April 5, 1949. D. H. BITNEY 2,466,360

RACK ASSEMBLY FOR REFRIGERATORS, OVENS AND THE LIKE

Filed Dec. 15, 1945 2 Sheets-Sheet 1

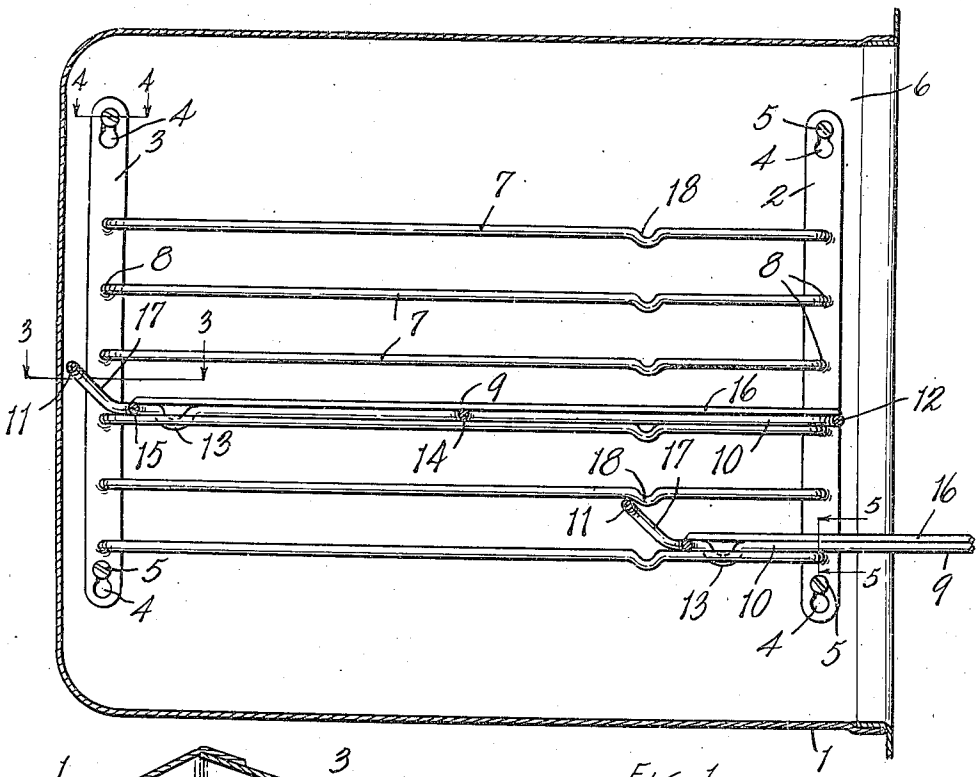

FIG. 1

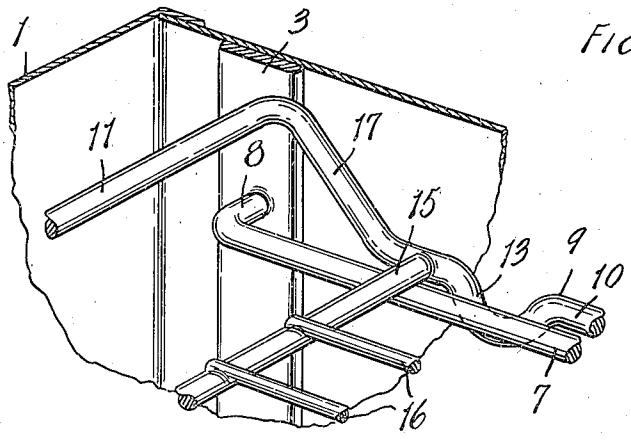

FIG. 2

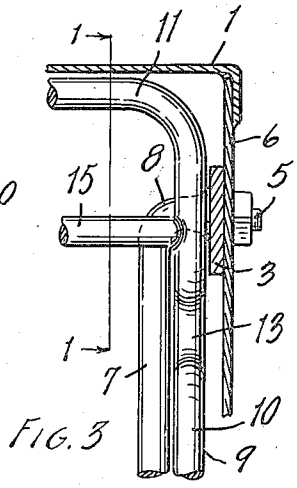

FIG. 3

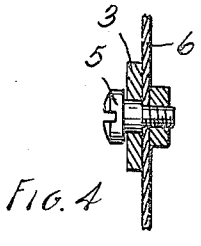

FIG. 4

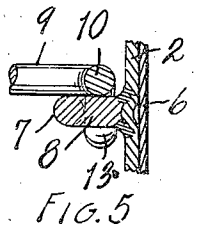

FIG. 5

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RACK ASSEMBLY FOR REFRIGERATORS, OVENS AND THE LIKE

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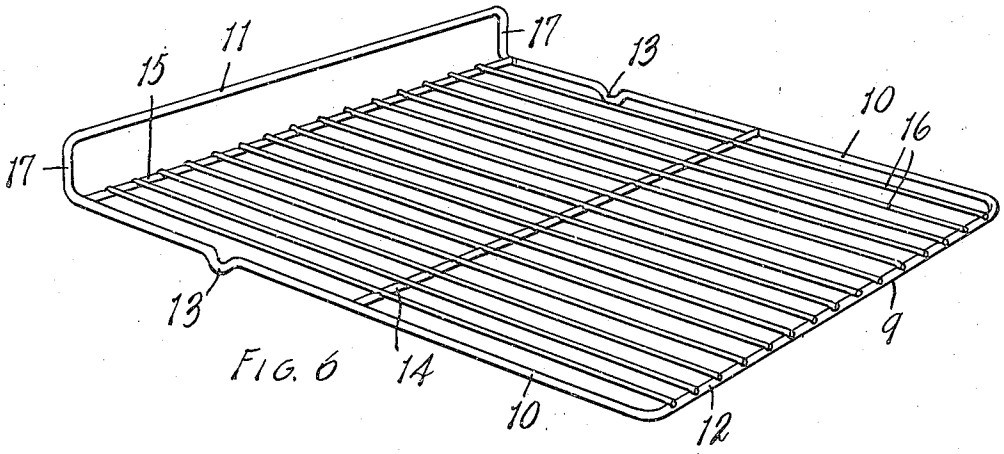

