Feb. 26, 1946. W. R. JONES 2,395,486

MEANS FOR ADJUSTING BROILERS AND LIKE FOOD SUPPORTS

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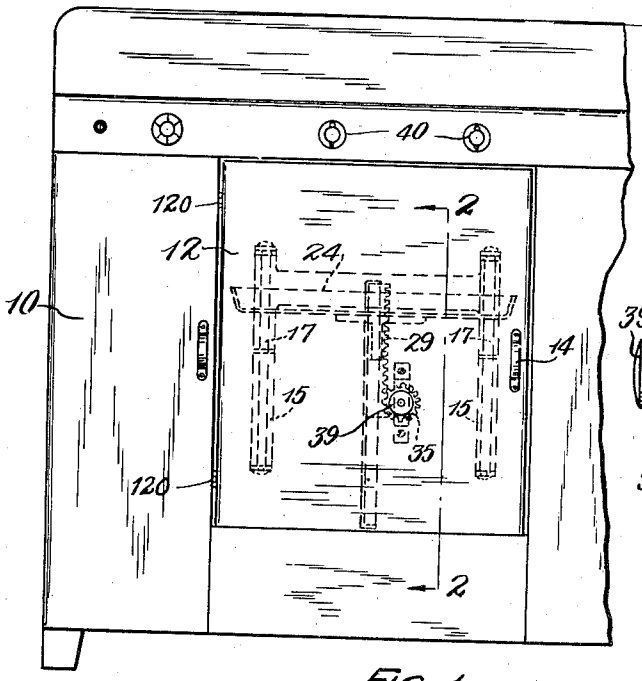


FIG. 1

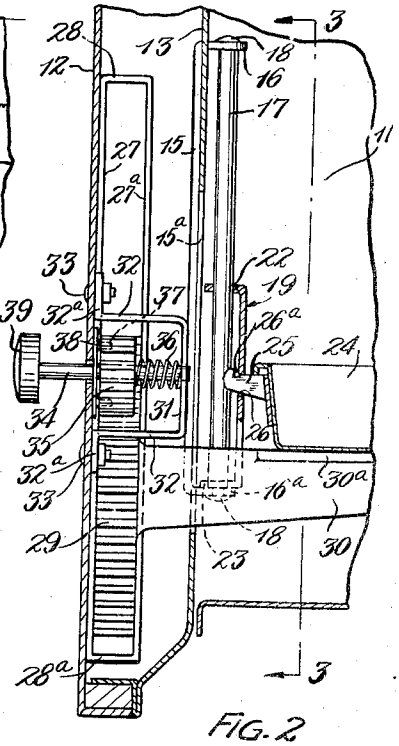


FIG. 2

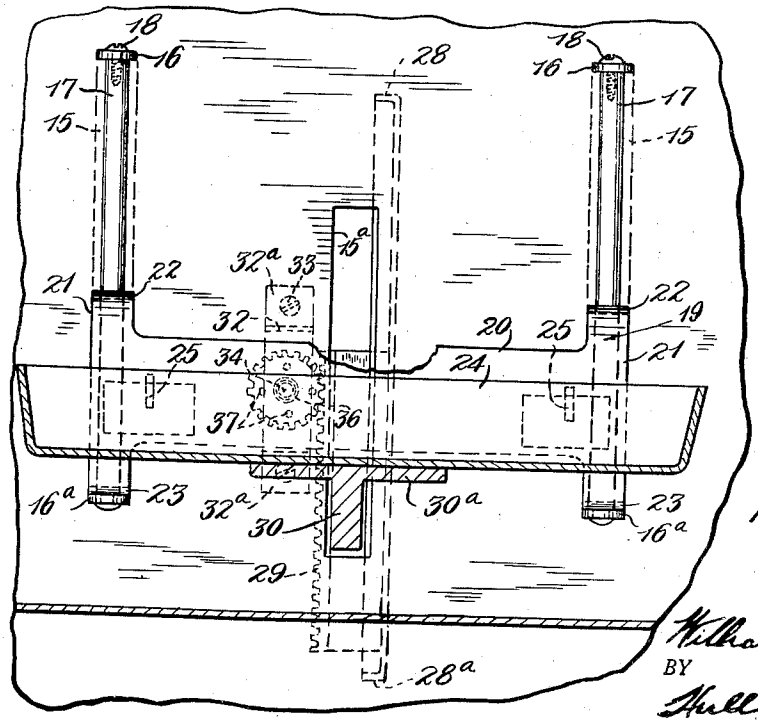


FIG. 3

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MEANS FOR ADJUSTING BROILERS AND LIKE FOOD SUPPORTS

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5 Claims. (Cl. 126—337)

This invention relates to cooking devices and more particularly to broilers, or devices analogous thereto, wherein the articles to be cooked are supported in variable proximity to the source of heat.

As is well known to those versed in the culinary art, it is desirable that the broiler or similar support for the articles to be cooked may be supported at varying distances from the source of heat. It is the general purpose and object of this invention to provide a device of the character referred to herein with means whereby it may be conveniently adjusted toward and from the source of heat and without the necessity for opening the door of the compartment in which the said device may be located.

