

Jan. 31, 1950

J. W. NORRISH ET AL

2,496,252

REFRIGERATOR CABINET CONSTRUCTION

Filed Dec. 28, 1948

3 Sheets-Sheet 1

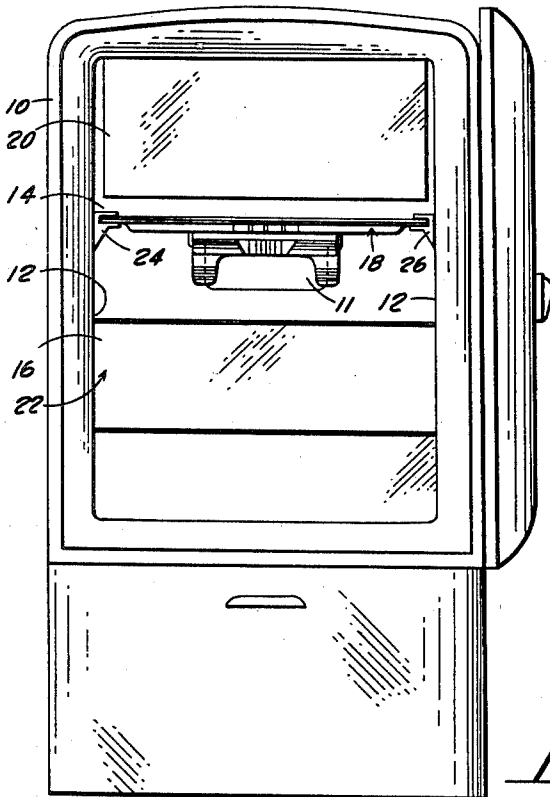
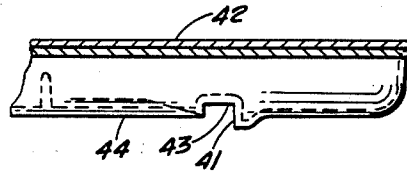


Fig. 5

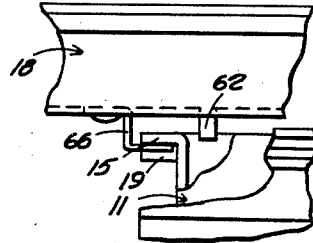


Fig. 5A

Fig. 1

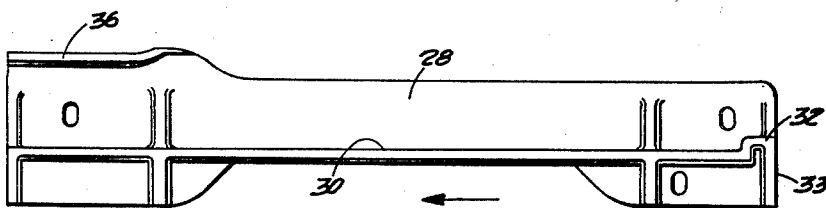


Fig. 2

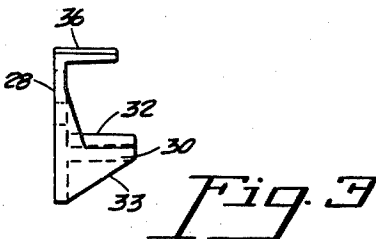


Fig. 3

INVENTOR.
JOHN W. NORRISH.
ALFRED E. NAVE.

