Sept. 29, 1942. G. C. ROEDL 2,296,950

OVEN CABINET, SHELF, AND DOOR

Filed June 9, 1941 2 Sheets-Sheet 1

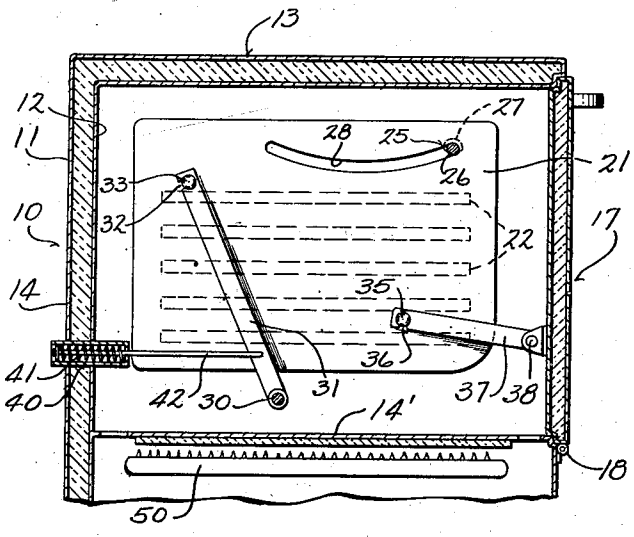


Fig. 1.

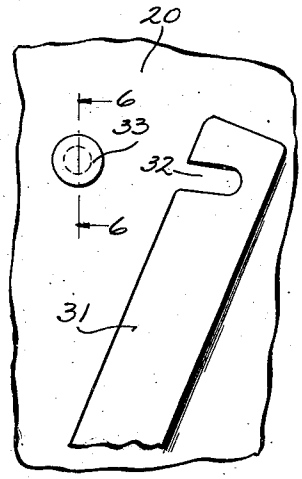


Fig. 5.

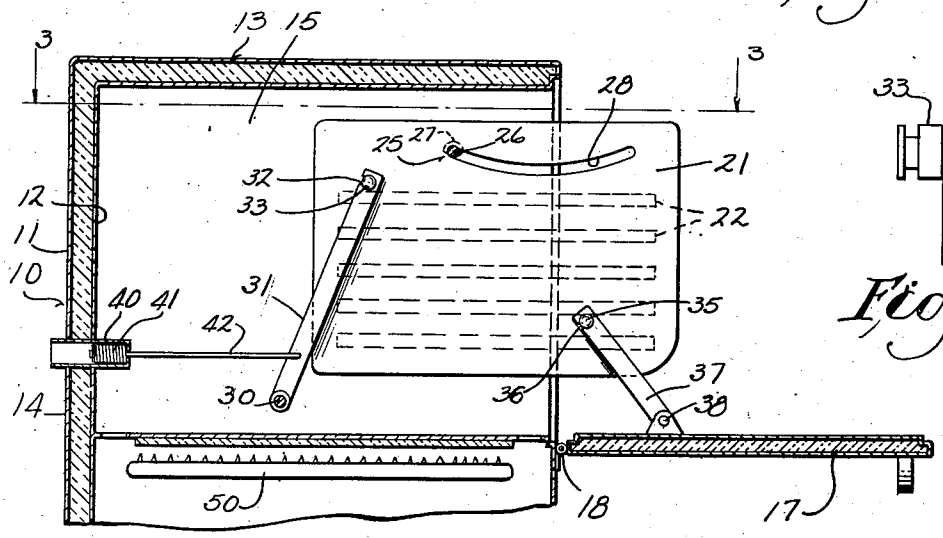


Fig. 2.

Fig. 6.

INVENTOR
GEORGE C. ROEDL
BY
Wheeler, Wheeler & Wheeler
ATTORNEYS.

