Oct. 13, 1936. R. A. HEIM 2,057,429

ADJUSTABLE SHELF

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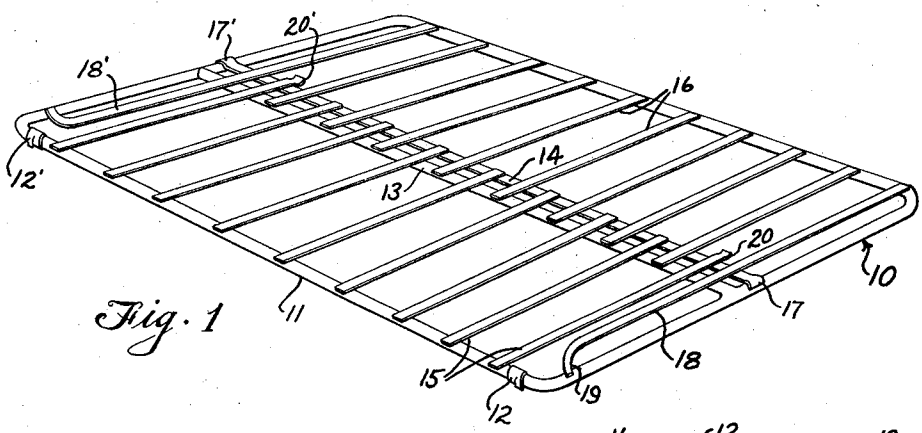


Fig. 1



Fig. 4

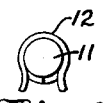


Fig. 6

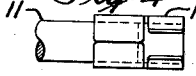


Fig. 5

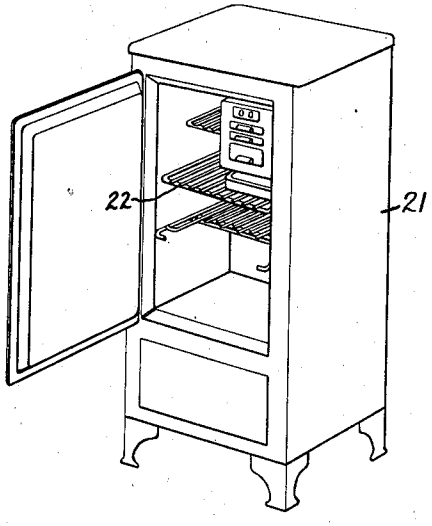


Fig. 3

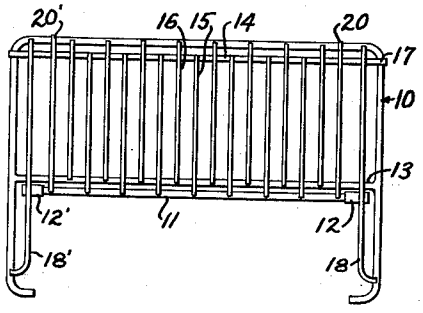


Fig. 2

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ADJUSTABLE SHELF

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10 Claims. (Cl. 211—153)

This invention relates to cabinet shelves and more particularly to an adjustable shelf for household refrigerators.

Refrigerator cabinets are generally provided with a sufficient number of shelves so spaced as to afford maximum usable shelf area. On account of the various sizes and changing combinations of articles stored in a refrigerator, it is difficult to provide a fixed shelf arrangement that meets all requirements. In order to increase the flexibility of the shelf arrangement it has been the practice to provide one or more shelves comprising two or more separate sections which are individually removable to facilitate reception of odd size receptacles or a greater number of bottles. When such shelf sections are removed from the cabinet they become a nuisance and are easily mislaid or even lost.

It is an object of the present invention to provide an adjustable shelf for refrigerator cabinets comprising sections that may be telescoped to reduce the shelf area and thus admit receptacles of greater height than the height of the shelf above the bottom of the cabinet or the next lower shelf. The invention, together with its objects and advantages, will be more fully understood by reference to the following description taken in connection with the accompanying drawing, in which,

Fig. 1 is a perspective of a shelf embodying the invention;

Fig. 2, a plan view showing the shelf sections in completely telescoped relation;

Fig. 3, a perspective of a refrigerator provided with a shelf contemplated by the invention; and

Figs. 4, 5, and 6, three detail views of the shelf clip indicated in Fig. 1.