BY

Alden D. Redfield,
Robert L. Spencer ATTYS

Jan. 31, 1950

J. W. NORRISH ET AL

2,496,252

REFRIGERATOR CABINET CONSTRUCTION

Filed Dec. 28, 1948

3 Sheets-Sheet 2

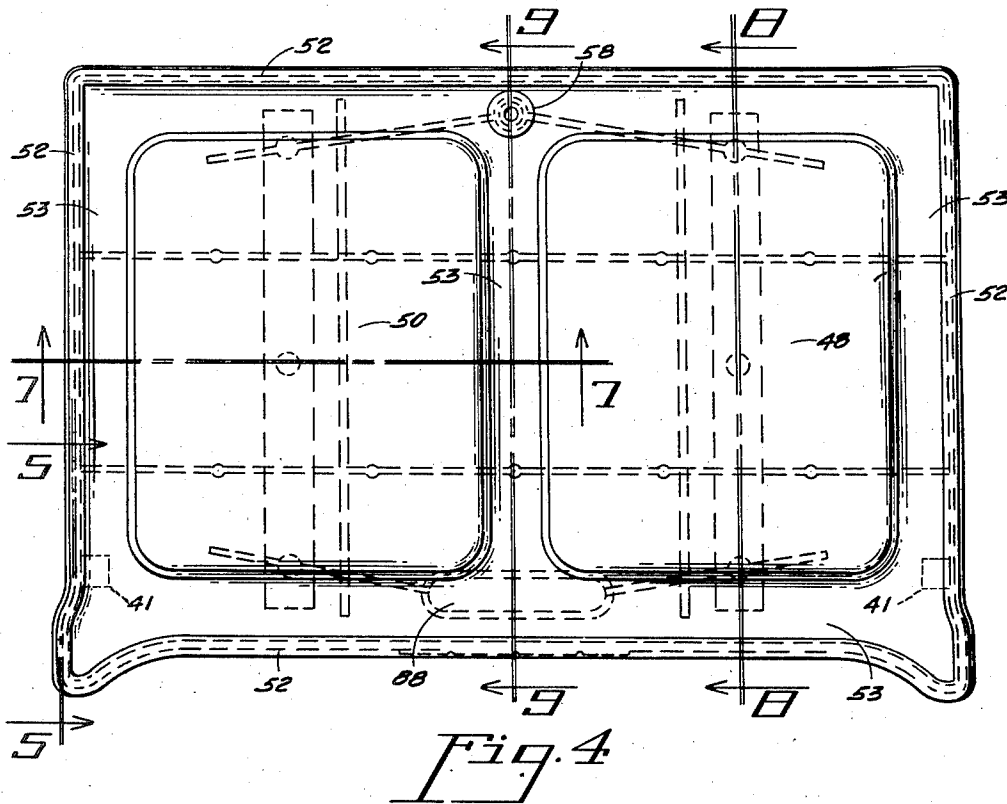
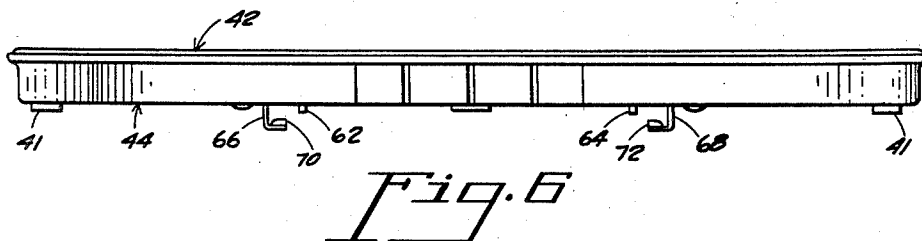
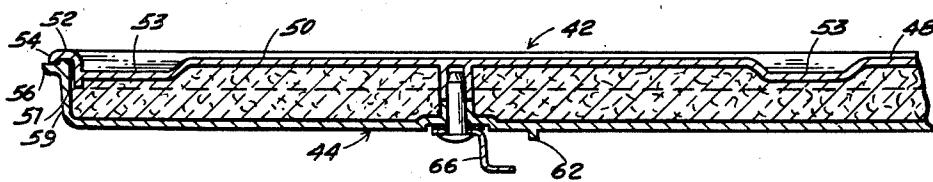


Fig. 7

INVENTOR.
JOHN W. NORRISH.
ALFRED E. NAVE.

