

Jan. 24, 1928.

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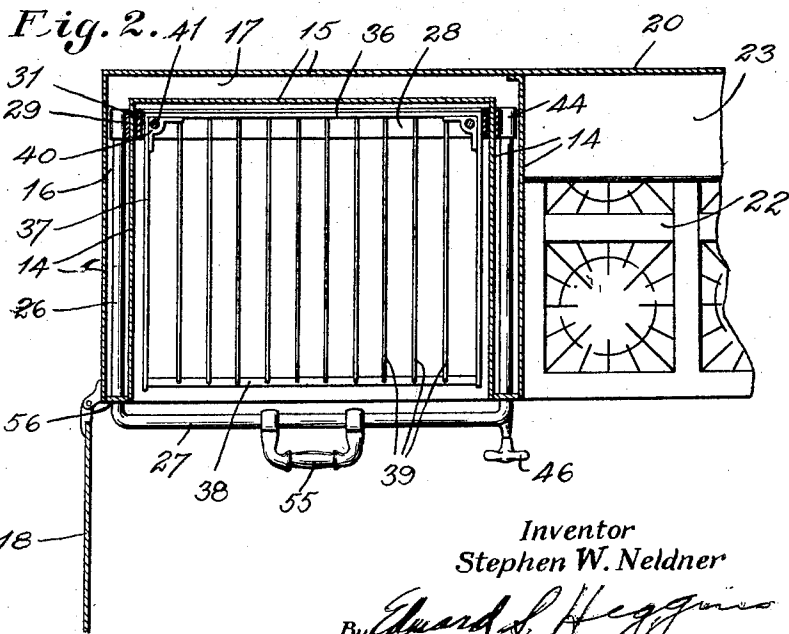
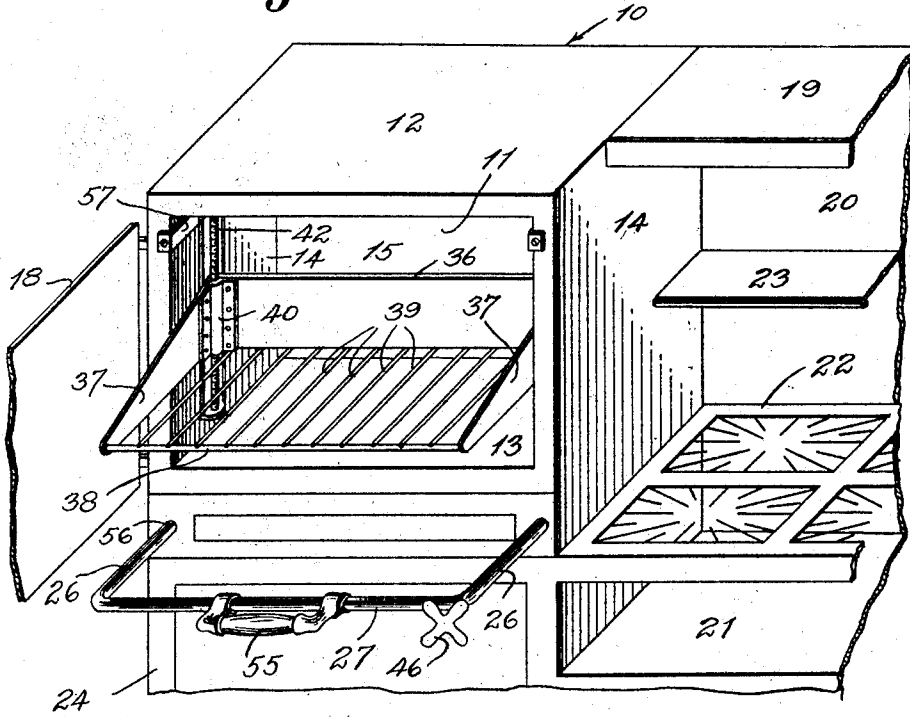
S. W. NELDNER

ADJUSTABLE RACK

Filed April 22, 1927

2 Sheets-Sheet 1

Fig. 1.



