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BROILER RACK OPERATING MECHANISM

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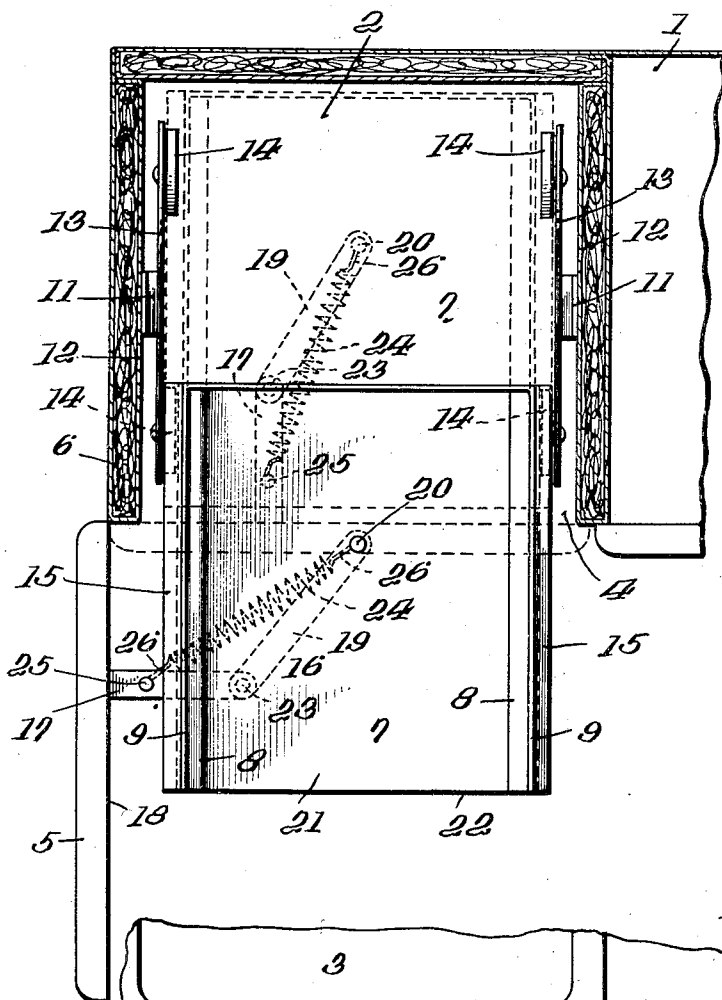


FIG. 1.

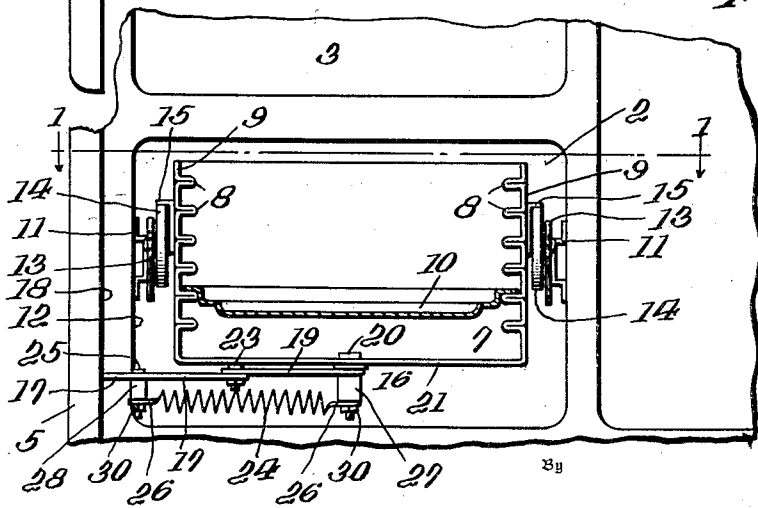


FIG. 2.

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BROILER RACK OPERATING MECHANISM

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2 Claims. (Cl. 126—340)

My invention relates to gas stoves and ranges and more particularly to means for automatically moving the broiling rack or drawer into and out of the oven compartment.

The general object of the invention is to provide improved means for manipulating the rack which will obviate the danger of burning the hands of the user incident to the manual removal of the rack from the oven.

Other objects and advantages will be apparent as the description is proceeded with.

In the accompanying drawing:

Figure 1 is a section taken on the line I—I of Figure 2, showing the positions assumed by the toggle mechanism when the oven door is in open and closed positions respectively; and

Figure 2 is a fragmentary front view of a range embodying the invention and showing the broiler oven door in open position, the broiling pan being shown in section.

Referring more particularly to the drawing 1 denotes a table top range provided with broiling and baking ovens or compartments 2 and 3 respectively. The door opening 4 of the broiler oven 2 is normally closed by a door 5 hinged to one side wall 6, of the range 1, for swinging about a horizontal axis. Mounted for sliding movement through the door opening 4, in a manner presently described, is a broiler rack 7, formed with spaced flanges or ledges 8 on the inner faces of the side walls 9 thereof. These flanges 8 are adapted to slidably and removably receive and support a conventional broiling pan 10 at the desired height.

