Oct. 27, 1942. W. A. ELLSWORTH ET AL 2,299,885

ADJUSTABLE SHELF IN COMBINATION WITH REFRIGERATOR COMPARTMENT

Filed April 18, 1941 2 Sheets-Sheet 1

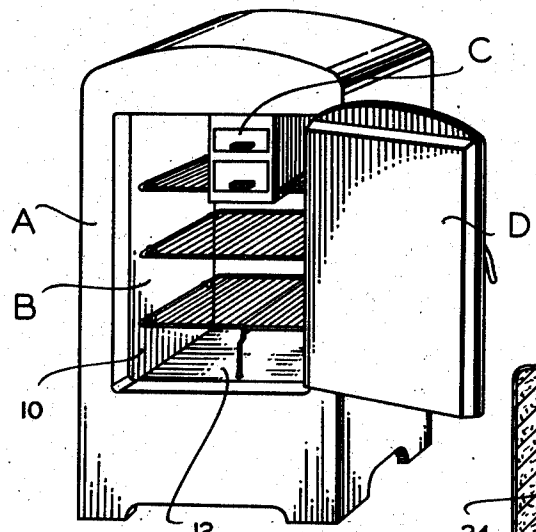


FIG. 1.

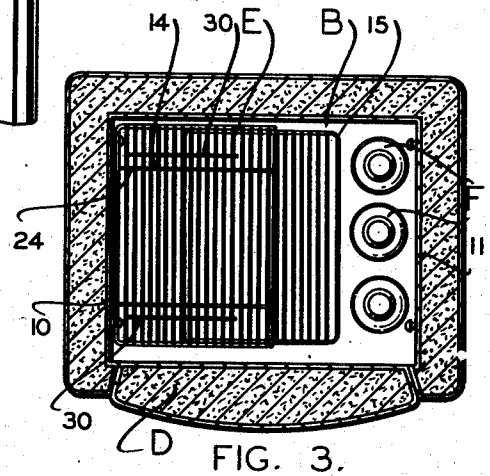


FIG. 3.

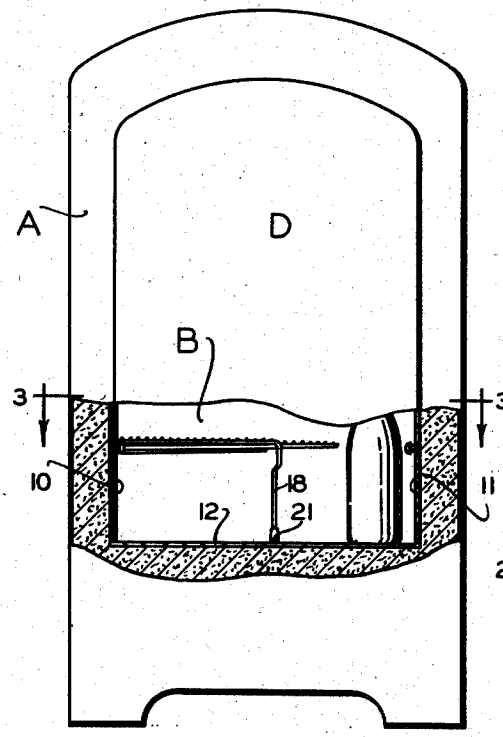


FIG. 2.

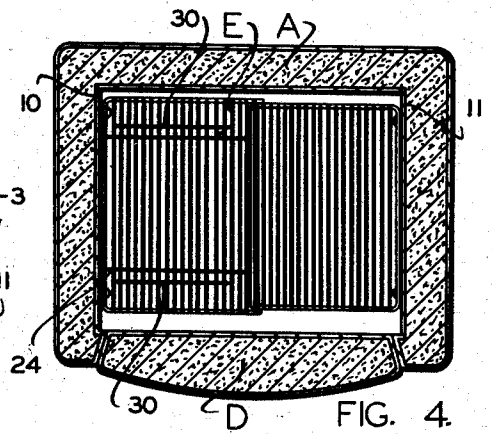


FIG. 4.