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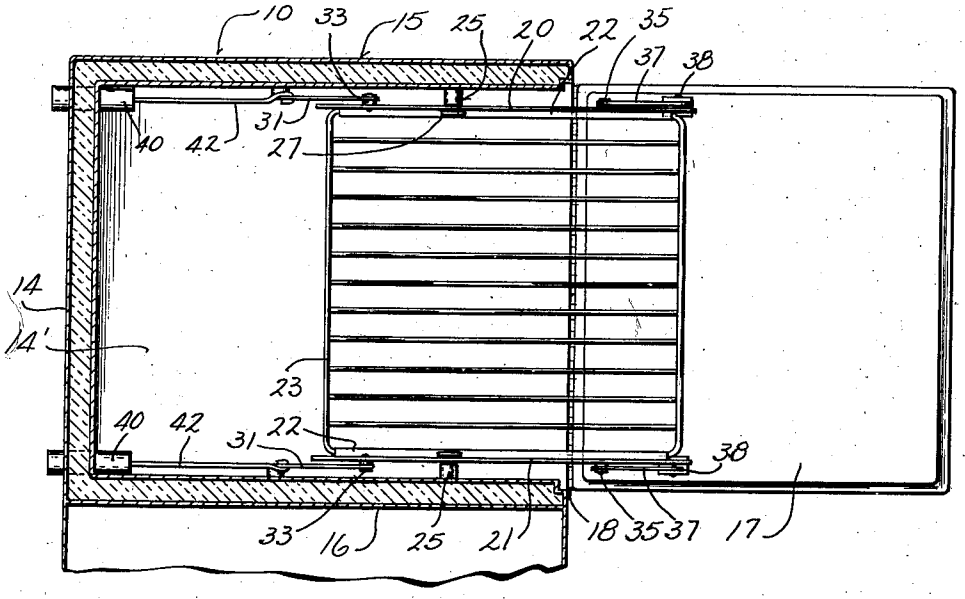


Fig. 3.

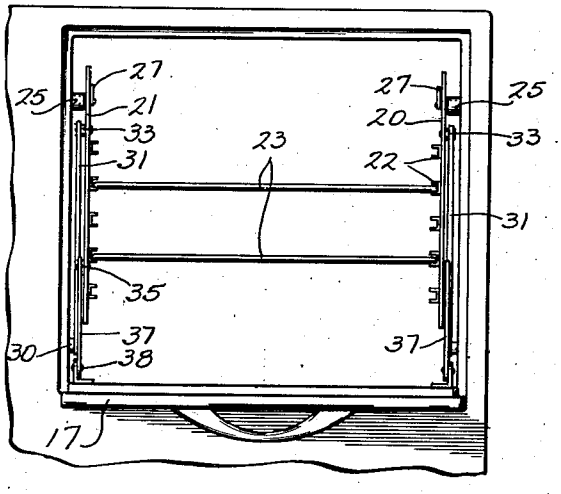


Fig. 4.

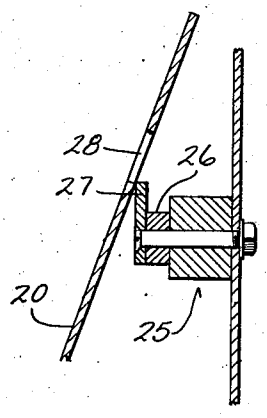


Fig. 7.

INVENTOR
GEORGE C. ROEDL
BY
Wheeler, Wheeler & Wheeler
ATTORNEYS.

Patented Sept. 29, 1942

2,296,950

UNITED STATES PATENT OFFICE

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OVEN CABINET, SHELF, AND DOOR

George C. Roedl, Beaver Dam, Wis.

Application June 9, 1941, Serial No. 397,268

6 Claims. (Cl. 312—174)

My invention relates to improvements in oven cabinets, shelves, and doors.

The object of my invention is to provide an assemblable shelf construction best suited to a cabinet or oven with which a door or other closure member is used and in conjunction with which, in the movement of such door, the shelves may be moved to and from a retracted position.