FIG. 6

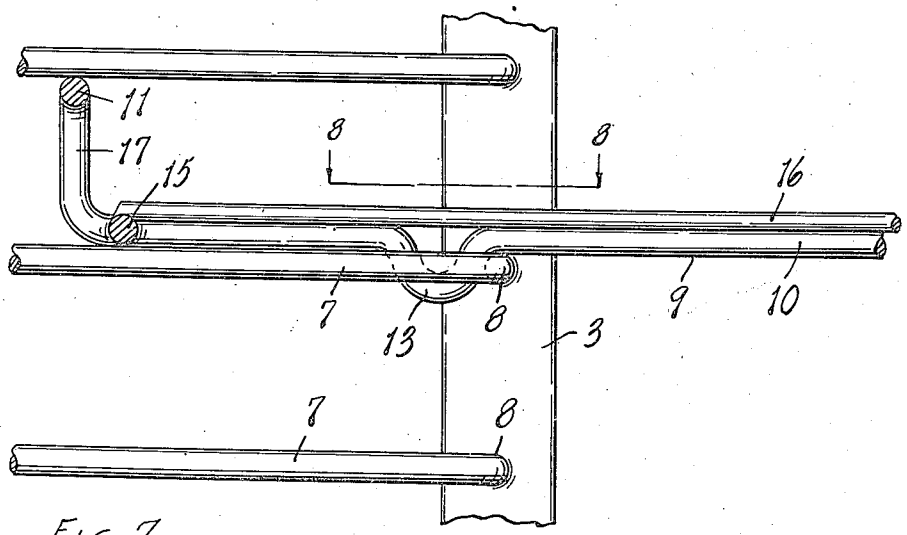

FIG. 7

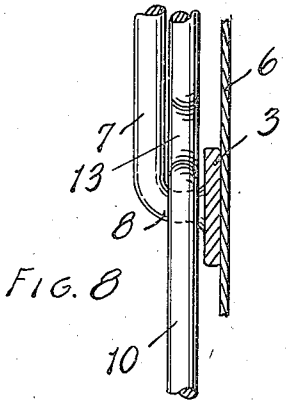

FIG. 8

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Patented Apr. 5, 1949 2,466,360

UNITED STATES PATENT OFFICE

2,466,360

RACK ASSEMBLY FOR REFRIGERATORS, OVENS, AND THE LIKE

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Application December 15, 1945, Serial No. 635,285

10 Claims. (Cl. 211—143)

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This invention relates to improvements in a rack assembly for refrigerators, ovens and the like.