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ADJUSTABLE SHELF IN COMBINATION WITH REFRIGERATOR COMPARTMENT

Filed April 18, 1941 2 Sheets-Sheet 2

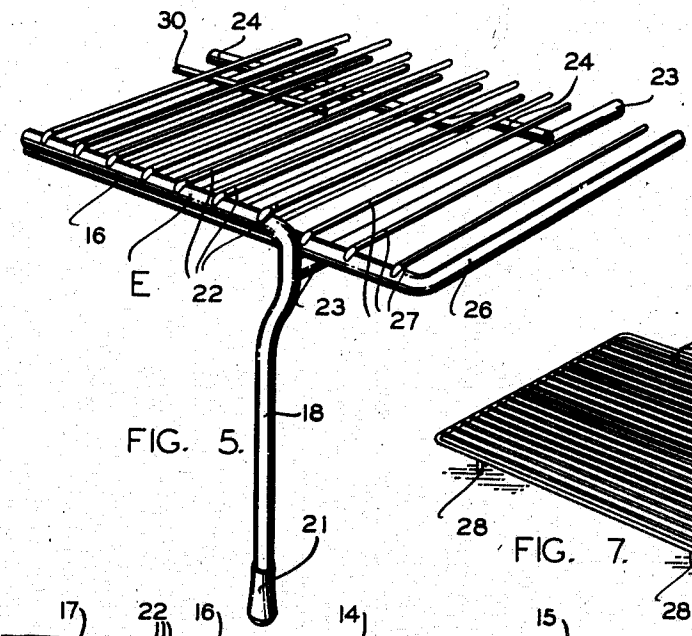


FIG. 5.

FIG. 7.

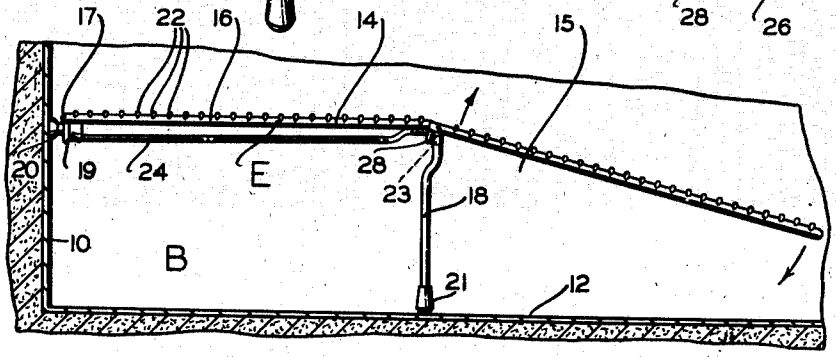


FIG. 6.

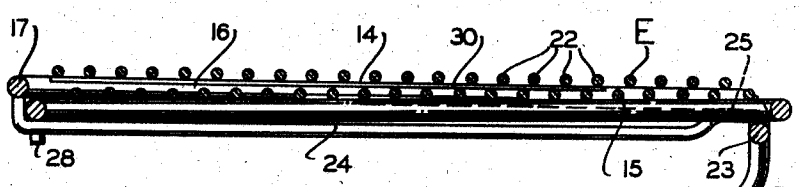


FIG. 8.

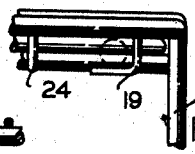


FIG. 9.

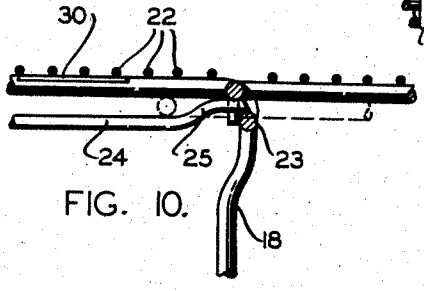


FIG. 10.

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ADJUSTABLE SHELF IN COMBINATION WITH REFRIGERATOR COMPARTMENT

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Application April 18, 1941, Serial No. 389,212

7 Claims. (Cl. 211—153)

Our invention relates to refrigerator compartments and compartments of a like nature, where it is desired to provide shelves within the same for holding articles in the refrigerator compartment.