Another object of my invention is to incorporate in conjunction with the equipment above referred to a simplified inexpensive construction obviating heavy hinges, strong framework, and expensive assembly requirements.

Other objects will become apparent from the following description:

In the drawings:

Figure 1 is a vertical section through a closed oven equipped with my invention.

Figure 2 is a view similar to Figure 1 with the door of the oven in open position.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a front elevation of the construction shown in Figure 2.

Figure 5 is a detail of the upper end of my lever and its connecting plate button.

Figure 6 is a section on line 6—6 of Figure 5.

Figure 7 is a detail of the principal support for my plate, and illustrating an intermediate step in the assembly of my plate upon the principal support.

Like parts are designated by the same reference characters throughout the several views.

In the drawings, I have shown my invention incorporated in an oven, but it will be obvious from the following description that any cabinet or closure, in which shelves may more conveniently be used if they are slidable forwardly, may profitably incorporate my invention.

So that the environmental structure shown in the drawings may be understood, attention is called to a double walled cabinet type oven 10, the spaced plies 11 and 12 of which are formed to provide a top 13, a back wall 14, a bottom 14', side walls 15 and 16, and a door 17 hinged at 18 so as to swing outwardly and downwardly from the position shown in Figure 1 to the position shown in Figure 2.

In place of the usual, permanently fixed side wall shelf supports customarily used in oven and cabinet construction I provide two plates 20 and 21, one for either side of the oven. These plates have channel slides 22 for the reception and support of shelves 23 as shown more clearly in Figure 4.

Extending inwardly from each of the side walls 15 and 16, at a high point and near the forward portion thereof, I provide a principal support member 25 shaped to provide a roller 26 and an upwardly extending fixed flange 27 shown most clearly in Figure 7. Each of the plates 20 and 21 is provided with an arcuate slot 28 to provide a "way" for the principal support, and the plate is receivable upon the principal support 26 by a "lacing" movement of the plate over the flange 27 as illustrated in Figure 7.

Extending upwardly from a pivotal connection at 30 upon each side wall, I provide a supporting lever 31 notched at 32 to receive a secondary plate support 33 and with a plate mounted upon the principal support 26 and upon a secondary support 32 positioned in the slot of the lever 31 my plate 20 is sustained for horizontal sliding movement from retracted position as shown in Figure 1 to extended position as shown in Figure 2, the limitation of movement of the plate being determined by the principal support 26 n its abutment against the plate at the ends of the slot 28.

Secured to the plate at the forward lower portion thereof I provide a door link button 35 receivable in notch 36 in door link 37 which is pivotally connected at 38 to the door 17, thus connecting each plate to the door whereby to move the plate from retracted to extended position in accord with the hinged movement of the door from the position shown in Figure 1 to the position shown in Figure 2.

Within a tubular spring housing 40, I mount a compression spring 41 connected to rod 42 extending to the supporting lever 31 at a point adjacent pivot 30, thus the supporting lever 31 is biased to pull lever 31 rearwardly of the oven and, therefore, to pull the plate rearwardly, and tend to close the door 17. Because the rod 42 is secured to the lever 31 relatively closely adjacent fulcrum 30 of lever 31 and the weight of door 17 is greatly extended beyond the hinge at 38, the strength of the spring 41 is inadequate to pull the parts to retracted position when the door 17 is in wide open position and the plate is in extended position as in Figure 2.

It will be noted that the lever 31 is held in position against secondary plate support 33 by the spring 41 and, therefore, only a slight angularity of the slot 32 is necessary to keep the lever in engagement with the secondary plate support. The same is true with respect to link 37 except

that gravity is relied upon to keep the link in engagement with the door link button 35.