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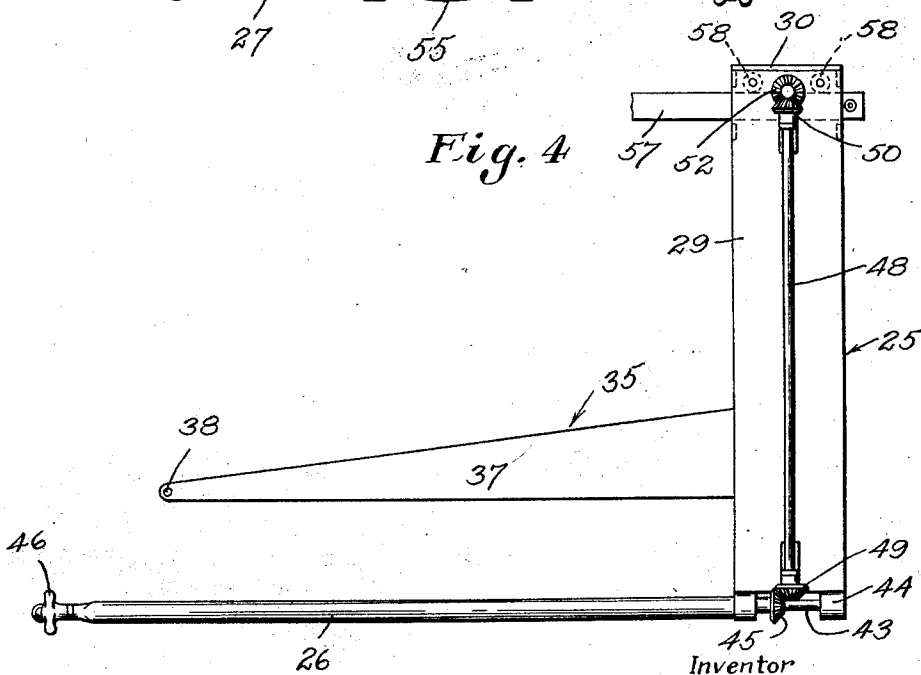
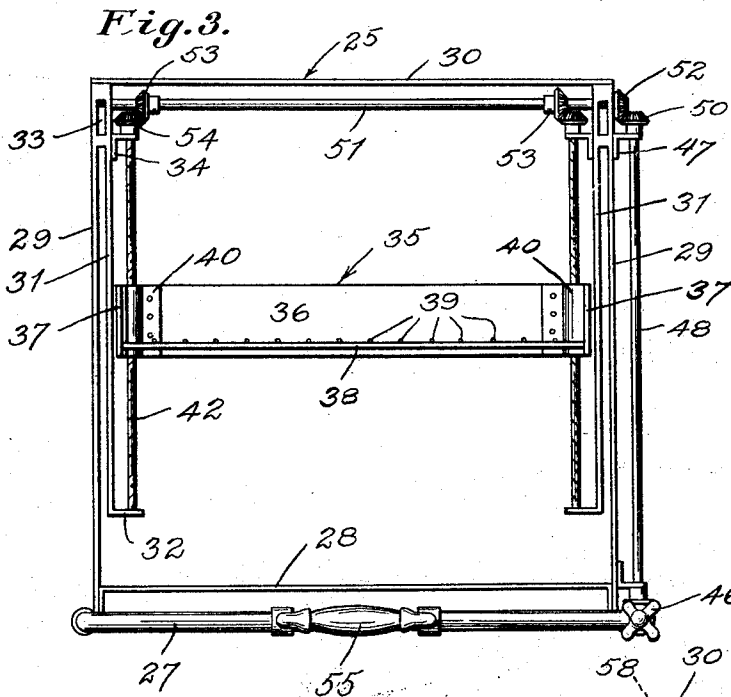
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S. W. NELDNER

ADJUSTABLE RACK

Filed April 22, 1927

2 Sheets-Sheet 2



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Patented Jan. 24, 1928.

1,657,226

UNITED STATES PATENT OFFICE.

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ADJUSTABLE RACK.

Application filed April 22, 1927. Serial No. 185,876.

This invention relates generally to adjustable racks but more particularly to such racks used in ovens.

An object of this invention is to support a vessel in a container in such a manner that it may be raised or lowered therein without requiring its withdrawal therefrom.

A more specific object of the invention is to enable cooking vessels placed in the lower portion of an oven to be elevated without necessitating the opening of the oven door.

When baking it is customary to start the process near the lower portion of an oven so that the product becomes thoroughly cooked before it is permitted to brown over the top which object is usually accomplished by withdrawing the product and replacing it on a shelf near the top of the oven. Such withdrawal and replacement has been found quite inconvenient and even dangerous as frequently serious injury has resulted by the spilling of the product over the hands and person of the individual conducting the baking. Furthermore such method requires that the oven door be kept open during the shifting of the position of the product which lowers the temperature of the oven and not only wastes heat but oftentimes the cool air striking the product destroys its character to such a degree as to necessitate its abandonment.

It is therefore a more specific object of the invention to enable the product to be moved from the bottom to the top of an oven or vice versa without opening the oven door and consequently eliminate the danger and waste attending the methods heretofore in use.

A still further object of the invention is to enable the product to be removed from the oven without requiring that the individual conducting the baking inject his hands into the heated area.

A feature of the invention is its ability to be withdrawn from an external housing to such a position as to give complete access to a vessel placed thereon.

