Oct. 5, 1937. A. B. GATES 2,095,130

SHELF FOR REFRIGERATOR CABINETS

Filed July 6, 1935

Fig. 1.

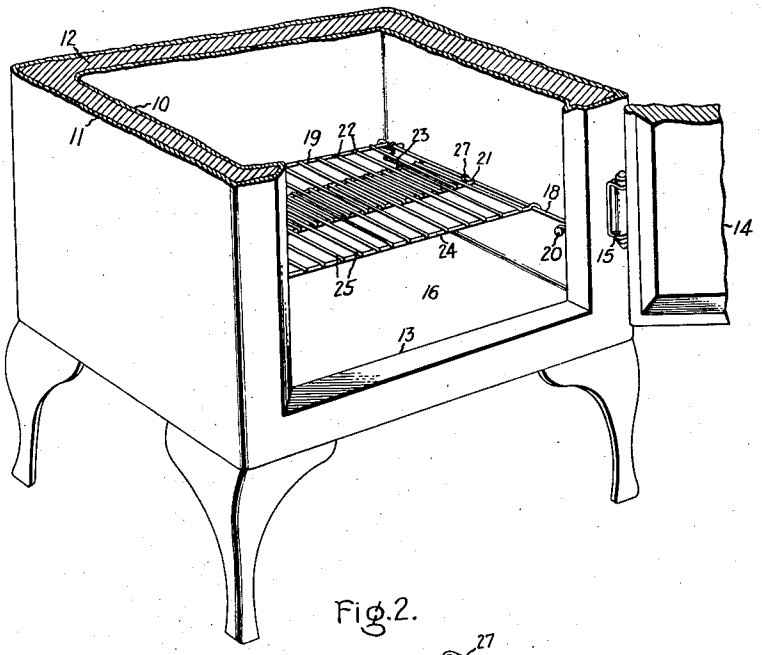


Fig. 2.

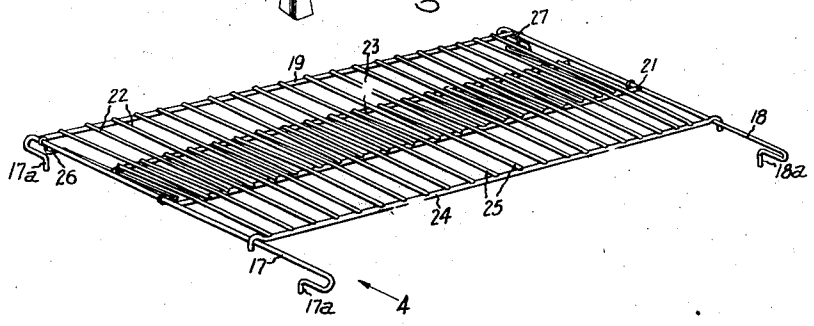


Fig. 3.

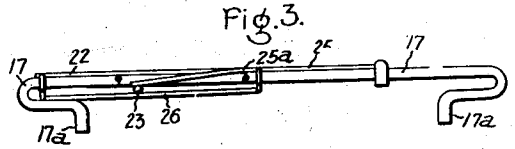
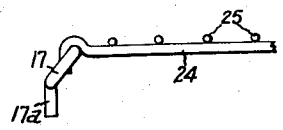


Fig. 4.



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SHELF FOR REFRIGERATOR CABINETS

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5 Claims. (Cl. 211—153)

My invention relates to shelves for refrigerator cabinets or the like, and more particularly to extensible shelf assemblies.

It is an object of my invention to provide an extensible shelf assembly, the parts of which are moved into and out of telescoping relation and in which the parts are arranged in such manner that articles supported on one of the parts are automatically transferred to the other part when the parts are moved into telescoping relation.

Further objects and advantages of my invention will become apparent as the following description proceeds, and the features of novelty which characterize my invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of my invention, reference may be had to the accompanying drawing, in which Fig. 1 is a perspective view of the lower portion of a refrigerator cabinet provided with an extensible shelf assembly embodying my invention; Fig. 2 is a perspective view of the extensible shelf assembly shown in Fig. 1; Fig. 3 is a side view of the shelf assembly shown in Figs. 1 and 2, a portion of the side bar being broken away; and Fig. 4 is a fragmentary front view of a portion of the shelf shown in Figs. 1, 2, and 3, as viewed in the direction of the arrow 4 in Fig. 2.

