April 21, 1942. L. BISHOP 2,280,371

ADJUSTABLE GUIDE FOR REFRIGERATOR SHELVES

Filed Jan. 31, 1941

Fig. 1.

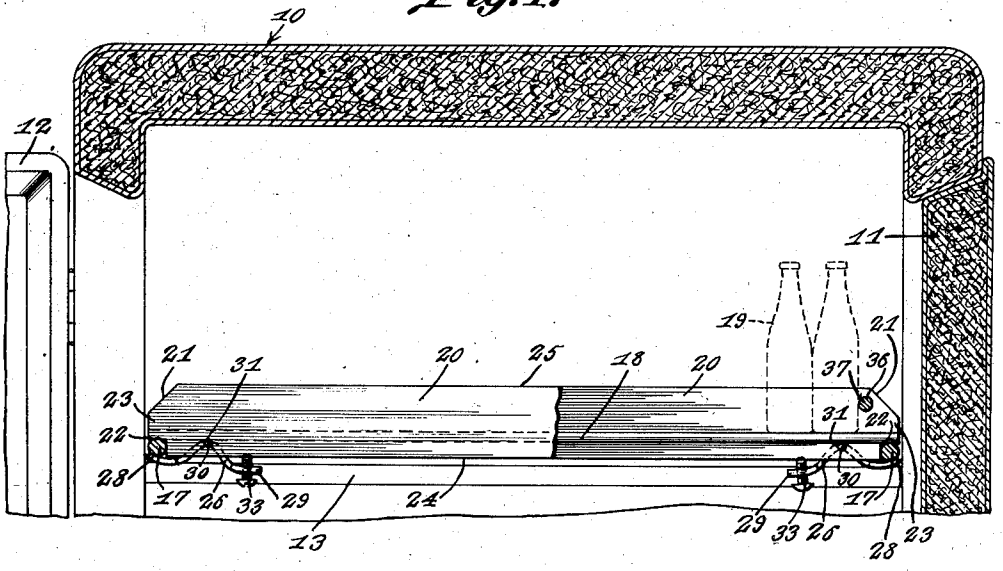


Fig. 2.

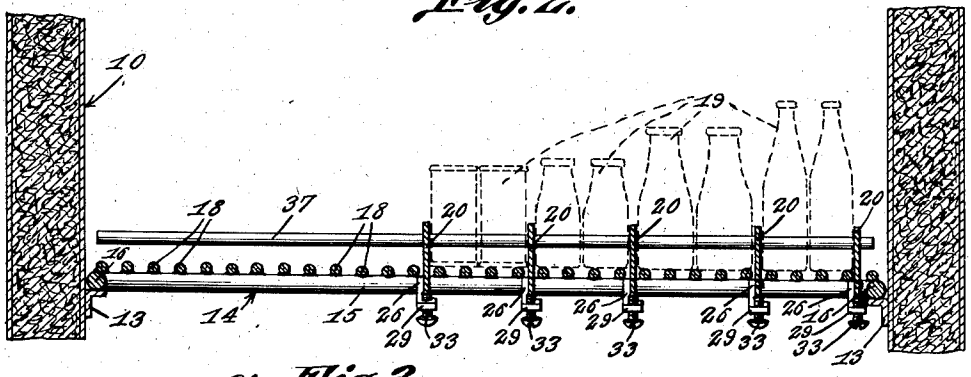


Fig. 3.

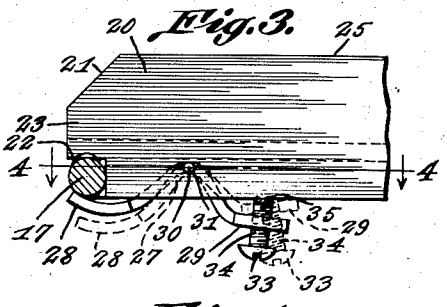


Fig. 5.

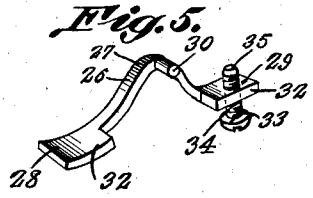
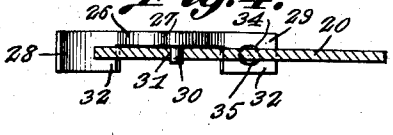


Fig. 4.



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ADJUSTABLE GUIDE FOR REFRIGERATOR SHELVES

Leroy Bishop, Vista, Calif.

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5 Claims. (Cl. 211—153)

My invention relates broadly to new and useful improvements in refrigerators, and more particularly to refrigerator shelves having adjustable guides associated therewith.

An important object of my invention is to provide a refrigerator shelf having guides associated therewith in a manner to hold the various articles supported by the shelf in a neat and orderly manner, the said guides being adjustable to properly accommodate varying sizes of cans, bottles, and the like, as the occasion demands.

