction.

Other objects and further advantages of the invention will appear upon perusal of the following specification as illustrated by the accompanying drawings in which:

Fig. I is a front elevational view of the inner shell of a refrigerator box having a compartment equipped with sliding doors, the construction and mounting of which are in accordance with this invention;

Fig. II is an enlarged fragmentary elevational view taken as indicated by the line II—II of Fig. I the doors being shown as closed;

Fig. III is a view of the parts shown in Fig. II the doors being shown as swung outwardly and upwardly; and

Figs. IV and V are further enlarged fragmentary sectional views showing the manner in which the foremost door can be removed from one location but is prevented from falling out of another location.

These specific drawings and the specific description that follows illustrate and describe a preferred form of structure incorporating the instant invention but they are not intended to impose limitations upon its scope.

The inner shell **10** of the refrigerator box to which this invention is applied has a door jam **11** (sometimes called a throat liner) into and against which a door, not shown, may be closed, a compressible gasket (not shown) being interposed between the door jam and the door to provide an air tight seal.

The inner shell **10** of the refrigerator box may contain shelves and other equipment in any desired arrangement only the lowermost shelf **12** being shown. The lowermost shelf **12** is preferably removably supported on rails **13** secured by means of fasteners **14** to the sides of the inner shell **10** and further supported along its forward edge by a cross bar **15** of inverted channel-shape. Lugs **16** projecting downwardly from the shelf **12** and are engageable with the rear side of the cross bar **15** to prevent the shelf from sliding forwardly unless the front edge of the shell is lifted.

Fitted within the cross bar **15** is a rail **18** shaped as indicated in Figs. II, III and IV. The rail **18** preferably is made of extruded aluminum and preferably is inserted within the cross bar **15** before the cross bar **15** is fitted into the shell **10**. It will be noted that the rail **18** is of inverted double channel form with a lip **19** extending rearwardly from the lower edge of the foremost channel wall and a ledge **20** extending rearwardly from the lower edge of the intermediate channel wall, the construction being such that a foremost narrow slot **21** and a parallel rearmost narrow slot **22** extend along the foremost and rearmost edges respectively of a wide opening **23** in the inverted channel-shaped cross bar **15**.

The lower side of the door jam **11** constitutes a sill **24** having an upstanding bead **25** along its rearward edge, the bead **25** lying in advance of and parallel to the rail **18**.

The rearmost door **26** and the foremost door **27** are generally similar in size and shape both preferably being made of transparent synthetic resin such as crystal clear polystyrene resin. The doors may have ornamental strengthening ribs, such as are indicated by the numerals **28**, or other ornamentation molded thereupon. The rearmost door **26** is provided at its right side with an integral handle **29** and the foremost door is provided with an integral handle **30** at its left side. The rearmost door **26** may exhibit the molded word "Fruits" and the foremost door **27** may exhibit the molded word "Vegetables" or vice versa.

Extending into the rearmost narrow slot **22** and hooked over the ledge **20** is a flange **31** which is formed along the upper edge of the rearmost door **26**. The lower margin **32** of the rearmost door **26** is offset forwardly as indicated in Fig. II and engages the bead **25**.

Extending into the foremost narrow slot **21** in the rail **18** and hooked over the lip **19** is a flange **35** that is formed along the upper edge of the foremost door **27**. The lower margin **34** of the foremost door **27** is offset forwardly and is provided with a rib **33** which, instead of engaging the bead **25** directly, lies against the lower margin **32** of the rearmost door **26**, the size of the rib **33** and the shape of the flange **35** being such that the major door panels lie in parallel planes. Because the major door panels are parallel and because they slope forwardly and downwardly, the fruits and/or vegetables behind the doors are quite clearly visible even through portions of the doors that may be overlapped.

By so designing the door hanging and guiding structure that the bead **25** lies in advance of a vertical plane passing through the narrow slots **21** and **22** in the rail **18** and/or by so shaping the doors that their centers of

mass are ahead of their upper edges, the lower margin of the rearmost door **26** is held against the bead **25** by gravity and the rib **33** along the lower margin of the foremost door **27** is held against the lower margin of the rearmost door by gravity, thus the need for a guiding slot is eliminated.

When it is desired to wipe the sill **24** and the bead **25** the lower margins of the doors can be lifted somewhat so that a wiping cloth can be passed from side to side of the entire sill and bead.

When it is desired to remove the doors to facilitate cleaning them and also to make the hydrator compartment easily accessible for cleaning, the lower margin of the foremost door **27** can be lifted outwardly and upwardly and the flange **35** along the upper edge of the foremost door thus unhooked from the lip **19** (see Figs. III and IV). Likewise the rearmost door **26** then can be removed by lifting its lower margin and thus unhooking its flange **31** from the ledge **20**. After cleaning, the doors can be readily replaced by the reverse procedure.