Further and more detailed objects and advantages of the invention will be set forth in connection with the description of the parts thereof shown in the drawing herein and in which drawing Fig. 1 represents a front elevational view of a portion of a range having a broiling compartment therein, the broiler and parts of the mechanism whereby the vertical adjustment of the broiler may be obtained being shown in broken lines; Fig. 2 an enlarged sectional view taken on the line 2—2 of Fig. 1, the food support being in its lowered position; and Fig. 3 a sectional view taken on the line 3—3 of Fig. 2.

Describing by the use of reference numerals the various parts shown in the drawing, 10 denotes a portion of the front wall of a cooking stove or range, the same being provided with a broiler compartment 11, the front of which is closed by a door comprising an outer wall 12 and an inner lining 13. The door is pivotally connected at one of its vertical edges to the portion 10 of the front wall, as by means of hinges, indicated at 120. Adjacent to its opposite vertical edge, it is provided with the handle 14 for the purpose of opening and closing the same. 15 denotes a pair of laterally spaced supporting straps secured to and extending vertically along the outer wall of the lining and each having a top and bottom flange 16, 16a, respectively, extending inwardly through the lining, the flanges on each strap providing top and bottom supports for a guide rod 17, the top and bottom of each rod being secured to the flange with which it is associated, as by means of screws 18 extending through the flanges and threaded into the opposite ends of said rods.

19 denotes generally a carriage which is slidably mounted upon the guide rods 17. This carriage comprises a transversely extending intermediate web portion 20 and vertically elongated end portions 21, each end portion being provided with top and bottom flanges 22 and 23, respectively, which are provided with vertically aligned apertures for the reception of a rod 17. The bottom flanges 23 are adapted to rest upon the bottom flanges 16a of the straps 15 when the carriage is in its lowermost position, as shown in Figs. 2 and 3. It will be noted that the rods 17 and the carriage 19—23 are in proximity to but spaced inwardly from the oven door lining 13.

24 denotes generally a pan-like food supporting member such as constitutes part of the broiler equipment with which ranges are usually provided. This supporting member is provided on its front wall with a pair of hangers 25 which are adapted to be projected through slots 26 provided therefor in the web portion 20 of the carriage, the hangers being shown as short arms of greater depth than width and being provided each with an upwardly extending hooked end 26a adapted to engage the front or outer wall of the web 20 and the depth of the slots and the depth of the hangers being such as to enable the hangers, by the engagement of the hooked ends 26a thereof with said front or outer wall of the web 20, to maintain the supporting member 24 in a substantially horizontal position.

27 denotes the outer and 27a the inner rail of a channeled guide which is fastened to the inner side of the outer wall 12 of the door, said guide having top and bottom walls 28 and 28a, respectively, which serve as stops to limit the excursions of the rack 29 which is slidably mounted within the guide. Secured to this rack is a bracket arm 30, which extends through a vertical slot 15a in the door lining and which is widened at its top, as shown at 30a, to provide an extended support for the bottom of the pan-like supporting member 24. The rack is so located that the supporting portion of the bracket, when raised to the position shown in Figs. 2 and 3, will engage the bottom of the pan-like supporting member midway between the sides thereof.

A U-shaped bracket comprising the base 31 and legs 32 is fastened to the inner side of the outer door wall 12 by means of feet 32a and bolts 33. 34 denotes a shaft which extends through a journal opening provided in the door wall 12 and has its inner end slidably journaled in the base member 31. 35 denotes a pinion, rigid with said shaft and meshing with the rack 29. A spring 36 surrounds the inner portion of the shaft 34, bearing at one end against the base member 31 and at its other end against the pinion, whereby the latter is normally pressed outwardly against the inner

wall of the oven wall 12. The pinion is provided with a plurality of angularly spaced apertures 37 extending thereinto from the outer face thereof, and the inner wall of the door plate 12 is provided with studs 38 adapted to enter said apertures. The outer end of the shaft 34 is provided with a hand wheel 39.

The compartment in which the supporting member 24 is located is provided with heating elements located in the upper portion thereof. The heating elements may be electrical heating elements, charcoal, or fluid-fuel heating elements. In the embodiment of my invention illustrated herein, the heating elements are of the last-mentioned type and the supply of fuel thereto is controlled by means of valves, indicated at 40.