BY

Alden D. Redfield.
Robert L. Spencer ATTYS

Jan. 31, 1950

J. W. NORRISH ET AL
REFRIGERATOR CABINET CONSTRUCTION

2,496,252

Filed Dec. 28, 1948

3 Sheets-Sheet 3

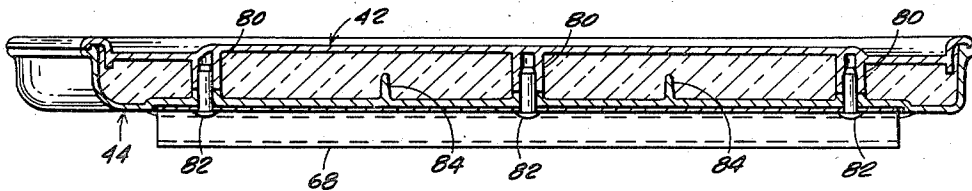


Fig. 8

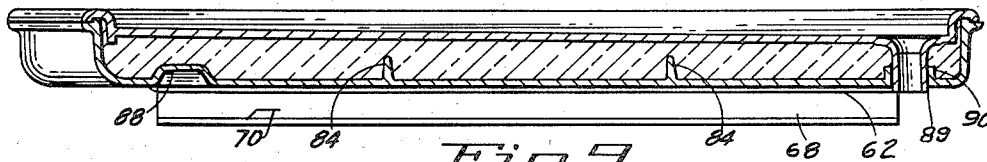


Fig. 9

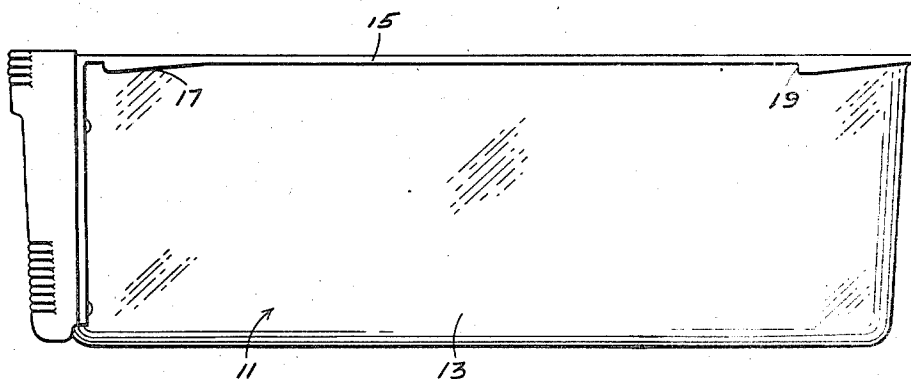


Fig. 10

INVENTOR.
JOHN W. NORRISH.
ALFRED E. NAVE.
BY

Alden S. Redfield,
Robert L. Spencer ATTYS

UNITED STATES PATENT OFFICE

2,496,252

REFRIGERATOR CABINET CONSTRUCTION

John W. Norrish, Lockland, and Alfred E. Nave,
Cincinnati, Ohio, assignors to Avco Manufacturing Corporation, Cincinnati, Ohio, a corporation of Delaware

Application December 28, 1948, Serial No. 67,698

5 Claims. (Cl. 62-89)

1

This invention relates to refrigerators and more particularly to refrigerators of the household type having a readily removable partition adapted to divide the cabinet into two compartments, one compartment having an evaporator disposed therein and providing a freezing chamber, and the other compartment providing a refrigerated chamber for storing foods at above freezing temperatures.

More specifically, this invention relates to an improved partition which is relatively inexpensive to manufacture, to the manner in which the partition is mounted within the cabinet, and to features whereby the partition is peculiarly adapted to support a pan disposed immediately below the partition.

The partition of this invention is preferably formed of a molded material such as a plastic and includes two sections permanently sealed together to prevent moisture from entering the interior thereof. Suitable insulation, such as glass wool, may be disposed within the interior of the partition.

An object of this invention is to provide a novel, removable partition for a refrigerator cabinet which may be quickly and easily inserted in and withdrawn from the cabinet, together with a novel supporting structure having means cooperating with the partition for preventing insertion of the partition into the cabinet beyond a predetermined depth.

A further object of this invention is to provide a partition for a refrigerator cabinet adapted to support a pan beneath the partition and including means for preventing unintentional withdrawal of the partition upon withdrawal of the pan from the cabinet and also including means for preventing unintentional withdrawal of the pan completely from the partition.

A further object of this invention is to provide a refrigerator partition made up of two sections adapted to support a crisper pan in which the partition is constructed and arranged to distribute the load presented by the pan to both sections of the partition.