Another object of my invention is to provide a refrigerator shelf of the above-mentioned character wherein the guides are separately readily removable so that only such guides as are actually required need be applied to the shelf.

Still another object of my invention is to provide a shelf construction that is particularly adapted to be incorporated in a large commercial type of refrigerator having front and rear doors. In this type of refrigerator the articles are placed on the shelf from the rear and as each article is placed on the shelf the articles previously placed thereon are pushed toward the front. If no guides are provided, the line or column of goods has a tendency to buckle thus rendering it extremely difficult to stock the shelf in an orderly and compact manner. My invention, therefore, contemplates a shelf construction that will guide and direct the column of goods as the same is advanced from the rear toward the front of the refrigerator thus greatly expediting the stocking of the shelf with food stuffs.

Other objects and advantages of my invention, will be apparent during the course of the following description.

In the drawing, forming a part of this specification, and wherein like numerals are employed to designate like parts throughout the same,

Figure 1 is a vertical transverse sectional view taken through the front and rear walls of a refrigerator having a shelf construction embodying my invention incorporated therewith,

Figure 2 is a vertical transverse sectional view taken through the side walls of the refrigerator and showing my improved shelf construction associated therewith,

Figure 3 is a fragmentary side elevational view of one of the guide plates comprising a part of my invention and showing the association of the same with the supporting frame of the refrigerator shelf,

Figure 4 is a transverse sectional view taken on the line 4—4 of Figure 3, and

Figure 5 is a perspective view of the clamping means for holding the guide plates detachably associated with the supporting frame.

In the accompanying drawing, wherein for the purpose of illustration, is shown a preferred embodiment of my invention, the numeral 10 designates a conventional refrigerator construction. My shelf construction may be incorporated in any of the conventional types of refrigerators, however, I have here illustrated the same as being associated with a large commercial type refrigerator having front and rear doors 11 and 12. All standard refrigerator constructions have provision for supporting a plurality of vertically spaced shelves therein. I have here illustrated the supporting means as comprising angle-irons 13 which extend horizontally along the side walls of the refrigerator with one flange thereof extending normally to the wall to support a shelf 14.

The shelf comprises a continuous band or rod 15 including side members 16 which extend along the inner side walls of the refrigerator and which are supported by the extending flange of the angle-irons. The opposite ends of the side members are joined by integral front and rear members 17 which extend along the inner face of the front and rear walls of the refrigerator and in bridging relation with the door openings. A plurality of relatively smaller rods 18 are supported in bridging relation relative to the front and rear members 17 of the supporting frame and in laterally spaced parallel relation with each other. The rods 18 are arranged sufficiently close together to support the articles 19 normally contained within the refrigerator.

In the commercial type refrigerator here illustrated, the various articles are generally introduced through the rear door 12 and the articles of similar character are generally arranged in rows extending from the front to the rear thereof in a neat and orderly manner. In any refrigerator having a large capacity where a large number of articles are stored and where it is necessary to have frequent access thereto, it is also extremely important that the articles be arranged compactly. As the articles are pushed forwardly from the rear toward the front of the refrigerator the line of cans or bottles has a tendency to buckle thus permitting the individual cans comprising the line to disperse in a disorderly manner across the shelf. The occurrence of such a contingency requires that considerable labor and time be expended to again arrange the goods in an orderly manner.

I have, therefore, provided a plurality of guide plates 20 which are uniquely adapted to extend

in spaced parallel relation with each other and with their opposite ends supported by the front and rear members 17 of the supporting band 15. Suitable clamp means are carried by each of the guide plates for detachably connecting the same to the members whereby they may be adjusted laterally relative to each other to properly accommodate varying sizes of the articles 19.

All of the guide plates are similar in their construction and it is therefore thought that a detailed description of but one will suffice. The plate 20 comprises a vertically disposed essentially rectangular member of sheet metal or the like having its upper corners chamfered, as at 21, and its lower corners cut away, to provide seats 22 accommodating the front and rear supporting members 17. The overhanging ends 23 of the guide rest upon the supporting members 17 and terminate substantially flush with the front and rear edges of the shelf while the lower edge 24 thereof terminates flush with the lower periphery of the members. The upper edge 25 of the guide plate extends substantially above the shelf in a manner to engage the bottom portions of the articles 19 and to provide channels or guideways between the adjacent guide plates which extend the full depth of the refrigerator.

