March 2, 1926. 1,574,941

W. E. SEXTON

DOOR MECHANISM FOR RANGES

Filed April 11, 1924 2 Sheets-Sheet 1

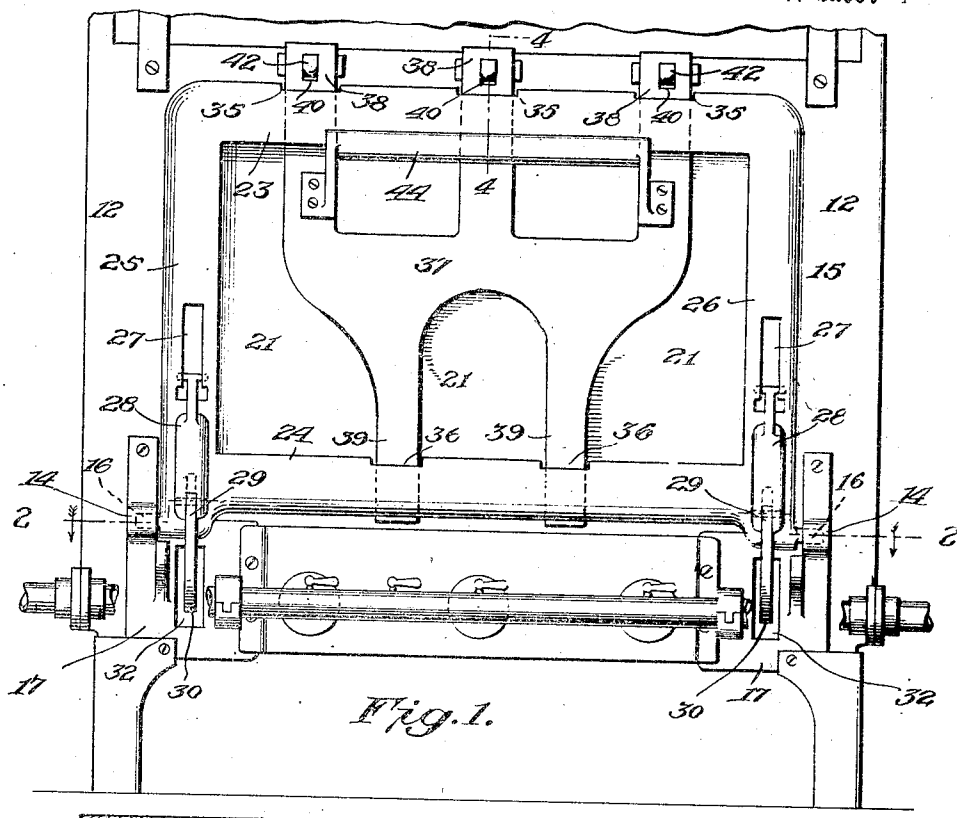


Fig. 1.

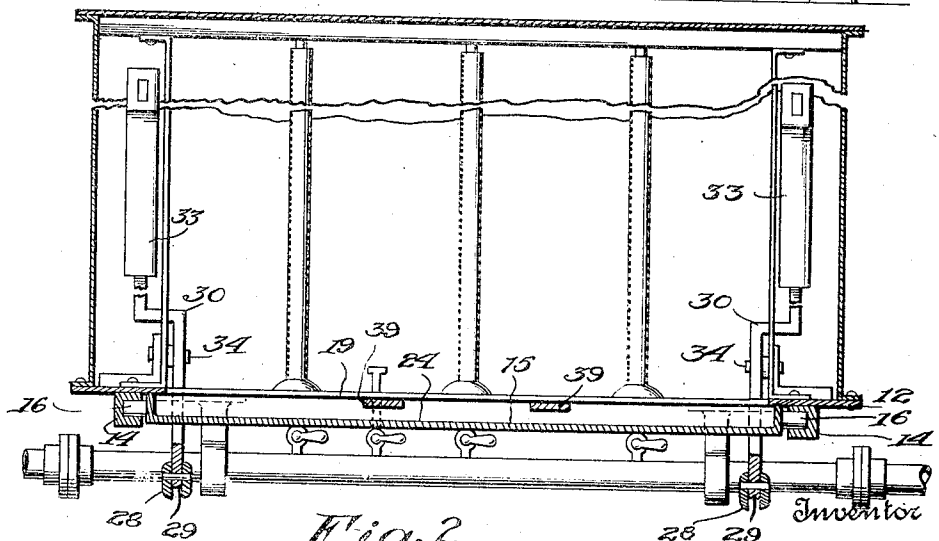


Fig. 2.

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Fig. 3.