With the parts constructed and arranged as described, it is believed that the operation will be readily understood. Assuming that the supporting member 24 is in a position remote from the heating element or elements, as shown in Figs. 2 and 3, and that it is desirable to elevate the same thereby to bring the article or articles on the supporting member in closer proximity to said element or elements, as shown in Fig. 1, the operator grasps the hand wheel 39 and pushes inwardly upon the same until the pinion is disengaged from the studs 38, whereupon the pinion may be rotated and the rack elevated. This will cause the bracket, if its upper surface should be spaced from the bottom of the food supporting member, to be brought into engagement with such bottom and, by further elevation of the rack and bracket, to position the food supporting member in any desired relation to the source of heat. Thereupon the operator will relax the inward pressure upon the wheel 39 and permit the spring 36 to press the pinion outwardly whereupon, by imparting a comparatively slight rotary movement to the pinion, the studs 38 will enter the apertures 37, thereby effectively locking the supporting member 24 in the position to which it has been elevated. By pushing inwardly again upon the hand wheel 39 and rotating the pinion in the appropriate direction, the supporting member may be moved closer to or further away from the source of heat and may be locked thereafter in its new position in the manner described. The rack 29 is prevented from tilting during these movements by means of the guide rails 27, 27a and is of sufficient width to permit the pinion to mesh therewith to an extent necessary to operate the same notwithstanding the fact that the pinion must be moved inwardly a sufficient distance to disengage the studs 38 from the apertures 37. When the bottom flanges 23 of the carriage have been brought into engagement with the bottom flanges 16a of the supporting straps 15, the carriage and the food supporting member will have reached their lowermost positions, but the bracket 30 may be lowered by further operation of the hand wheel 39 and pinion 35 to disengage the upper surface thereof from the bottom of the food supporting member, whereupon the latter, with its contents, may be removed from the carriage 19, permitting the contents to be served directly from the food supporting member.

The construction whereby the food supporting member 24 may be raised and lowered is capable of steady operation, whereby danger of splashing any grease, due to such operation, will be eliminated.

The door shown herein may be provided with a transparent panel section permitting the operator to inspect the condition of the article being cooked and also to facilitate positioning the same in the most desirable relation to the source of heat.

The invention shown herein can, furthermore, be applied to and installed in connection with existing doors for broiler compartments or similar compartments with comparatively slight changes in or additions to the door constructions; it is, moreover, inexpensive and economical of production.

Having thus described my invention, what I claim is:

1. In a stove comprising a cooking compartment, a door for said compartment having an outer wall and a lining spaced from the said wall, a pair of laterally spaced vertical guides supported within the said compartment by the lining, a carriage extending transversely of said compartment and having its ends mounted upon said guides, a supporting member for articles to be cooked secured to and extending inwardly from the said carriage, a vertically extending rack slidably supported between the outer wall and the lining of the door, a bracket connected with said rack and extending inwardly therefrom through the lining and adapted to be brought into and out of engagement with the said supporting member, the lining being provided with a vertical slot to accommodate the reciprocatory movements of the said bracket, a pinion meshing with said rack, and a shaft on which the said pinion is mounted, the outer end of the shaft projecting through the outer wall of the door.

2. In a stove comprising a cooking compartment, a door for said compartment comprising an outer wall and a lining spaced inwardly from said wall, a vertically extending rack guide secured to the inner face of the said wall, a rack slidably mounted in said guide, a pinion within said door meshing with said rack, a shaft on which said pinion is mounted and extending outwardly through said door, the lining of the said door being provided with a vertical slot, a bracket secured to the rack and extending inwardly into the compartment through said slot, a supporting member for articles to be cooked and adapted to be raised and lowered by said bracket, and means for guiding the said supporting member while being raised and lowered by the said bracket, the said means comprising a pair of laterally spaced vertical guide members supported by the lining within the said compartment, a carriage comprising an intermediate web and end members mounted on said guide members, and arms carried by said supporting member and detachably connecting the latter with the said carriage.

3. In a stove comprising a cooking compartment, a door for said compartment supported for movement about a vertical edge thereof, a vertically extending rack supported by and within the door, a vertically movable carriage also supported by and within the door and having means for detachably connecting a food supporting member to said carriage, a bracket carried by said rack and adapted to project into said compartment beneath a food supporting member connected to said carriage, a pinion within said door meshing with said rack, and a shaft on which said pinion is mounted extending outwardly through said door.

4. In a stove comprising a cooking compart-

ment and a door for said compartment; one or more vertical guide members secured to the inner portion of said door, a carriage mounted for vertical movement upon said member or members, the said carriage having means adapted to engage cooperating means on the outer end of a food supporting member thereby to removably sustain the latter member within the said compartment, a bracket movably supported by said door and projecting into said compartment and adapted to engage the bottom of a food-supporting member sustained by said carriage, means carried by said door and connected to the said bracket for raising and lowering the latter thereby to enable it to engage and disengage the bottom of the food supporting member and thereby to raise and lower the latter and the carriage, and a stop for limiting the downward movement of said carriage.

5. In a stove comprising a cooking compartment and a door for said compartment; one or more vertical guide members secured to the inner portion of said door, a carriage mounted for vertical movement upon said member or members, the said carriage having means for removably sustaining a food-supporting member thereon, a bracket movably supported by said door and projecting into said compartment and adapted to engage the bottom of a food-supporting member sustained by said carriage, a rack carried by said door and connected to the said bracket for raising and lowering the latter thereby to enable it to engage and disengage the bottom of the food-supporting member and thereby to raise and lower the same and the carriage, a stop for limiting the downward movement of said carriage, a pinion within said door for operating said rack, a shaft for said pinion extending outside said door, and a handle on the outer end of said pinion.

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