The main objects of this invention are:

First, to provide a rack assembly for refrigerators, ovens, and the like, which is effectively supported in extended position or when withdrawn from the compartment in which it is mounted to expose the major portion of the surface thereof, and at the same time one which may be easily removed or disengaged from its supports.

Second, to provide a rack structure which is comparatively simple and economical in structure and easily manipulated.

Further objects relating to details and economies of the invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of the invention is clearly illustrated in the accompanying drawings, in which:

Fig. 1 is a fragmentary view of a structure embodying my invention partially in section on line corresponding to line 1—1 of Fig. 3, one of the racks being shown in extended position.

Fig. 2 is an enlarged fragmentary perspective view illustrating structural details of the rack supporting rails in relation to a compartment.

Fig. 3 is an enlarged fragmentary view partially in horizontal section on line 3—3 of Fig. 1.

Fig. 4 is an enlarged fragmentary view partially in horizontal section on line 4—4 of Fig. 1.

Fig. 5 is an enlarged detailed section on line corresponding to line 5—5 of Fig. 1.

Fig. 6 is a perspective view of a slightly modified form of rack embodying my invention.

Fig. 7 is a fragmentary view showing the rack in proper relation to supporting rails when in its extended position.

Fig. 8 is a fragmentary view in section on line corresponding to line 8—8 of Fig. 7.

In the accompanying drawings the cabinet or compartment 1 is shown mainly in conventional form, this being the lining of an oven or a refrigerator.

I have illustrated only one of the rail units and one side of the rack, as it will be understood that the other rail unit is a duplicate of that illustrated, and that the rack is symmetrical on both sides. The rack assembly is designed to be removably mounted within the compartment although it will be understood that instead of providing rail assembly units separable from the walls of the compartment, the rails may be mounted directly upon the compartment walls.

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In the embodiment illustrated I provide front and rear hanger members 2 and 3 having keyhole slots 4 at their ends, dischargeably engageable with the headed studs 5 projecting inwardly from the side walls 6 of the compartment which, as stated, may be oven walls or refrigerator walls or the like as may be desired. The rails 7 formed of heavy wire or light rod stock, have laterally turned ends 8 welded or otherwise secured to the hanger 2, see Fig. 5.

The inturned ends 8 at the front of the rails constitute bearing members for the shelf designated generally by the numeral 9.

The shelves or racks 9 comprise side members or bars 10 and a rear member or bar 11 and front member 12 formed integrally or integrally joined. The side bars have downward offsets 13 adjacent the rear ends constituting lugs engaging the outer sides of the rails.

Intermediate cross bars 14 and 15 are provided, the longitudinal slats 16 being welded to these intermediate bars and to the front cross bar or member to form a grate-like structure. The slide bars 10 are slidably supported by the bearing members at the front ends of the rails, while the cross bars 14 and 15 slidably engage the tops of the rails on which the shelf is supported. The rear ends of the side bars are bent upwardly at 17 to support the cross bar 11 in an elevated position relative to the plane of the shelf or rack and so that it slidably engages the under side of the rail above and adjacent to the rail upon which the shelf or rack is supported. The rails have downward offsets 18 adjacent their front ends, these offsets constituting stops coacting with the rear cross bar to limit the outward movement of the racks as they are withdrawn to extended position as illustrated in the lower rack shown in Fig. 1.

The cross bar engaging the under sides of the adjacent upper rail prevents downward tilting of the shelf when it is withdrawn. However, when it is desired to completely remove the shelf or rack, its front end may be tilted upwardly to permit passing of the rear cross bar under the stops.