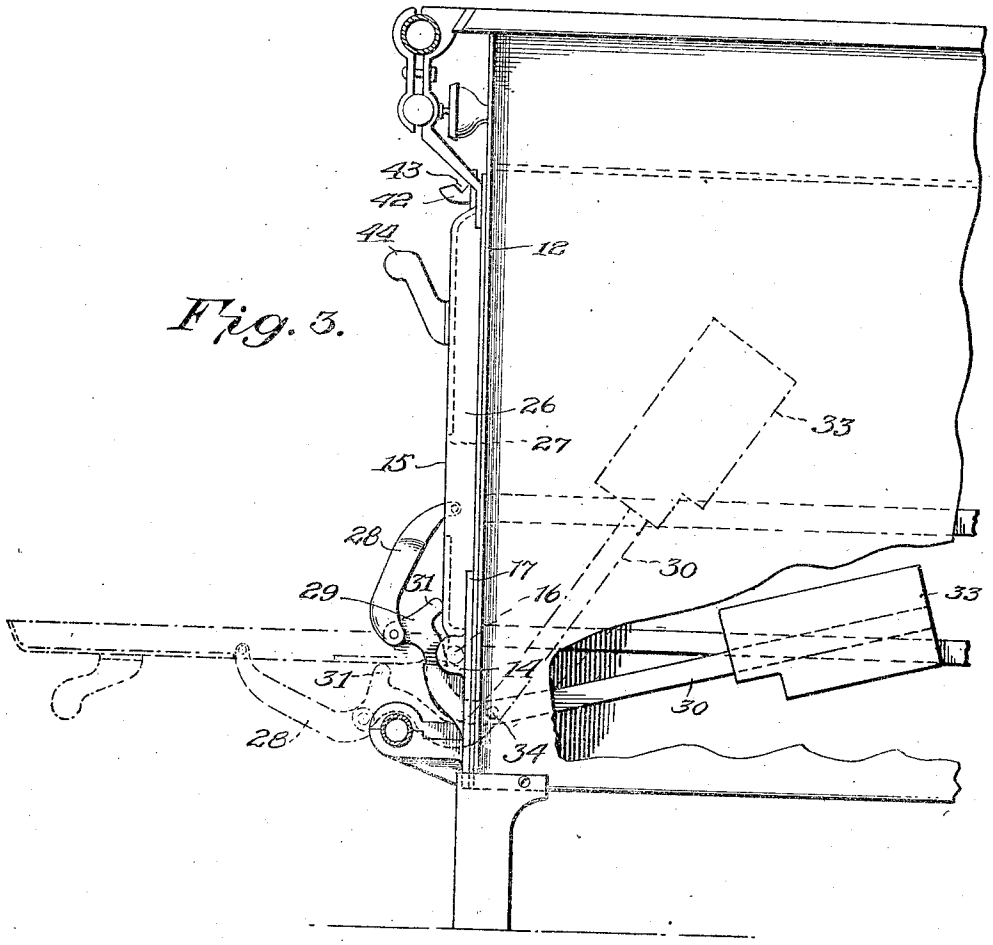
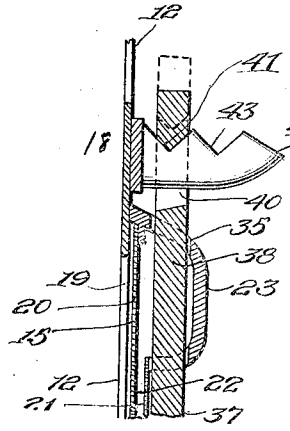


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM ELBERT SEXTON, OF BALTIMORE, MARYLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE BALTIMORE TRUST COMPANY, TRUSTEE, A CORPORATION OF MARYLAND.

DOOR MECHANISM FOR RANGES.

Application filed April 11, 1924. Serial No. 705,767.

To all whom it may concern:

Be it known that I, WILLIAM ELBERT SEXTON, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Door Mechanism for Ranges, of which the following is a specification.

This invention relates to improvements in ranges and has particular reference to a novel construction of means for balancing the pivoted oven door.

The objects of the invention are to provide improved means for balancing a door of this character whereby it may readily be manipulated with one hand; will be balanced to such an extent that damage to the door in case it is dropped will be avoided and wherein the door will be well supported when in the lowered position so it may be utilized as a shelf if desired.

The invention is illustrated in the accompanying drawings, wherein,—

Fig. 1 shows a front view of a portion of a range with the improved devices attached thereto.

Fig. 2 illustrates a horizontal cross-sectional detail through the same,—the section being taken on the line 2—2 of Fig. 1.

Fig. 3 shows a side elevation of the range and the improved devices and has a portion of the range wall broken away to disclose the balance means, and

Fig. 4 illustrates a vertical sectional detail through the door latch devices as the same would appear if cut on the line 4—4 of Fig. 1.

While some of the features of this invention are disclosed in an application for patent on gas ranges executed by me on even date herewith, they are not therein claimed but are made the subject of this companion application.

Referring to the drawings the numeral 12 designates the front wall or plate of the range and 15 the door which covers the entrance to the oven which door has laterally projecting trunnions 16 at its lower opposite corners which trunnions are sustained in bearings 14, that are provided on bracket-plates 17 which latter are rigidly attached to the plate 12 near the bottom of the range.

It will therefore be understood that the door being pivoted at the lower corners, will swing downwardly at the front of the range.