These and further objects of this invention will be readily apparent from the accompanying description and drawings, when read in conjunction with the claims, in which:

Fig. 1 is a front elevation of a refrigerator cabinet embodying the invention;

Fig. 2 is a front elevation of one of two similar supports used to mount the partition in the cabinet;

2

Fig. 3 is an end view of the support shown in Fig. 2;

Fig. 4 is a plan view of the cabinet partition;

Fig. 5 is an enlarged sectional view taken along the line 5-5 of Fig. 4;

Fig. 5A is a partially sectional view illustrating the details of the mounting arrangement of the pan on the baffle;

Fig. 6 is a front elevation of the partition shown in Fig. 4;

Fig. 7 is an enlarged sectional view taken along the line 7-7 of Fig. 4;

Fig. 8 is an enlarged sectional view taken along the line 8-8 of Fig. 4;

Fig. 9 is an enlarged sectional view taken along the line 9-9 of Fig. 4;

Fig. 10 is a side elevation of a crisper pan adapted to be mounted on the partition element.

In Fig. 1 there is shown a refrigerator cabinet having an outer shell 10 and an inner liner 12 spaced from the outer shell. Suitable insulation such as rock wool may be disposed between the outer shell and inner liner of the refrigerator. The inner shell defines upper and lower compartments 14 and 16 respectively, separated by a partition or baffle 18. An evaporator 20 is positioned in compartment 14 above partition 18, and compartment 16 is cooled by convection currents passing through a gap at the rear of the partition. That is to say, baffle 18 in assembled relationship extends entirely from side wall to side wall of the cabinet but does not extend inwardly completely to the rear wall of the cabinet. The evaporator 20 may be operatively connected to any suitable refrigerating system, not shown. A crisper pan 11 is slidably mounted on partition 18 as hereafter more fully explained. Partition 18 is slidably supported within the cabinet by means of a pair of support members 24 and 26 secured to the side walls of the cabinet. These supports are similar in all respects except that one is a left hand and the other a right hand support.

One of the two similar supports 24 and 26 is illustrated in Figs. 2 and 3. The arrow in Figure 2 designates the direction in which the partition travels in being inserted into the cabinet. The supports are preferably molded of plastic material and include a vertical web 28 and a horizontal flange 30 formed integrally with the web. Each support includes a raised boss 32 extending transversely of the horizontal flange adjacent one end of the flange. This boss is adapted to cooperate with a suitable slot and stop provided in the side wall of baffle 18 to limit the depth to which the baffle may be inserted and also to pre-

3

vent unintentional removal of the baffle from the cabinet as hereafter more fully explained. As further shown in Figs. 2 and 3, each baffle support includes an overhanging horizontal flange 36 adjacent the opposite end of the support from the boss which together with web 28 and horizontal flange 30 forms a C-shaped channel section adjacent one end of the support member to receive the forward end of baffle 18 as the baffle is inserted into the cabinet.

Details of baffle 18 are shown in Figs. 4 through 9. Referring to these figures, partition 18 is shown as including an upper section 42 and a lower dish section 44 which are permanently assembled to provide a moisture proof partition having the suitable insulation within the interior of the partition. As shown, section 42 includes an imperforate base having raised surfaces 48 and 50 provided thereon and includes a raised rim 52 extending completely around the periphery of the section. A downwardly turned flange 54 on rim 52 cooperates with a flange 56 on section 44 to provide a moisture-proof seal between the two members. That is to say, flange 54 cooperates with horizontal flange 56 and a vertical boss 57 formed on the upper edge of side wall 59 of the lower section 44 to provide a water tight joint between the two sections. The joint is preferably cemented with adhesive or solvent so that a continuous bond is achieved. A continuous channel 53 extends between raised surfaces 48 and 50 and between the outer periphery of each of the raised surfaces and rim 52 for collecting moisture and conducting the same to a nozzle 58 formed in section 42 and extending downwardly through the partition to the underside of section 44.

In Fig. 5, section 44 is shown as including a downwardly extending stop member 41 and an upwardly extending channel 43 formed in the bottom of the section and extending transversely of the side wall of the baffle. It will, of course, be understood that similar stop members and channels are provided at each side of the partition.