In order to avoid any liability that the foremost door, when it has been partly opened by sliding it sidewise, might accidently fall out if it is swung upwardly by pulling something, such as a pan, against it, short sections of the lip **19** are punched up sufficiently to prevent the flange **35** from slipping out of the foremost narrow slot in the rail **18**. These punched up sections (which are shown at **36** in Fig. V) are located only along the portion of the lip **19** that the flange **35** hooks over when the foremost door **27** is partially or fully open. They do not interfere with purposeful removal of the door by swinging it forwardly and upwardly from its closed position. The probability that the rearmost door ever might accidently fall out is so slight that a similar precautionary treatment of the ledge **20** is not believed to be justified.

It is to be understood that the device hereinabove described and illustrated in the accompanying drawings is exemplary and that it is subject to modification without departing from the spirit and scope of the subjoined claims.

We claim:

1. A compartment for refrigerators, said compartment having a front opening, an inverted channel extending transversely over said front opening, a pair of walls of said channel extending downward, a ledge on said front wall extending rearwardly of said compartment, a door for said opening, a flange on said door extending forwardly of said compartment, the flange being of such dimensions with respect to said channel and ledge that it can be hooked on said ledge to support said door for transverse sliding movement and released from said ledge by raising said door, the separation of said ledge and said rear channel wall and the dimensions of said door and said flange being related in a manner to retain said flange on said ledge by engagement of said rear channel wall with said door while said door is inclined substantially to the horizontal, and a stop engaging said door along its path of travel on said ledge and arranged to maintain said door inclined forwardly below said ledge whereby the center of mass is forward of a vertical plane from the rearmost limit of said ledge and gravity maintains said door in a stable position sufficiently inclined to the horizontal to enable said rear channel wall to maintain said flange hooked on said ledge throughout the range of sliding movement of the door.

2. A compartment for refrigerators, said compartment having a front opening, an inverted channel extending transversely over said front opening, a pair of walls of said channel extending downwardly, a substantially horizontal ledge on said front wall extending rearwardly of said compartment, a generally planar door for said opening, a planar flange on said door extending forwardly of said compartment and turned from the general plane of said door through an angle of about 90°, the length of said flange being less than the length of said ledge and the depth of said flange being less than the height of said walls from the top of said ledge to the bottom of the channel, whereby said flange can be hooked over said ledge to support said door for transverse sliding movement and can be unhooked from said ledge by raising the door to a generally horizontal position, the horizontal separation of the rearmost limit of said ledge from the rear channel wall being greater than the thickness of said door adjacent said flange and less than the sum of that thickness and the flange depth whereby said rear channel wall maintains said flange on said ledge while said door is inclined to the horizontal, a sill extending transversely below said front opening, and a bead lying along said sill forward of a vertical plane from the rearmost limit of said ledge, said door having a height exceeding the separation of said ledge and said bead whereby said door when hung from said ledge has its lower margin in engagement with said bead and is held with its center of mass forward of the vertical plane from the rearmost limit of said ledge so that gravity maintains said door in a stable range of positions along said ledge and bead while inclined to the horizontal.

3. A compartment for refrigerators, said compartment having a front opening, an inverted double channel extending transversely over said front opening, three spaced walls of said channel extending downward, a substantially horizontal ledge on each of said front and intermediate walls at their lower ends extending rearwardly of said compartment, a pair of overlapping doors for said opening, a planar flange on each of said doors extending forwardly of said compartment and turned from the plane of said doors through an angle of about 90°, the length of said flanges being less than the length of said ledges and the depth of said flanges being less than the height of said walls from the top of said ledges to the bottom of said channel, whereby said flanges can be hooked over said ledges to support said doors for overlapping transverse sliding movement and can be unhooked from said ledges by raising the doors to a generally horizontal position, the horizontal separation on the rearmost limit of each ledge from a cooperating channel wall immediately behind that ledge being greater than the thickness of the door engaging that ledge in the region adjacent said flange and less than the sum of that thickness and the flange depth, whereby said cooperating channel wall maintains said flange on said ledge while said door is appreciably inclined to the horizontal, a sill extending transversely below said front opening, a bead lying along said sill forward of a vertical plane from the rearmost limit of the innermost ledge, said inner door having a height exceeding the separation of said innermost ledge and said bead, whereby said door when hung from said innermost ledge has its lower margin in engagement with said bead and is held with its center of mass forward of the vertical plane from the rearmost limit of said ledge so that gravity maintains said door in a stable range of positions along said ledge and bead and inclined appreciably to the horizontal, and a rib on one of the doors near its lower margin and bearing against the adjacent face of the other of said doors, whereby said outer door is maintained essentially parallel with said inner door and is transversely slidable with respect thereto.

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