

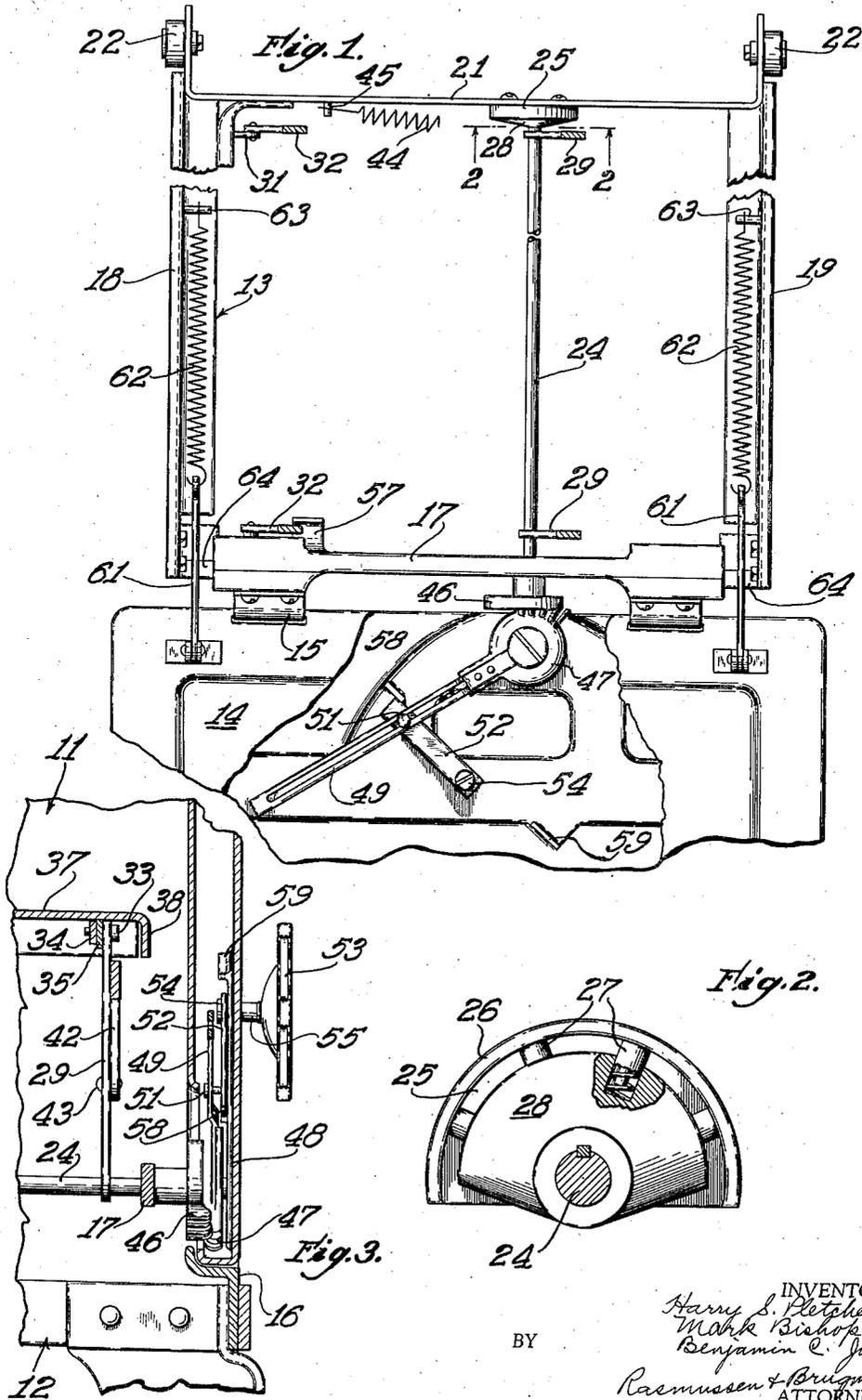
Dec. 6, 1938.

H. S. PLETCHER ET AL

2,139,382

BROILER

Original Filed Nov. 22, 1935



INVENTORS.
Harry S. Pletcher,
Mark Bishop +
Benjamin C. Jones
BY
Rasmussen & Brugman
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,139,382

BROILER

Harry S. Pletcher, Mark Bishop, and Benjamin C. Jones, Joliet, Ill., assignors to The Moore Corporation, Joliet, Ill., a corporation of Delaware

Original application November 22, 1935, Serial No. 51,106. Divided and this application May 29, 1937, Serial No. 145,400

2 Claims. (Cl. 126—337)

This invention relates in general to broilers for fluid fuel burning stoves, and has more particular reference to mechanism for adjustably varying the distance between the broiler pan and/or the product being cooked and the broiler burner and to frictionally maintain the same in the desired position. The instant invention is a division of our co-pending application, Serial No. 51,106, filed November 22, 1935, and issued January 25, 1938 as No. 2,106,506.

A principal object of the present invention is the provision of novel means for maintaining the broiler pan in any adjusted position.

Another important object of the invention is the provision of raising and lowering means for a broiler pan, having actuating or control means therefor extending outwardly through a closure member for the broiler oven, and a friction member mounted on said actuating or control means for maintaining the broiler pan in any adjusted position.