It will be readily understood that the shelves or racks may be selectively associated with any bars or rails.

In Figs. 6, 7, and 8, the stop offsets 18 are omitted from the rails 7. The offsets 13 of the rack side bar 10 perform the function of laterally supporting the rack as the side bars slide upon the bearing portions 8 of the rails but they also serve as stops coacting with the bearing mem-

bers 8 which also function as stops. The rear ends of the side bars are upwardly offset at 17 and connected by cross bar 11 which rides along under the rails above the rails on which the rack is slidably supported, preventing the rack from tilting downwardly when it is in its extended position or as it is drawn out on the rails.

The rack may be entirely withdrawn by tilting its front end upwardly until the offsets 13 will pass the members 8; and this is also necessary in the structure shown in Figs. 1 to 5 inclusive, where the offsets 18 in the rails coact with the upwardly offset rear end of the rack to provide stop means. In other words, in the embodiment shown in Fig. 1 there are two stop means, this being desirable because the offsets 13 are located so closely adjacent to the rear end of the rack.

I have illustrated and described my invention in an embodiment which is highly satisfactory. I have not attempted to illustrate or describe various modifications and adaptations, as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A rack assembly comprising pairs of front and rear hangers, pairs of horizontally disposed vertically spaced parallel rails having laterally turned ends secured to said hangers, the laterally turned front ends of the rails constituting rack bearing members, said rails having vertically aligned downwardly projecting portions therein adjacent their front ends constituting stops, a rack comprising connected side bars, and front, rear, and intermediate cross bars, the side bars having downwardly projecting portions adjacent their rear ends engaging the outer sides of the rails on which the rack is slidably supported, the side bars being in slidable engagement with the said bearing members of the rails, the intermediate bars being in sliding engagement with the said rails, the rear ends of the side bars being upwardly offset from the plane of the rack and supporting the rear cross bar in an elevated relation to the plane of the rack to coact with said stops, and in slidable relation to the rails above the rails on which the rack is supported, whereby the rack is supported in an extended horizontal position but may be disengaged from the rails by tilting the front end of the rack upwardly to pass the rear cross bar under the coacting rail stops.

2. A rack assembly comprising pairs of vertically spaced parallel rails having bearing members at their front ends, means for supporting said rails in said vertically spaced relation, said rails having vertically aligned downwardly projecting portions therein adjacent their front ends constituting stops, a rack comprising connected side bars and front, rear, and intermediate cross bars, the side bars having downwardly projecting portions adjacent their rear ends engaging the outer sides of the rails on which the rack is slidably supported, the side bars being being in slidable engagement with the said bearing members of the rails, the intermediate bars being in sliding engagement with the said rails, the rear ends of the side bars being upwardly offset from the plane of the rack and supporting the rear cross bar in an elevated relation to the plane of the rack to coact with said stops and in slidable relation to the rails above the rails on which the rack is supported whereby the rack is supported in an extended horizontal position, but may be disengaged from the rails by tilting the front end of the rack upwardly to pass the rear cross bar under the coacting rail stops.

3. The combination of pairs of vertically spaced parallel rails having vertically aligned downwardly projecting portions adjacent the front ends constituting stops, means for supporting said rails in said vertically spaced relation, a rack having side bars and means extending transversely of the parallel rails and slidable thereon and connected to the side bars, said side bars having downwardly projecting portions adjacent the rear ends engaging the outer sides of the rails on which the rack is slidably supported and a rear cross bar upwardly offset above the plane of the rack constituting a stop coacting with the stops of the rails above the rails on which the rack is slidably supported and in slidable relation to such rails whereby the rack may be supported in extended horizontal position but may be disengaged from the rails by tilting the front end of the rack upwardly to pass the rear cross bar thereof under the coacting rail stops.

4. The combination of pairs of vertically spaced parallel rails having vertically aligned stops adjacent their front ends, means for supporting said rails in said vertically spaced parallel relation, a rack having side bars and means extending transversely of said parallel rails and slidable thereon and connected to said side bars, said rack having an upwardly offset rear cross bar constituting a stop coacting with the stops of the rails above the rails on which the rack is slidably supported and in slidable relation to such rails whereby the rack may be supported in extended horizontal position but may be disengaged from the rails by tilting the front end of the rack upwardly to pass the rear cross bar thereof under the coacting rail stops.