Referring to the drawing, the shelf is of the general type comprising essentially a wire or rod frame supporting a plurality of parallel crossbars or ribbons which extend from the front to the rear of the shelf when the latter is mounted in a refrigerator cabinet as shown in Fig. 3. Since the cabinet is substantially rectangular, the shelf frame 10 is also rectangular to fit within the storage compartment of the cabinet and is provided with a center rod 13. That portion of the frame forming the front edge of the shelf comprises a separate rod 11 provided at its ends with spring clips 12 and 12' for normally engaging the ends of the main frame 10 as shown in Fig. 1. One of the spring clips 12 is illustrated in detail by three views in Figs. 4, 5, and 6 and comprises a body portion secured around the end of the separate frame rod 11 and an extending clip portion adapted to engage an inwardly bent end of the main frame rod 10.

At the ends of the frame 10 are single cross bars or ribbons 18 and 18' having curved ends, as indicated at 19, which are secured to the end rods of the frame and are supported at a point intermediate the ends by the center rod 13. The cross bars 18 and 18' extend substantially across the full width of the frame at its ends and constitute guide members. The rear section of the shelf is completed by a plurality of parallel crossbars or ribbons 16 secured at opposite ends on the rear rod of the frame 10 and the center rod 13.

The front section of the shelf is completed by a plurality of similar parallel crossbars or ribbons 15 attached at opposite ends to the separate frame rod 11 and a slide bar 14. The latter extends beneath the rear ribbons 16 and its ends 17 and 17' are bent up and over the side rods of the frame 10 in sliding engagement therewith. The front ribbons 15 are spaced the same distance as the rear ribbons 16, but are so located as to interdigitate therewith as shown. Two of the front ribbons 15 are longer than the others and project slightly beyond the slide bar 14, these projections 20 and 20' being slightly upturned to extend over the rear rod of the main frame 10 in frictional or resilient engagement therewith when the front shelf section is telescoped into the rear section as shown in Fig. 2 and hereinafter described.

The shelf may be mounted in a refrigerator cabinet 21, as illustrated in Fig. 3, and secured in position in any desired manner as by shelf hooks, not shown, for supporting the shelf frame 10. Assuming that it is desirable to place articles such as bottles in the bottom of the storage compartment of the refrigerator 21 which are taller than the distance of the lower shelf above the bottom of the compartment, the front rod 11 is lifted to disengage the clips 12 and 12' from the main frame 10 and, with the ends 17 and 17' of the slide bar 14 riding on the side rods of the main frame 10, the front section of the shelf may be shoved to the rear in telescopic relation with the rear shelf section until the friction members 20 and 20' engage the rear rod of the frame 10 as shown in Figs. 2 and 3. In this position the front section is retained securely by the friction members 20 and 20' until it is desired to again extend the shelf to the normal position. The crossbars or ribbons 15 and 16 lie between each other in the same plane, forming a single shelf section. Retraction of the front shelf section into the rear section as just described leaves a space in the front of the refrigerator cabinet from the bottom thereof to the next higher shelf 22 as shown in Fig. 3, in which space may be placed the taller articles such as bottles.

It will be obvious to those skilled in the art that various other changes may be made in the construction and arrangement without departing from the spirit of the invention and therefore the invention is not limited to what is shown

in the drawing and described in the specification but only as indicated in the following claims.

I claim:

1. A shelf for a refrigerator cabinet comprising, a rectangular wire rod frame having one side formed by a separate rod and a center rod connected between the ends of the frame, a spring clip at each end of said separate rod for removably securing said rod in a definite position, a plurality of parallel crossbars on said center rod and the other side of said frame forming a first shelf section, a slide bar extending transversely beneath said crossbars and having its ends slidable on the ends of said frame, and a plurality of parallel crossbars on said slide bar and said separate frame rod forming a second shelf section, the crossbars of said shelf sections being interdigitated so that said sections may be telescoped upon release of said separate frame rod.