When the partition 18 is disposed in the cabinet upon supports 24 and 26, the inner end of the partition is inserted into the C-shaped channel provided adjacent the inner end of each support. Stop members 41 on the partition contact a vertically extending web 33 (see Fig. 2) at the outer end of each support member, thereby limiting the depth to which the partition may be inserted into the cabinet. Boss 32, web 33, stop 41 and channel 43 are so positioned that when stop 41 strikes web 33, boss 32 will be disposed in channel 43. Thus, upon inserting the partition into its supports, the depth to which the partition may be inserted is automatically determined and when inserted to the proper depth the partition is adapted to slidably support a pan which will often be withdrawn from the partition at times when it is desirable that the partition itself remain locked in the partition supports. In order to remove the partition from its supports it is necessary to raise the outer end of the partition so that channel 43 is clear of boss 32.

In Fig. 6, lower section 44 of partition 18 is shown as being provided with a pair of downwardly extending guides or ribs 62 and 64 formed integrally therewith and extending in a direction from the front to the rear thereof. Also shown are a pair of support members 66 and 68 secured to the partition. Ribs 62 and 64 serve both to

4

reinforce the partition in a direction from front to rear and to cooperate with the inner walls of the pan to prevent chatter when the pan is inserted and withdrawn from the supports 66 and 68. Supports 66 and 68 are each provided with a raised stop member 70 and 72 respectively, which cooperate with a similar stop 19 on each horizontal flange 15 of pan 11 (shown in Fig. 10) so that partial withdrawal of the pan is permitted but unintentional complete withdrawal thereof is prevented. To completely withdraw the pan from its supports, it is necessary to raise the inner end of the pan to a degree sufficient that stops 19 clear the stops 70 and 72.

Further details of partition 18 are shown in Figs. 8 and 9. As shown in Fig. 8, section 42 of the partition is provided with a series of similar hollow bosses 80, preferably formed integrally with the upper section and extending inwardly into the interior of the partition. These bosses are spaced in rows extending from the front to the rear of the partition and are adapted to receive a plurality of similar screws 82 extending through lower section 44 to secure laterally spaced pan support members 66 and 68 to the bottom of section 44. In this manner, the two sections 42 and 44 are fastened together and any load imposed upon the partition 11 is carried by and distributed across both the upper and lower sections of the partition. Section 44 is further reinforced by means of similar spaced ribs 84 formed integrally therewith and extending transversely from side to side of section 44 within the interior of the partition.

In Fig. 9, the partition is shown as including a hollow nozzle 89 extending downwardly from section 42 with the lower end of the nozzle protruding through a hollow boss 90 formed in section 44. Nozzle 89 permits condensation or other moisture such as that collected upon defrosting of evaporator 20 to be drained from channels 53 into pan 11. The joint between nozzle 89 and boss 90 is preferably cemented with an adhesive or solvent to insure a continuous, moisture-proof bond between the two sections forming the partition. A cavity 88 adapted to receive the fingers of the hand is provided near the outer end of the partition to provide a handle so that the baffle may be easily withdrawn from its supports.

In Fig. 10 the pan 11 includes similar vertical side walls 13, having similar horizontal flanges 15 at the upper edge of each side wall. A stop member 19 is provided (adjacent the inner end of the pan) on the under-surface of the horizontal flanges 15. Stops 19 cooperate with stops 70 and 72 of members 66 and 68 to prevent unintentional removal of the pan from its supports. Members 17 act as wedges to raise the outer end of the pan upwardly so that ribs 62 and 64 extend within the pan adjacent the inner edges of side walls 13. In order to remove pan 11 from its supports, it is necessary to raise the inner end of the pan so that stops 72 and 74 clear stops 19. Due to the shape of the respective stops, pan 11 may easily be inserted within the supports 66 and 68, but cannot be entirely withdrawn from the supports without tilting the pan to provide clearance for the stops.

The association of one of the horizontal flanges 15 of pan 11 and support 66 together with stop 19 in assembled relationship is further illustrated in Fig. 5A, in which the same numbers refer to the same details as shown in Figs. 6 and 10.