It will be noted upon inspection of the drawings that the slot 28 is curved to correspond with the arc of movement of the secondary support 33 at the upper end of supporting link 31 so that throughout the entire movement of the plate from completely retracted to completely extended position the channels 22 are maintained in horizontal position and the shelves 23 never are tilted. It will also be noted that the rearward extremity of the slot 28 is so positioned with reference to the link button 35 and the position of the pivot 38 upon the door 17 is such that when the door is open as shown in Figure 2, the link and the principal support 25 and the pivot 38 are in one straight line, thus providing a positive support for the door in its Figure 2 position. It will be further noted that when the door is swung to the position shown in Figure 1, the spring 41 acts as a door closing member as well as a shelf retracting member, therefore, no spring hinges at 18 are necessary and no expensive catches to hold the door in closed position are necessary.

My plate-like shelf supports are so shaped and designed as not to interfere with the circulation of heated convection currents emanating from a burner or heater such as the one shown at 50 in Figure 1, and from the above description it will be seen that the simplest form of assembly is made possible by my invention since each plate may be cheaply and individually constructed and then inserted in a cabinet or oven and each of the links 37 and levers 31 may be easily hooked in position in an assembling operation without the use of tools.

I claim:

1. A cabinet having an internally projecting principal support and having a door hingedly moveable to and from closed position, a slidable shelf supporting plate supported upon said principle support in said cabinet and a link pivotally connected to said plate and to said door at a joint spaced from the hinge connection of the door, said principal support and said joint and said link being positioned for alignment to give positive door support when the door is in open position.

2. A cabinet having walled, box-like configuration and a door to hingedly close a forward face of the cabinet, said door having a hinge at its lower margin, an upstanding swingable lever adjacent a rearward portion of a side wall, a slotted plate adjacent the wall and pivotally connected to said lever at a relatively high point in the cabinet, a principal support for the plate extending through the slot at a high point in the forward part of the cabinet and a link pivotally connected to the door and the plate whereby in the opening movement of the door to pull the plate forwardly on said principal support and on said lever.

3. A cabinet having walled, box-like configuration and a door to hingedly close a forward face of the cabinet, said door having a hinge at its lower margin, an upstanding swingable lever adjacent a rearward portion of a side wall, a slotted plate adjacent the wall and pivotally connected to said lever at a relatively high point in the cabinet, a principal support for the plate extending through the slot at a high point in the forward part of the cabinet and a link pivotally connected to the door and the plate whereby in the opening movement of the door to pull the plate forwardly on said principal support and on said lever, the slot being curved to maintain the level of the plate in accord with the arc of movement of the lever.

4. A cabinet having walled, box-like configuration and a door to hingedly close a forward face of the cabinet, said door having a hinge at its lower margin, an upstanding swingable lever adjacent a rearward portion of a side wall, a slotted plate adjacent the wall and connected to said lever at a relatively high point in the cabinet, a principal support for the plate extending through the slot at a high point in the forward part of the cabinet and a link between the door and the plate whereby in the opening movement of the door to pull the plate forwardly on said principal support and on said lever, the link being pivotally connected to the plate and door at such points as to be in alignment with the principal support when the door is in full open position whereby said principal support is in positive supporting relation to the door.

5. In a device of the character described, a vertical plate-like shelf supporting structure and a housing therefor including a door, linkage to support one end of the structure for swaying movement into and outwardly of the housing and a roller and way to support the other end of the structure, the contour of the way being curved to conform to the path of movement of the link supported end of the structure whereby a shelf supported by the plate-like supporting structure is maintained in horizontal position.

6. A cabinet and shelf structure, said cabinet having an upstanding notched lever adjacent each side wall near the rear thereof, an upwardly hooked principal support at a high point near the front of each side wall, shelf supporting plates parallel with each side wall, each plate having a secondary support received in a lever notch and a slot in which the hook of the principal support is received, each of the plates being provided with shelf holding members, and shelves extending between the plates on said holding members whereby to hold the plates against said supports and prevent disassembly thereof.

GEORGE C. ROEDL.