The door comprises a metallic channel frame 18 of a greater size than the oven entrance or opening 19 and at the inner side this frame carries a plate 20 which seats around and covers the said oven opening 19. A second and outer plate 21 is also carried by the frame but is slightly spaced from the inner plate to provide an air-space 22, whereby to prevent radiation of heat from the oven.

The metallic frame may be said to comprise upper and lower bars 23 and 24, and two side bars 25 and 26.

Each of the side bars 25 and 26 has a vertical slot 27 therein so that a T-shaped head on the upper end of a link 28, may be engaged in said slot and ride therein as the door is raised or lowered as and for a purpose that will presently be explained.

The lower end of the link 28 is pivotally connected to an upturned outer end 29 of a weight or balance bar 30. This balance bar has a stop-lug 31 that extends toward and presses against the vertical side bar 25 or 26 of the door frame 18, as shown in Fig. 3 of the drawing.

The balance-bar 30 extends through a vertical slot 32, in the bracket-plate 17, and has a rear end that extends into the range at the side of the oven-chamber and which end carries a weight 33.

Between the outer up-turned end 29 and the inner, rear or weighted end, said balance-bar is pivoted at 34 so that its two ends may rock on said pivot and the weighted end will keep the stop-lug 31 seated against the frame of the door.

When the door is swung down to a horizontal position as indicated by broken lines in Fig. 3 of the drawing, the stop lug 31 and the outer end of the balance-bar will be swung down while the weight 33, on the inner end of the balance bar will practically counterbalance the weight of the door and permit the latter to be readily operated.

As the door moves downwardly the T-head on the link 28, will move forward in the slot 27 and as the door reaches a horizontal position, or substantially so, the link-head will reach the forward end of the said slot 27 whereupon by striking the end wall of said slot it will form a brace to sustain

the door and any reasonable weight that may ordinarily be placed thereon.

The door has a latching means and in applying this to the door I make use of the channel-frame.

The upper channel-bar 23 is provided with a plurality of vertical passages 35 while the lower bar 24, is provided with a plurality of passages 36 of a like construction. Of these passages 35, is illustrated in Fig. 4 of the drawing.

The number of these passages 35 and 36 is not essential but in the present instance three are provided in the upper bar while two are formed through the lower bar. All of these passages extend through the channel bar in a vertical plane substantially flush with the outer plate 21 of the door.

A latch plate 37 is carried by the door and seats close against the outer surface of the outer door plate 21. This latch plate is provided in this instance, with three upper latch-arms 38 which project through the upper passages 35, and two lower guide-arms 39, which extend through and are guided in the lower passages 36. It will thus be understood that the latch-plate is held against or in close proximity to the outer side of the door plate 21, by reason of its arms 38 and 39 passing through the passages 35 and 36 but that vertical movement of the latch-plate with respect to the door is provided for.

Each arm 38 of the latch plate is provided at its upper projecting end with a slot 40 and the upper wall 41 of each slot is preferably of a V-shape for a purpose that will now be explained.

On the front plate 12 of the range immediately above the upper bar 23 of the door I provide a plurality of latch-bars 42.

These bars are rigidly secured to the front range-plate and are so spaced that they will register with the slots 40 in the several latch-arms when the latch plate is held up.

Each latch bar 42 has a plurality of V-shaped recesses 43 in its upper side, as clearly shown in Fig. 4 of the drawing, and when the latch-arms 38 pass over the outer ends of these latch-bars 42, the V-shaped upper wall 41, of the latch-arm slot may be seated in any one of the V-shaped recesses 43 and thereby hold the door in either a tightly-closed position or in a slightly open position according to which notch in the latch-bars is engaged.

A handle-bar 44, is attached to the latch-plate so that the latter may readily be raised to disengage the V-shaped wall and recesses, and when thus raised, the door may be steadily swung open.

By reference to Fig. 3 of the drawing it will be noted by the broken lines that when the door is swung down, and during its swinging movement, the stop lug 31, continuously engages the door frame above the pivot and resists the downward movement to the extent of the load of the weights, and that when the door is completely lowered this lug 31 continues to engage the same and serves as a support for the latter.

Having described my invention, I claim,—

1. The combination with a range-front having a door-opening and also having vertical slots below the opposite lower corners of said door-opening, a door for said opening, means at the lower part of the door for pivotally sustaining the latter, a lever extending through each of said slots and having a weighted inner end and an up-turned outer end which up-turned outer end extends over the door pivot and seats against the outer side of the said door and a link having one end pivotally attached to the said up-turned outer end of the lever and the other end of the link having a sliding connection with the door.

2. The combination with a range-front having an opening, of a door pivotally sustained near its lower edge so as to swing up and down with respect to said opening, said door having a vertical slot therein above its pivot, a pivoted lever having an end that seats against the outer side of the door above the pivot of the latter and another end that extends into the range and carries a weight which serves as a counterbalance for the door and a link pivotally connected to the outer end of the lever and entering the slot in the door.

In testimony whereof I affix my signature.

WILLIAM ELBERT SEXTON.