5. The combination of a plurality of pairs of vertically spaced parallel rails, means for supporting said rails in said vertically spaced relation, the upper rails having downwardly projecting stops adjacent their front ends, a rack having side bars and means extending transversely of said parallel rails and slidable thereon and connected to said side bars, said rack having upwardly projecting combined stop and support means at its rear end in slidable relation to the rails above the rails on which the rack is supported whereby the rack is supported in extended horizontal position but may be disengaged from the rails by tilting the front end of the rack to disengage the stops of the rack from the stops of the rails, the rack being selectively engageable with a pair of horizontally spaced rails.

6. The combination of pairs of vertically spaced parallel rails, means for supporting said rails in said vertically spaced relation, the upper rails having downwardly projecting stops adjacent their front ends, a rack having side bars and means extending transversely of said parallel rails and slidable thereon and connected to said side bars, said rack having upwardly projecting combined stop and support means at its rear end in slidable relation to the rails above the rails on which the rack is supported whereby the rack is supported in extended horizontal position but may be disengaged from the rails by tilting the front end of the rack to disengage the stops of the rack from the stops of the rails.

7. The combination of pairs of horizontally disposed vertically spaced parallel rails having laterally turned forward ends constituting rack bear-

ing members, means for supporting said rails in said vertically spaced relation, and a rack comprising connected side bars and cross members, the side bars being in slidable engagement with said bearing members of said rails and having downwardly projecting portions adjacent their rear ends engaging the outer sides of the rails on which the rack is slidably supported and constituting stops coacting with said bearing members of said side rails, the rear ends of the side bars being upwardly offset from the plane of the rack and provided with a cross bar in sliding engagement with the rails above the rails on which the rack is supported whereby the rack is supported in an extended horizontal position but may be disengaged from the rails by tilting the front end of the rack upwardly to pass the downwardly projecting portions of the side bars over the bearing members.

8. The combination of pairs of horizontally disposed vertically spaced parallel rails having rack bearing members at their forward ends, means for supporting said rails in said vertically spaced relation, and a rack comprising side bars and means for connecting the same, said side bars being in slidable engagement with said bearing members of said rails and having downwardly projecting portions adjacent their rear ends engaging the outer sides of the rails on which the rack is slidably supported and constituting stops coacting with said bearing members of said side rails, the rear end of the rack being upwardly offset in relation to the plane of the rack and in sliding engagement with the rails above the rails on which the rack is supported whereby the rack is supported in an extended horizontal position but may be disengaged from the rails by tilting the front end of the rack upwardly to pass the downwardly projecting portions of the side bars over the bearing members.

9. The combination of pairs of horizontally disposed vertically spaced rails having stop elements at their forward ends, means supporting said rails in said vertically spaced relation, a rack comprising side bars and means for connecting the same, said side bars being slidable on certain pairs of said rails having a pair of rails above

them, said rack having stops on the side bars coacting with said stop elements on said rails when the racks are extended, the rear ends of the side bars being upwardly offset in relation to the plane of the rack and provided with a cross bar in sliding engagement with the rails above the rails on which the rack is supported whereby the rack is supported in an extended horizontal position but may be disengaged from the rails by tilting the front end of the rack upwardly to pass the side bar stops over the stop elements of the rails.

10. The combination of pairs of horizontally disposed vertically spaced rails having stop elemeans at their forward ends, means for supporting said rails in said vertically spaced relation, a rack comprising side bars and means for connecting the same, said side bars being slidable on certain pairs of said rails having a pair of rails above them, said rack having stops on the side bars coacting with said stop elements on said rails when the racks are extended, the rear end of the rack having means upwardly offset in relation to the plane of the rack and in sliding engagement with the rails above the rails on which the rack is supported whereby the rack is supported in an extended horizontal position but may be disengaged from the rails by tilting the front end of the rack upwardly to pass the side bar stops over the stop elements of the rails.

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