Referring to the drawing, I have shown in Fig. 1 the lower portion of a household type refrigerator cabinet having inner and outer sheet metal walls 10 and 11 respectively which are separated by a layer of heat insulation 12. The front of the cabinet is provided with an opening 13 adapted to be closed by a door 14 hinged as at 15 to the outer cabinet wall 11. The cooling compartment 16 of the refrigerator thus formed is provided with an extensible shelf assembly embodying my invention. This shelf assembly includes an open front border frame of a pair of horizontal longitudinally extending side bars or members 17 and 18 made of stiff wire or the like, the rear ends of which are connected by a horizontal transverse bar 19. The ends of the bar 19 are welded, or otherwise rigidly secured, to the rear portions of the longitudinal bars 17 and 18.

Both ends of the bars 17 and 18 are bent in a U-shape and, as best shown in Fig. 4, the plane of the U-shaped bend makes an angle with the vertical plane passing through the associated longitudinal bars 17 and 18. The outer legs of the U-shaped bends form a four-point support for the border frame. The outer leg of each U-shaped bend formed in the ends of the rods 17 and 18 rests on a suitable supporting stud 20 secured to the inner wall 10 of the refrigerator. The ends of the outer legs of the U-bends are turned down at 17a and 18a to engage the studs 20 so as to prevent the frame from shifting on the studs. The longitudinal bars 17 and 18 are thus supported out of contact with the adjacent inner side walls 10 of the compartment 16.

The rear portion of the border frame described above is constructed to provide a fixed shelf. This fixed shelf includes a second transverse bar 21, the ends of which are welded to the longitudinal bars 17 and 18 intermediate their ends, and a series of longitudinal bars 22 arranged in spaced relation with their opposite ends welded to the transverse bars 19 and 21. A second shelf is slidably supported on the border frame and is movable into and out of telescoping relation with the fixed shelf formed by the longitudinal bars 22 and transverse bars 19 and 21. This slidable shelf includes a pair of transverse bars 23 and 24, and a series of longitudinal bars 25 arranged in spaced relation in the spaces between the longitudinal bars 22. The opposite ends of the bars 25 are welded or otherwise rigidly secured to the transverse bars 23 and 24. The opposite ends of the bar 24 are bent downwardly about the rods 17 and 18 forming open face hooks in order to prevent lateral displacement of the slidable front shelf.

The bar 23 which forms the rear edge of the frame of the slidable front shelf is arranged to move below the upper surface of the bars 22 of the fixed rear shelf in such manner that articles carried on the movable front shelf will be automatically transferred to the fixed rear shelf when the shelves are moved into telescoped relation. In the illustrative form of my invention, a pair of guide bars 26 and 27 carried by the longitudinal bars 17 and 18 respectively are provided for supporting the opposite ends of the transverse bar 23, the ends of the latter being located within the sides of the border frame. The opposite ends of the bars 26 and 27 are bent over the adjacent portions of the bars 17 and 18 and are welded or otherwise rigidly secured thereto. The guide bars 26 and 27 are located below the rear portions of the bars 17 and 18 respectively, and within the border frame. The rear portions of the guide bars 26 and 27 are spaced a greater distance below the adjacent portions of the bars 17 and 18 than the front portions thereof, so as to provide a support inclined from the front to the rear for supporting the rear edge of the front shelf. It will thus be seen when the movable shelf is moved into telescoping relation with the rear fixed shelf that the rear edge of the movable shelf formed by the transverse bar 23 will move downwardly along the supporting bars 26 and 27 below the surface of the major portions of the bars 22 forming the supporting portion of the rear shelf. The rear portions of the bars 25 are bent downwardly at 25a adjacent the transverse bar 21. The bars 25 move across the top of the transverse bar 21, and since the bars 22 and 25 are of approximately the same depth, the portion

of the front shelf passing over the bar 21 will be flush with the rear shelf while the rear portion of the front shelf will move to a position below the rear shelf. That is, the portion of the front shelf adjacent the front edge of the rear shelf is substantially coplanar therewith. Any article supported on the bars 25 of the front shelf will be transferred to the rods 22 of the rear shelf while any article supported on the rods 22 will remain unaffected, when the shelves are moved into telescoped relation. When the shelves are again moved into an extended position, any article supported on the rear portion of the rods 22 will remain unaffected by the movement of the front shelf. By suitably dimensioning the fixed and movable shelves, described above, I can obtain an extensible shelf construction, which in its most extended position, occupies substantially the entire cross-sectional area of the cabinet, thus affording a maximum of shelf area for the support of articles to be stored thereon. On the other hand, in the contracted or telescoped position of the parts of the shelf, storage space is afforded both for articles placed on the rearmost or fixed part and for articles requiring extra overhead clearance which may be placed on the bottom of the cabinet. Thus, by using one or more of the shelf assemblies of my invention in the cabinet, articles of various heights greater than the vertical spacing of the shelves may be stored, while the maximum of shelf space is provided at all times for articles of lesser height. In changing the shelf area available in my extensible shelf assembly, the articles supported thereon will not be tipped over or otherwise disturbed by the relative movement of the fixed and movable shelves, making up my extensible shelf assembly.