Another feature of the invention is its adjustability which enables vessels carried thereby to be raised or lowered to varying positions and to accommodate vessels varying in height.

A further feature of the invention is its nicety of control which enables the user to secure the exact adjustment desired.

Other objects and advantages will be apparent from the following description taken

in connection with the accompanying drawings in which—

Figure 1 is a fragmentary perspective view of a stove showing the present invention mounted in the oven.

Figure 2 is a sectional view through the oven shown in Figure 1.

Figure 3 is a front elevation of the rack forming the present invention.

Figure 4 is a side elevation of the rack shown in Figure 3.

Referring to the figures of the drawings in detail, the present invention is illustrated as applied to a gas range 10, including an oven 11 provided with the usual top wall 12, and bottom wall 13. This oven is provided with double side walls 14 and double rear walls 15 leaving a space 16 between said walls and a space 17 between said rear walls. A door 18 is hingedly mounted on the range. To the right of the oven 11 is an open compartment provided with a top wall 19, rear wall 20 and floor 21. Grates 22 are formed in said compartment at a point somewhat removed from the floor 21 and a shelf 23 is mounted above said grates. Underneath the oven 11 is provided the usual compartment 24 for storing food, etc.

The present invention is concerned with means for adjusting the position of a vessel in the oven relative to the flame or relative to the floor or top wall of the oven in order to permit uniform cooking or accommodating the vessel with its food to the oven. This is accomplished in the present invention by mounting in the oven 11 a rack 25 (see Figures 3 and 4).

This rack 25 comprising a base consisting of a pair of side rails 26 connected at their front ends by a rail 27 and at their rear ends by a plate 28.

Connected to the base at the rear thereof is an inverted U-shaped support. This support includes side plates 29 joined at their top ends by a top plate 30. Formed integrally with each of the side plates 29 is an elongated bracket 31 provided with an inwardly extending flange 32. Provided between each side plate 29 and bracket 31 adjacent the top ends thereof is an opening 33 for a purpose which will be explained. Formed on the interior of each of said brackets 31, adjacent the top thereof and in vertical alignment with the flange 32 is another bracket 34.

Adjustably mounted on this rack 25 is a

shelf indicated generally at 35 for holding a vessel of any kind (not shown). An important feature of the present invention is means to adjust this shelf 35 horizontally so that it may readily be moved up and down away or toward the floor of the oven under which is the flame (not shown), which means is readily accessible from the exterior of the oven. This shelf 35 comprises a rear plate 36, side plates 37, said side plates 37 being joined at their front ends by a rod 38. Passing between said rear plate 36 and front rod 38 is a plurality of rods 39 forming the floor of said shelf. Riveted to the rear and side plates of the shelf at the points where said plates are joined is a bracket 40, which bracket 40 is formed with a central internally screw threaded opening 41. This shelf 35 is mounted on a pair of upright screw rods 42 journalled in the brackets 34 and flanges 32, the screw threads of which rods 42 are adapted to engage with the screw threads on the interior of the openings 41 of the brackets 40, permitting said shelf 35 to ride up and down upon the rods 42.

The means for driving said shelf up and down comprises the following: Passing through one of the tubular side rails 26 of the base is a main driving shaft 43, the inner end of which is journalled in a pair of ears 44 formed on the lower end of said side plates 29 of the support. Fixed on said shaft 43 at a point removed from its inner end is a pinion 45. It will be noted from Figure 2 that this shaft 43, when the rack is in normal position in the oven 11, extends outside the oven and mounted on the outside end of the shaft 43 is a hand wheel 46 for convenience in rotating the said shaft 43. Mounted on the exterior of one of the side plates 29 of the support, adjacent the top and bottom thereof is a bracket 47. Journalled in these brackets 47 is an intermediary upright drive shaft 48 provided with pinions 49 and 50, at its lower and upper ends, respectively. The positions of these drive shafts 43 and 48 are such that the pinions 45 and 49 are continually in mesh. Journalled in the side plates 29 of the support is another shaft 51, which shaft is disposed at right angles to the shaft 48, one end of which shaft 51 protrudes outside one of the side plates 29. Fixed to the protruding end of said shaft 51 is a pinion 52, which because of the relative positions of the shafts is continually in mesh with the pinion 50 on the shaft 48. Secured to the shaft 51 at a point adjacent each end thereof is a pinion 53 which pinions 53 are continuously in mesh with pinions 54 fixed to the top ends of the upright screw rods 42.