A feature resides in providing a telescoping or extendable wire shelf which operates extended across the refrigerator compartment rather than from front to back like other shelves have been made heretofore. With a shelf made in this manner, the combination of the refrigerator compartment and shelf provides a clear space from the front to the back of the refrigerator which may be used when the shelf is telescoped together, either partially or entirely, to provide a space for various articles, such as bottles, or larger articles which would ordinarily not go under the shelf.

In using a shelf of this character in combination with a refrigerator compartment, ordinarily this form of shelf is placed adjacent or just above the bottom of the refrigerator compartment. Then when it is desired to utilize more space from the floor of the refrigerator compartment up toward the top, it is only necessary to slide a portion of the telescoping shelf into the fixed portion, thereby providing a clear space from the front to the back in the refrigerator compartment. This feature is important in our invention and will be more fully hereinafter set forth.

It is also a feature of our invention to provide a refrigerator shelf which is adapted to be slid or telescoped together, a degree at a time, so that a larger or smaller space can be made available for taller articles adjacent the end of the shelf.

Further, we provide a refrigerator shelf wherein the respective shelf portions are moved into a position when the shelf is fully extended so that the top surface of the respective portions of the shelf are on the same plane, thereby making the shelf completely level.

We provide a shelf wherein one portion thereof is fixed in the refrigerator compartment by means of connecting one end of the same to the supporting buttons on the side wall of the refrigerator compartment, while the other end is formed with a pair of supporting legs, the bottom end of which are covered with rubber shoes which rest against the floor of the refrigerator compartment. The other portion of our shelf is held slidable to fit within the fixed portion and is also removable therefrom and is provided with short lugs which hold the tray properly elevated from any surface upon which it is resting. This removable portion of the shelf may be used in any suitable manner when entirely removed and may be employed on which to set hot pans or other articles.

These features, together with other details and objects will be more fully and clearly hereinafter set forth.

In the drawings forming a part of this specification:

Figure 1 illustrates a refrigerator showing our shelf in use in the refrigerator compartment thereof, the door of the refrigerator being open.

Figure 2 is a front view of the refrigerator, a portion of the refrigerator being broken away to show the refrigerator compartment and our shelf therein.

Figure 3 is a cross-section on the line 3—3 of Figure 2.

Figure 4 is a cross-section similar to Figure 3, with the portions of the shelf extended to their full width.

Figure 5 is a perspective detail of a portion of our shelf showing one of the legs supporting the free end of the fixed shelf.

Figure 6 illustrates a cross-sectional detail in enlarged form, showing the manner in which the removable portion of our shelf may be removed or inserted in place connected to the fixed portion thereof.

Figure 7 illustrates a perspective view of the removable portion of our shelf disengaged from the refrigerator compartment and resting upon the lugs projecting from the bottom of the same.

Figure 8 is an enlarged detail of a portion of our shelf, showing the parts telescoped together.

Figure 9 illustrates a corner detail of a portion of our shelf, showing one of the hooks which engage the rubber knobs which project from the side wall of the refrigerator compartment to hold the fixed portion of the shelf in the refrigerator.

Figure 10 is a detail of a portion of our shelf, showing the manner in which the respective shelf portions are levelized with their upper surfaces at the same level.

The refrigerator A may be of any form or construction and is provided with a refrigerator compartment B which is cooled by the refrigerating unit C. The refrigerator compartment B is formed with side walls 10 and 11 and a floor portion 12. The compartment B may be closed by the door D.

The refrigerator compartment B may be equipped with any number of shelves and we provide an adjustable wire shelf E which is composed of two portions, namely, a fixed portion 14 and a slidable and removable portion 15.