Each of the guide plates is provided at its opposite ends with a clamp 26 which is formed with an inverted U-shaped middle portion 27 having its opposite ends 28 and 29 curving outwardly and upwardly. The U-shaped middle portion is provided at its apex with a laterally extending shank 30 which is pivotally received within an opening 31 adjacent the lower edge of the plate. The opposite ends 28 and 29 of the clamp extend downwardly below the lower edge 24 of the guide plate and each end is provided with a lateral extension 32 which extends beneath the said bottom edge. The end 29 of each of the clamps is provided with an adjusting screw 33. The screw-threaded shank 34 of the screw extends upwardly and the distal end thereof is cupped, as at 35, to assure fixed engagement thereof with the lower edge of the guide plate and actuation of the screw operates to move the cupped end of the shank into and out of engagement therewith.

When the guide plate is connected with the supporting band 15, the adjusting screws 33 carried by the clamps disposed at its opposite ends are unthreaded until the cupped upper ends 35 thereof are substantially flush with the inner face of the clamp. When the screws are in the above position the clamps may be rocked about their pivots and made to assume the dotted line position illustrated in Figure 3. The curved outer end 28 of the clamps may then be slipped under the front and rear members 17 of the band and, when the adjusting screws are threaded inwardly, the end 35 of the screws will engage the lower edge of the guide plate and rock the clamps about their pivots to move the outer ends 28 thereof from the dotted line position and into pressed engagement with the bottom of the members 17. It may thus be seen that any number of the guide plates may be attached to the shelf and that they may be suitably spaced to accommodate any size of article therebetween.

I have found it expedient to provide the ends of the guide plates adjacent the front door 11 of the refrigerator with aligning openings 36 which receive a transversely extending rod 37. The rod 37 operates as a stop member and prevents the articles 19 from being pushed forwardly of the shelf and against the inner face of the front door of the refrigerator. It frequently happens that the person introducing the articles through the rear door is not aware of the fact that the foremost article is resting against the front door and when the front door is opened the foremost articles fall from the refrigerator with a resulting breaking of the bottles or damage to the cans. The stop rail 36 is adapted to prevent the occurrence of such an event. The rail is preferably removable to permit the guide plates to be independently inserted or removed from the shelf construction and its removal is readily effected by pulling the frame 15 forwardly on the supporting angles 13 until the rod is moved to a position in front of the refrigerator. The rod may then be easily slipped laterally through the openings 36 and guide plates may be added or removed from the shelf assembly as desired. It is obvious that when the assembly is disposed within the refrigerator, the guide plates will direct the travel of the articles as they are pushed forwardly along the rods 18 and that the stop rail 36 will prevent the foremost articles from being pushed against the door 11. The guide plates will prevent buckling of the line or column of articles and assure their arrangement on the shelf in a neat and orderly manner.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of my invention, or scope of the appended claims.

Having thus described my invention, I claim:

1. In a shelf construction having transverse front and rear supporting members, vertical guide plates bridging the members and having a portion thereof extending above the members, and clamps pivotally mounted at the opposite ends of each of the plates, each of said clamps having a part extending at one side of its pivot to engage the adjacent supporting member and a part extending at the other side of its pivot having provision for holding the said first part in pressed engagement with its respective member.

2. In a shelf construction having transverse front and rear supporting members, vertical guide plates bridging the members and having a portion thereof extending above the members, clamps pivotally mounted at the opposite ends of each of the plates, each of said clamps having a part extending at one side of its pivot to engage the adjacent supporting member and a part extending at the other side of its pivot, and adjustable means coactive with the last-mentioned part of the clamp and with the guide plate for holding the said first-mentioned part of the clamp in pressed engagement with its respective supporting member.

3. In a shelf construction having transverse front and rear supporting members, vertical guide plates bridging the members and having a portion thereof extending above the members, clamps pivotally mounted at the opposite ends of each of the plates, each of said clamps having a part extending at one side of its pivot to engage the adjacent supporting member and a part extending at the other side of its pivot, and an adjusting screw carried by the last-mentioned part of each of the clamps movable into engagement with the guide plates for rocking the clamps about their pivots and for moving the first-men-

tioned ends thereof into clamping engagement with the said supporting members.

4. In a shelf construction, a pair of spaced parallel supporting members, a plurality of parallel guide plates bridging the supporting members, parts of which plates extend above the said members, means detachably clamping each of the plates to the supporting members, and a stop rail removably received within aligning openings at one end of the plates and extending in vertically spaced parallel relation with one of the said supporting members.

5. In a refrigerator shelf construction having transverse front and rear supporting rod members, a plurality of laterally spaced vertical guide plates bridging the rod members and extending thereabove to provide guideways to hold articles upon the shelf in straight rows, said plates having the lower corners of their ends cut away to provide seats receiving the rod members for the ends of the plates to terminate flush with the outer sides thereof and for the lower longitudinal edges of the plates to terminate flush with the under sides of the rod members, and clamp means detachably connecting the plates to said rod members and being adjustable to permit lateral shifting of the plates.

LEROY BISHOP.