It will be apparent from Fig. 4 that the rack comprising the base support and shelf forms a unitary structure. This unitary structure is adapted to be moved into and

out of the oven 11 and the means for accomplishing this movement is an important feature of the present invention. Fig. 1 illustrates the structure partially out of the oven. Referring particularly to Figs. 1 and 2, it will be noticed that a handle 55 is mounted on the front rail 27 of the base. It will be seen that when the structure is in normal position as shown in Fig. 2 the side rails 26 are disposed within the space 16 between the double side walls 14 of the oven 11 and extending through openings 56 in the front of the base of the oven; and that the front rail 27 is normally disposed outside the oven. The said side rails 26 slide freely between the side walls 14. Secured to the interior of each of the said side walls of the oven at a point adjacent the top thereof and extending from the front to the rear is a rail 57. When the rack is in normal position, this rail 57 extends through the openings 33 of the brackets 31 permitting the rack to slide freely thereon. If desired, rollers 58, as illustrated in Fig. 4, may be mounted on the inner sides of the plates 29 to facilitate the movement of the rack on the rail 57.

In operation, if it is desired to move the shelf 35 up or down in the oven, a turn of the handwheel 46 in the desired direction will drive the main shaft 43 which, through the meshing pinions drives the intermediary shaft 48, which latter shaft 48 in turn through the meshing pinions drives the shaft 51, and this latter shaft 51 being operatively connected to the upright screw rods 42 turns the latter rods and due to the cooperation of the threads on said rods and the threads on the shelf 35, said shelf moves up and down as will be apparent. It will be noted that this is accomplished from the outside of the range by means of the handwheel 46 and that it is not necessary to insert the hands inside the oven and furthermore that a very fine adjustment may be had. If it is desired to inspect the food in the vessel on the shelf 35 or if it is desired to remove the food after it is cooked, the rack comprising the base, support and shelf with its vessel may be withdrawn from the oven 11 so that said vessel is positioned exteriorly of the oven where it is readily accessible and can be attended to as desired. This is accomplished by simply opening the door 18 of the oven and pulling on the handle 55 on the rail 27. As a result of this pull, the side rails 26 slide outwardly of the space 16 between the double walls 14 of the oven while the support moves freely outwardly of the oven along the rails 57 carrying the shelf 35 along with it, said rails 57 and openings 56 guiding the movement of the rack as will be understood.

While I have illustrated and described a

preferred embodiment of my invention, it will be understood that changes may be made in the details thereof without departing from the spirit of the invention and it is desired to be limited only by the state of the art and the appended claims.

I claim:

1. An adjustable rack comprising a base having continuous front and side rails and a rear plate, a support including side and top plates mounted on the rear end of said base, a shelf movably mounted on said support and means to move said shelf, said means comprising a main drive shaft, an intermediary drive shaft operatively connected to said main shaft, a third drive shaft operatively connected to said intermediary shaft, a pair of screw rods operatively connected to said third drive shaft and mounting said shelf and a hand wheel mounted on said main drive shaft to rotate the same.

2. In combination with a container, a rack mounted within said container, said rack comprising a base having side and front rails and a rear plate, a support mounted on the rear end of said base, a shelf adjustably mounted on said support and means to adjust said shelf comprising a main drive shaft having one end extending outside the container, an intermediary drive shaft operatively connected to said main drive shaft, a third drive shaft operatively connected to said intermediary drive shaft, a pair of screw rods operatively connected to said third drive shaft, said screw rods mounting said shelf and a hand wheel mounted on the exterior end of said main drive shaft to rotate the same.

3. In combination with a container, provided with double side and rear walls having a space therebetween, a rack movably mounted in said container, said rack comprising a base having side and front rails and a rear plate, said side rails disposed in the space between the double side walls and

said front rail disposed exteriorly of the container, a support comprising side and top plates mounted on said base, said side plates being disposed within the space between the double side walls, a shelf mounted on said support, and a handle on the front rail of the base whereby said base, support and shelf may be moved outwardly and inwardly of said container.

4. In combination with an oven, a rack mounted within said oven, said rack comprising a base having side and front rails and a rear plate, a support mounted on the rear end of the base, a shelf adjustably mounted on said support and means to adjust said shelf comprising a main drive shaft having one end extending exteriorly of the oven, an intermediary drive shaft operatively connected to said main drive shaft, a third drive shaft operatively connected to said intermediary drive shaft, a pair of screw rods operatively connected to said third drive shaft, said rods mounting said shelf, and a hand wheel mounted on the exterior end of said main drive shaft to rotate the same.

5. In combination with an oven provided with double side and rear walls having a space therebetween, a rack movably mounted in said oven, said rack comprising a base having side and front rails and a rear plate, said side rails disposed in the space between the double side walls and said front rail disposed exteriorly of the oven, a support comprising side and top plates, said side plates being disposed within the space between the double side walls, a shelf mounted on said support and a handle on the front rail of the base whereby said base, support and shelf may be moved outwardly and inwardly of said oven.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

STEPHEN W. NELDNER.