The fixed portion 14 of our shelf E is normally supported within the refrigerator compartment B in which the shelf E operates, so as to provide a shelf portion which is normally fixed in place but which may be removed when it is desired to clean the refrigerator compartment B. The shelf 14 is formed with a wire frame portion formed from a single piece of wire to form the front and back rails 16 connected on the fixed end adjacent the wall 10 by the rail 17, the free end of said shelf being supported by the legs 18. Thus the side rails 16, the fixed end 17, and the legs 18 are all formed from a single piece of wire bent to provide a rectangular frame which is held by the legs 18 on the free end, and the inner rail portion 17 is held by the hooks 19 engaging over the rubber bracket or button supports 20 projecting into the compartment B from the wall 10. The legs 18 are provided with rubber shoes 21 which rest against the floor 12 of the compartment B. Parallelly disposed shelf wires 22 hold the rails 16 spaced apart and provide the wire shelf portion on which articles are adapted to rest in the refrigerator compartment B. The end extremities of the wires 22 are cut on a bevel and are slightly curved around the upper surface of the rails 16 to which they are welded, thereby providing a smooth or finished joint between the wires 22 and the side rails 16.

The upper ends of the legs 18 are connected by the cross wire 23 which provides a cross rail on which the portion 15 of our shelf E slides when the portion 15 is telescoped into the shelf portion 14 as illustrated in the drawings.

We also provide track rails 24 which are connected to the cross rail 23 on one end and to the rear rail portion 17 of the shelf portion 14. The track rails 24 are bent to be spaced below the side rails 16 and thereby provide a space below the rails 16 for receiving the shelf portion 15 so that the same may telescope into the shelf portion 14.

At the inner free end of the shelf portion 14, the rails 24 are bent with an inclined upwardly extending cam surface 25 which acts to elevate the shelf portion 15 when the same is extended so that the upper surface of the shelf portions 14 and 15 is level, as illustrated in Figure 10.

The shelf portion 15 is removable from the shelf portion 14 and is formed with a wire rail 26 formed of a single piece of wire, the ends of which are welded together, said wire being bent into rectangular shape. Parallelly extending shelf wires 27 are welded to the wire 26 in the same manner as the wires 22 are welded to the rails 16.

The shelf portion 15 may be formed in one form, with four depending lugs 28 which form short legs for supporting the shelf 15 on any surface when it is removed from the portion 14 of the shelf E. Thus the shelf 15 may be used independent of the shelf portion 14 outside of the compartment B, when it is desired to place hot pans, or any other articles on the same, and which may then be placed in the refrigerator compartment B by connecting the shelf portion 15 with the portion 14.

The shelf portion 15 may be formed with only two lugs 28 as illustrated in Figures 5, 6 and 8, which hold the shelf from normally becoming disengaged from the shelf portion 14 as these lugs 28 will strike the cross rail 23, however, the portion 15 may be removed from the portion 14 by lowering one side of the portion 15 as illustrated in Figure 6 and lifting the other side with the lugs 28 free of the rail 23.

A feature resides in providing a shelf which may be adjusted as to width across the refrigerating compartment B of the refrigerator, so that a narrow space may be provided at the free edge of the shelf as illustrated in Figure 3, where a series of bottles can be placed in the narrow opening. It is important that the shelf portion 15 extend beyond the free edge of the fixed portion 14 so as to provide as much shelf space as possible up to the space where the bottles F are stored in the refrigerator. Furthermore, when the shelf portion 15 is in the position illustrated in Figure 3, it is held against the bottom rail 24 and a top wire rail 30 which is secured to the under side of the shelf wires 22. The rail 30 is illustrated in Figures 3, 4, 5 and 8. Thus any weight on the projecting portion of the shelf 15 will be directed against the top rails 30. In this manner, we provide an adjustable shelf E which when opened on its free end (by sliding the portion 15 into the portion 14) provides a space from the front of the refrigerator completely through to the back wall at the free end of the shelf E.

While other adjustable shelves have been made heretofore with a telescoping action, these shelves have not been of the type illustrated herein, and do not provide a space from the front of the refrigerator completely through to the back wall thereof. It is this feature which is of outstanding importance in our invention because it permits larger articles to be placed in the refrigerator compartment adjacent the free edge of the adjustable shelf and gives access to the same without disturbing articles on the fixed portion of the shelf.