By this construction there has been provided a baffle for a refrigerator which may be molded of plastic material and produced economically in large volume. The baffle, though relatively thin, is strong and is arranged so that any load imposed upon the baffle is distributed to both sections of the baffle. The guide means supporting the baffle locks the partition against accidental removal due to the withdrawal of the crisper pan supported upon the partition. The partition also carries stops for preventing unintentional withdrawal of the crisper pan from the baffle. Although the partition is preferably formed of molded sections, it will readily be understood that it may be formed of a pair of stamped rather than molded sections.

While a particular embodiment of this invention has been disclosed and described, it will readily be understood that various changes and modifications may be made therein without departing from the spirit and scope of the appended claims.

Having thus described our invention, we claim:

1. In a refrigerator cabinet having an evaporator positioned in the upper portion thereof, a support member on each of two walls of said cabinet, a partition slidably positioned on said support members dividing said cabinet into upper and lower compartments, a stop on one of said support members, a stop on said partition cooperating with said first-mentioned stop for limiting the depth to which said partition may be inserted in said cabinet, a raised boss on one of said support members, and a channel in said partition cooperating with said boss for preventing unintentional removal of said partition from said cabinet.

2. In a refrigerator cabinet having an evaporator positioned in the upper portion thereof, a support member on each of two walls of said cabinet, a partition slidably positioned on said support members dividing said cabinet into upper and lower compartments, a stop on one of said support members, a stop on said partition cooperating with said first-mentioned stop for limiting the depth to which said partition may be inserted in said cabinet, a raised boss on one of said support members, a channel in said partition cooperating with said boss for preventing unintentional sliding movement of said partition on said supports, a pair of spaced rails on said partition, a pan having horizontal flanges engaging said rails, a stop on one of said rails and a stop on one of said flanges cooperating with said rail stop for preventing unintentional removal of said pan completely from said rails.

3. In a refrigerator cabinet having an evaporator positioned in the upper portion thereof, a support member on each of two walls of said cabinet, a partition slidably positioned on said support members dividing said cabinet into upper and lower compartments in restricted airflow relationship, a stop on one of said support members, a downwardly extending stop formed integrally with said partition cooperating with said first-mentioned stop for limiting the depth to which said partition may be inserted in said

cabinet, a channel on the under side of said partition, a raised boss formed integrally on one of said supports and extending transversely across said support, said channel and downwardly extending stop being so arranged that said boss extends into said channel upon contact of said stop with said first-mentioned support stop whereby unintentional removal of said partition from said cabinet is prevented.

4. In a refrigerator cabinet having an evaporator positioned in the upper portion thereof, a support member on each of two walls of said cabinet, a partition slidably positioned on said support members dividing said cabinet into upper and lower compartments in restricted airflow relationship, a stop on one of said support members, a downwardly extending stop formed integrally with said partition cooperating with said first-mentioned stop for limiting the depth to which said partition may be inserted in said cabinet, a channel on the under side of said partition, a raised boss formed integrally upon one of said supports, said channel and boss being adapted to lock said partition against sliding movement upon contact of said partition and support stop members, a pair of rails on the under side of said partition, stop members on said rails, a pan having horizontal flanges adapted to overlie said rails, and wedge-shaped members on the under-surface of said horizontal flanges, said last-mentioned members providing a contact surface with said rails and cooperating with rail stops to prevent accidental removal of said pan completely from said rails.

5. In a refrigerator cabinet having an evaporator positioned in the upper portion thereof, support members on each of two vertical walls of said cabinet, a partition dividing said cabinet into upper and lower compartments in restricted airflow relationship slidably positioned on said supports, said supports having a vertical web, a horizontal flange contacting the bottom of said partition, and a horizontal flange on the top of said vertical web extending partially along said web forming a C-shaped channel for receiving the inner end of said partition, a raised boss on said first-mentioned horizontal flange extending transversely thereto, a downwardly extending stop member on said supports adjacent said boss, an inwardly extending channel and a downwardly extending stop on said partition, said boss and said channel being positioned to prevent accidental movement of said partition upon contact of said stop members.

JOHN W. NORRISH.
ALFRED E. NAVE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,194,177	Rundell	Mar. 19, 1940
2,353,361	Rosebrook	July 11, 1944
2,425,021	Anderson	Aug. 5, 1947
2,450,305	Shoemaker	Sept. 28, 1948