A pair of brackets 11 secured to the opposing side walls 12 of the broiler oven 2 support horizontally disposed flat metal strips 13 which are suitably secured to the brackets by welding or the like. Mounted on the opposite ends of these strips are rollers 14 for slidably supporting the broiler rack for movement through the door opening 4. Thus flanges 15 formed on or suitably attached to the outer faces of the side walls 9 of these racks seat upon the rollers 14 and in effect form tracks for the rollers.

In order that the broiler rack 7 may be automatically actuated by the opening and closing of the door 5, I provide a toggle mechanism connection 16 between the door 5 and the rack. This mechanism comprises a lever 17 projecting at right angles from the inner face or wall 18 of the door 5 at a level slightly below the horizontal plane of the bottom wall of the rack. Suitable means, not shown, is employed to anchor the lever to the inner face of the door, adjacent the

hinged edge thereof. A second lever 19 is pivoted at its inner or rear end to a headed pin or bolt 20 extending through the bottom wall 21 of the rack 7 at a point midway the side walls and considerably to the rear of its open front end 22. This lever 19 extends forwardly and to the left viewing Figure 1, and is pivoted to the free end of the lever 17, by means of a headed bolt 23. A coil spring 24 connected at one end to the lever 17 by means of a bolt or the like 25, is connected at its other end to the pin 20, the spring being provided with hooked end portions 26 to facilitate assembly. Spacer sleeves 27 and 28 on the pins or bolts 20 and 25 respectively, serve to accurately space the ends of the spring 24, with respect to the levers 17 and 19 and the bottom wall 21, of the broiler rack 7, so that the body of the spring will have ample clearance for lateral movement, relatively to the levers, to and from one side or the other of dead center position. Nuts 30 retain the hooked ends of the spring 24 and the adjacent ends of the levers in place.

In the normal or closed position of the door 5, the lever 17 projects rearwardly into the oven 2 a short distance parallel with and close to the left hand side wall 12 thereof and also parallel to the side walls 9 of the rack 7. The lever 19 will now extend rearwardly and to the right at an angle of about forty-five degrees, viewing Figure 1, where it is pivoted to the bottom wall of the rack 7 at a point somewhat to the right of the longitudinal center of the rack, also viewing Figure 1.

Should the housewife desire to withdraw the broiler rack through the oven door 4, for inspection or other purposes, it is merely necessary for her to swing the door 5 outwardly on its hinges to open position. This causes the rack to move outwardly with the door under the action of the toggle mechanism 16, the side flanges 15 riding on the rollers 14 in an obvious manner during this movement. When the door has been moved to approximately half open position, against the tension of compression spring 24, the latter and the two levers 17 and 19 will extend in a common direction and the toggle mechanism will be on dead center. In this position the bolts 20 and 25 will be spaced apart to the maximum extent and the spring 24 will be correspondingly stretched or extended. Further outward movement of the door will now break the dead center position of the levers whereupon the leverage and resilient pull of spring 24 between the points 20 and 25 will automatically and rapidly move the door to the full open position, with the spring

assuming a contracted position to the left of pivot point 23 and levers 17 and 19. These movements of the door, which in practice are practically continuous, result in the rack being projected through the door opening sufficiently 5 for the maximum convenience in cooking operations. The spring 24 securely maintains the door against accidental movement from its open and closed positions, that is, some little effort is required to overcome the pull of spring 24, 10 during the movement of the latter to and through dead center position. In closing the door the movements of the parts, as just described, are reversed. It will thus be seen that due to the action of spring 24 the final opening 15 and closing movements of the door are accelerated and positively and automatically effected.

Having thus described my invention, what I claim is:

1. A stove comprising a broiling compartment 20 having side walls and a door opening, brackets secured to said side walls, rollers supported by said brackets, a broiler rack having inwardly extending ledges for supporting a pan and formed with outwardly extending flanges seating on 25 said rollers for slidable movement through said door opening, a door hinged to one of said side walls for normally closing said opening, a lever fixed to said door, a second lever pivoted at one end to said first mentioned lever and at its other 30

end pivoted to the bottom wall of said rack, and a coil spring connected at one end to the fixed lever and at its other end connected to the front of the rack whereby initial movement of the door and rack in one direction to cause the spring and levers to assume a dead center aligned position will be resisted by the spring, and further movement in the same direction to cause the spring and the levers to assume a dis- 10 aligned off-center position will be automatically accelerated by the action of the spring.

2. A stove comprising a broiling compartment having side walls and a door opening, a broiler rack having oppositely and inwardly extending pan supporting ledges, cooperating means on said rack and the side walls of said compartment supporting said rack for slidable movement through said door opening, a door hinged to one of said side walls normally closing said opening, 15 toggle mechanism comprising a pair of pivotally connected levers one of which is fixed to said door and the other pivoted to said rack whereby initial movement of the door in one direction will move the levers to a dead center position 20 and further movement of the door in the same direction will continue this movement of the levers to an off dead center position and a coil spring connecting said levers for continuing said last mentioned movement of the levers.

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