Furthermore, with our shelf construction, when larger articles are placed at the free edge of the shelf, it is not necessary to disturb them when getting out articles placed on the main portion of the shelf E. In former shelf constructions it has been necessary to remove the articles from in front of the shelf before articles on the shelf are accessible. We have overcome these disadvantages with our refrigerator construction wherein the free or adjustable end of our shelf is slidable away from one of the side walls of the refrigerator rather than being slidable away from the door opening, so that our shelf in combination with the refrigerator compartment, accomplishes and provides the desired shelf and refrigerator construction.

We claim:

1. A shelf for a refrigerator compartment including a fixed section and a removable section, said removable section being slightly narrower than said fixed section, said fixed section being provided with a pair of legs mounted on the remote side thereof, a cross rail connecting the upper parts of said legs, said removable section being slidably mounted on said fixed section, said fixed section being provided with a pair of track rails, said track rails extending beneath and running parallel to the front and rear of said first section, and said removable section being adapted to slide beneath said fixed section by means of said track rails.

2. A shelf comprising a fixed portion and a slidable portion, said slidable section being slightly narrower than said fixed section, said fixed portion being provided with a pair of legs mounted on the remote side thereof, said fixed portion having a cross rail connected to the up-

per part of said legs on which said slidable portion is adapted to slide, said fixed portion being provided with a pair of track rails extending beneath and running parallel to the front and rear thereof by means of which said slidable section may telescope beneath said fixed portion.

3. An extendible shelf comprising a fixed section and a slidable section, said fixed section having a pair of track rails extending beneath and running parallel to the front and rear of said fixed section, said fixed section having a pair of supporting legs mounted on the remote side thereof, a cross rail connecting the upper part of said legs, said slidable section being adapted to slide on said cross rail to telescope beneath said fixed section and to be held in place beneath said fixed section by means of said track rails, said slidable section being provided with two pairs of lugs, one pair of said lugs providing a means against accidental removal of said slidable section by engaging said cross rail and said two pairs of lugs providing a means of supporting said slidable section entirely removed from said fixed section.

4. An extendible refrigerator shelf including a fixed section and a removable section, said removable section having a pair of depending lugs, said fixed section being provided with a pair of legs mounted on the remote side thereof, said fixed section including a cross rail, said cross rail being adapted to connect said pair of legs and to provide a means by which said removable section may be telescoped beneath said fixed section, said pair of depending lugs on said removable section being adapted to guard against accidental removal of said removable section by engaging said cross rail, and said removable section being adapted to be entirely removed from said fixed section whenever so desired.

5. A refrigerator shelf comprising a fixed section and a slidable section, said fixed section having a pair of track rails extending beneath and running parallel to the side rails of said fixed section, the remote ends of said track rails having an inclined upwardly extending cam surface, said fixed section having a pair of legs mounted on the remote side thereof, a cross rail, said cross rail being adapted to connect the upper ends of said legs, said slidable section extending in a plane substantially level to the top surface of said fixed section when entirely extended from beneath said fixed section by means of the cam surface on said track rails, and said slidable section being adapted to telescope entirely beneath said fixed section and supported beneath said fixed section by means of said track rails.

6. A shelf for a refrigerator cabinet comprising, a fixed section and a slidable section, said slidable section being adapted to be extended outwardly and transversely from beneath said fixed section, said fixed section being provided with a pair of supporting legs mounted on the remote side thereof, said slidable section being provided with a pair of lugs, said fixed section having a cross rail connecting the upper parts of said legs, said lugs adapted to engage said cross rail to prevent accidental removal of said slidable section from said fixed section, said slidable section being adapted to slide entirely beneath said fixed section.

7. A shelf for a refrigerator compartment comprising a fixed section and a slidable section, said fixed section being provided with a pair of supporting legs mounted on the remote side thereof, a cross rail, said cross rail connecting the upper parts of said legs, a pair of track rails, said track rails extending beneath and running parallel to the front and rear of said fixed section, said track rails having an upwardly extending cam surface at the front ends thereof, said slidable section being adapted to slide entirely beneath said fixed section and to be held in place by means of said track rails, and said slidable section being adapted to be extended transversely from beneath said fixed section over said cross rail and to lie in a plane substantially level to the top surface of said fixed section by means of the upwardly extending cam surface on said track rails.

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