2. A shelf for a refrigerator cabinet comprising, a rectangular wire rod frame having one side formed by a separate rod and a center rod connected between the ends of the frame, a spring clip at each end of said separate rod for removably securing said rod in a definite position, a plurality of parallel crossbars on said center rod and the other side of said frame forming a first shelf section, a slide bar extending transversely beneath said crossbars and having its ends slidable on the ends of said frame, a plurality of parallel crossbars on said slide bar and said separate frame rod forming a second shelf section, the crossbars of said shelf sections being interdigitated so that said sections may be telescoped upon release of said separate frame rod, and means for securing said shelf sections in the telescopic position.

3. A shelf for a refrigerator cabinet comprising, a rectangular wire rod frame having one side formed by a separate rod and a center rod connected between the ends of the frame, a spring clip at each end of said separate rod for removably securing said rod in a definite position, a plurality of parallel crossbars on said center rod and the other side of said frame forming a first shelf section, a slide bar extending transversely beneath said crossbars and having its ends slidable on the ends of said frame, a plurality of parallel crossbars on said slide bar and said separate frame rod forming a second shelf section, the crossbars of said shelf sections being interdigitated so that said sections may be telescoped upon release of said separate frame rod, and a resilient projection from said second shelf section adapted to frictionally engage said first shelf section in the telescopic position.

4. A shelf for a refrigerator cabinet comprising, a rectangular wire rod frame having one side formed by a separate rod and a center rod connected between the ends of the frame, a spring clip at each end of said separate rod for removably securing said rod in a definite position, a plurality of parallel crossbars on said center rod and the other side of said frame forming a first shelf section, a slide bar extending transversely beneath said crossbars and having its ends slidable on the ends of said frame, a plurality of parallel crossbars on said slide bar and said separate frame rod forming a second shelf section, the crossbars of said shelf sections being interdigitated so that said sections may be telescoped upon release of said separate frame rod, and a projection formed by an extension of a crossbar of said first section adapted to frictionally engage said second shelf section in the telescopic position.

5. A shelf comprising, a fixed section consisting of a frame supporting spaced parallel crossbars, a second section slidable on said frame and having parallel crossbars spaced intermediate the crossbars of said fixed section such that said sections may be telescoped, means for supporting said slidable section from said frame, and means for resiliently retaining said sections in telescopic position.

6. A shelf comprising a fixed section and a movable section, each section comprising a substantially rectangular frame having spaced longitudinal members connected by spaced relatively flat cross bars, said shelf sections being assembled with the cross bars of each frame section overlying a longitudinal member of the cooperating frame section, certain of said cross bars of one section being extended in a manner to engage a frame member of the other section and thus maintain the sections in a substantially fixed relation.

7. A shelf comprising a fixed section and a movable section each having front and rear longitudinal bars, portions of the fixed section being extended to form guides for the movable section, the rear longitudinal bar of said movable section being slidably disposed between the front and rear longitudinal bars of the fixed section and being extended to bear upon ends of the fixed section, and said rear section including relatively flat cross bars beneath which said rear side of the movable section is disposed.

8. An extensible shelf comprising a pair of frames, each frame comprising side bars and ribbon-like cross bars connecting said side bars, said frames being assembled in overlapping relation with a side bar of one between the side bars of the other and with said ribbon-like cross bars of one frame overlying one side bar of the other frame, one frame section being provided with guides for the other frame section, said guides extending substantially parallel to said ribbon-like cross bars and overlying the side bar of the one frame between the side bars of the other frame.

9. An extensible shelf comprising a pair of frames, each frame comprising side bars and ribbon-like cross bars connecting said side bars, said frames being assembled in overlapping relation with a side bar of one between the side bars of the other and with said ribbon-like cross bars of one frame overlying one side bar of the other frame, one frame section being provided with guides for the other frame section, and one of said frame sections having one or more of its cross bars extended in a manner to resiliently engage the remote side bar of the other frame section for maintaining the frame section in telescoped relation.

10. An extensible shelf comprising a fixed frame and a movable frame, each frame having side bars and ribbon-like cross bars, said frames being assembled with the ribbon-like cross bars of each overlying a side bar of the other, portions of the fixed frame being extended to form guides for the movable frame, that side bar of the movable frame underlying the ribbon-like cross bars of the fixed frame having its extremities overlying portions of the fixed frame whereby vertical movement of said side bar is prevented.

ROY A. HEIM.