While I have shown a particular embodiment of my invention in connection with a refrigerator cabinet, I do not desire my invention to be limited to the particular construction shown and described, and I intend in the appended claims to cover all modifications within the spirit and scope of my invention.

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

1. An extensible shelf assembly comprising a border frame, a fixed shelf at the rear portion of said frame, a second shelf movable with respect to said fixed shelf, and means for supporting said second shelf in a position in which the upper surface of the portion of said second shelf forwardly of the front edge of said fixed shelf is substantially coplanar with the upper surface of said fixed shelf and in which the upper surface of a major portion of said second shelf rearwardly of the front edge of said fixed shelf is located below the upper surface of said fixed shelf when said shelves are arranged in telescoped relation.

2. An extensible shelf assembly comprising a border frame including a pair of longitudinally extending side members, a fixed shelf at the rear portion of said frame, a second shelf movable with respect to said fixed shelf, and means including a guide bar secured to the side of each of said longitudinal side members for supporting said second shelf in a position in which the upper surface of the portion of said second shelf forwardly of the front edge of said fixed shelf is substantially coplanar with the upper surface of said fixed shelf and in which the upper surface of a major portion of said second shelf rearwardly of the front edge of said fixed shelf is located below the upper surface of said fixed shelf when said shelves are arranged in telescoped relation.

3. An extensible shelf assembly comprising a border frame including a pair of longitudinally extending side members, a fixed shelf at the rear portion of said frame, a second shelf movable with respect to said fixed shelf, and means for supporting said second shelf in a position in which the upper surface of the portion of said second shelf forwardly of the front edge of said fixed shelf is substantially coplanar with the upper surface of said fixed shelf and in which the upper surface of a major portion of said second shelf rearwardly of the front edge of said fixed shelf is located below the upper surface of said fixed shelf when said shelves are arranged in telescoped relation, said means including a guide bar secured to the lower side of each of said longitudinal side members, the rear end of each of said guide bars being spaced a greater distance below said longitudinal side members than the front end thereof.

4. An extensible shelf assembly comprising a border frame, a fixed shelf including a plurality of longitudinally extending bars arranged in spaced relation, said fixed shelf being at the rear portion of said border frame, a second shelf including a rectangular frame slidably mounted for movement on said border frame into and out of telescoping relation with said fixed shelf, said second shelf including a plurality of longitudinally extending bars arranged in spaced relation in the spaces between said first mentioned bars, and means for supporting said second shelf in a position in which the upper surface of the portion of said second shelf forwardly of the front edge of said fixed shelf is substantially coplanar with the upper surface of said fixed shelf and in which the upper surface of a major portion of said second shelf rearwardly of the front edge of said fixed shelf is located below the upper surface of said fixed shelf when said shelves are arranged in telescoped relation.

5. An extensible shelf assembly comprising a border frame, said border frame including a pair of longitudinal side bars and a transverse bar secured to the rear portions of said longitudinal side bars, a fixed shelf including a plurality of longitudinally extending bars arranged in spaced relation, a fixed transverse bar secured to the intermediate portions of said longitudinal side bars, said longitudinally extending bars of said fixed shelf being secured in spaced relation on said transverse bars, a second shelf including a rectangular frame, said second shelf including a plurality of longitudinally extending bars arranged in spaced relation in the spaces between said longitudinally extending bars of said fixed shelf, said plurality of longitudinally extending bars of said second shelf being provided with a bend intermediate their ends to form front and rear shelf portions, and means for supporting said second shelf in a position in which the front portion thereof adjacent the front edge of said fixed shelf is substantially coplanar therewith and in which the rear edge of said frame of said second shelf is located below the upper surface of said fixed shelf when said shelves are arranged in telescoped relation, said means including a guide bar secured to the lower side of each of said longitudinal side bars of said border frame, the rear end of each of said guide bars being spaced a greater distance below said longitudinal side bars than the front end thereof.

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