A further object of the invention is the provision in such a broiler of a hinged closure member upon which is mounted mechanism for controlling the vertical height of the broiler pan when the member is in any position.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, when taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

In the drawing,

Figure 1 is a top plan view of the interior of the broiler drawer with the door open and parts broken away;

Fig. 2 is a detail vertical section of the friction device taken substantially on the line 2—2 of Fig. 1, parts being broken away; and

Fig. 3 is a detail vertical section of the broiler oven taken substantially through the center with the door in closed position.

For the purpose of illustrating the invention, we have shown in the drawing a broiler compartment or oven of any desired or well known construction, indicated generally at 11, supported on a suitable frame 12, and a drawer or skeleton frame 13 adapted to be moved into and out of said compartment. A door or closure member 14 is hinged to the drawer 13 in any desired manner, as shown at 15, and is adapted to fit snugly within a suitable flanged opening in the front wall 16 of the compartment or oven 11. It will be readily apparent that the door 14 may be hinged directly to the front wall 16 and

the drawer per se eliminated by securing the broiler pan raising and lowering mechanism (to be later described) within the oven compartment 11, if such an arrangement is desired.

The drawer 13 comprises a skeleton frame made up of a front member 17, side members 18 and 19 and a rear member 21, rigidly secured together in any suitable manner. Rollers 22 may be rotatably mounted upon rearward extensions of the rear frame member 21 for engagement in suitable trackways provided at the sides of the compartment 11, and secondary rollers (not shown) may be provided within the compartment to cooperate with the side frame members 18 and 19. These rollers guide and support the drawer 13 in its movements in and out of the compartment or broiler oven 11.

Mechanism is provided in the drawer 13 for raising and lowering a broiler pan relative to the usual broiler burner (not shown) located adjacent the top of the compartment 11, which comprises a rod 24 extending longitudinally of the drawer and rotatably mounted in any desired manner adjacent its forward end in the front frame member 17. At its rear end the rod 24 is or may be rotatably mounted in a bearing bracket 25 which in turn is secured to the rear frame member 21. The bearing member 25 is provided with a forwardly extending circumferential flange 26 (Fig. 2) with the under surface of which one or more spring-pressed frictional plugs or studs 27 are adapted to cooperate. Each of the studs 27 is mounted in a radially inclined recess provided in a segmental member 28 which in turn is rigidly mounted on the rod 24 in any desired manner. The frictional contact between the studs 27 and the flange 26 of the stationary bearing member 25 will prevent accidental displacement of the rod 24 and associated parts from any adjusted position.

The rod 24 is provided adjacent each end with an upstanding arm 29 rigidly secured thereto in any suitable manner. Pivotaly secured at their lower ends to the front frame member 17 and a bracket 31, respectively, are a pair of arms 32, which are similar to the arms 29. The rearward pair of arms 29, 32 and the forward pair of arms 29, 32 are each pivotaly connected at their upper ends by means of pins 33 with a link 34 (Fig. 3). A pan supporting member 35 is slidably mounted between each of the links 34 and the arms 29 and 32, by means of a pair of elongated slots therein which co-operate with the pins 33.

Supported on the members 35 is a broiler pan 55

37, of any desired construction, which may be provided with depending marginal flanges 38 at the front and rear ends thereof having a notch or cut away portion (not shown) which is adapted to fit over a pin, one end of which is securely fastened to the supporting member 35, whereby the pan is prevented from sliding longitudinally of the supporting members 35.

Rotatably mounted on each of a pair of pins 33, which are fastened to the supporting structure 35, is one end of a compensating link 42, the other end of each of said links 42 being pivotally mounted at 43 to its related arm 29. The links 42 are so dimensioned and located as to hold the movement of the pan supporting members 35 to a straight vertical line in the raising and lowering thereof through the operation of the parallel motion mechanism comprising the members 24, 29, 32, 33 and 34, the pins 53 sliding in the slots, located in the arms 35, in such movement. A spring 44, secured at one end to the rear pivot pin 43 and at the other end to the frame 13 in any suitable manner, as at 45, may be provided to aid in counter-balancing the weight of the pan 37, its associated mechanism, and the product being cooked.

In order to actuate the above described broiler pan lowering and raising mechanism, a gear segment 45 is rigidly secured in any suitable manner to the forward end of the rod 24 immediately in front of the frame member 17. The gear segment 45 is in constant engagement with and adapted to be actuated by a gear segment 47 which is rotatably mounted in any desired manner to a frame member 48 within and forming a part of the door 14. The teeth on the respective segments 46 and 47 are so dimensioned and formed that they are always in mesh with each other regardless of the angular position assumed by the segment 47 due to the pivotal movement of the door 14.

Formed integrally with the gear segment 47 or rigidly secured thereto in any suitable manner is a slotted lever 49. Co-operating or engaging with the slot in the lever 49 is a pin 51 which is secured to one end of a lever 52, the other end of which is rigidly secured to the stub shaft of a handle 53 in any desired manner, as by means of a screw 54. The handle 53 is rotatably mounted in the door frame member 48, and may be maintained in proper position by means of spacing washers 55 mounted on its stub shaft.

With the above described arrangement, it will be readily apparent that rotation of the handle 53 will, through members 52, 51 and 49, operate gear segment 47 which will in turn actuate the gear segment 46 and the broiler pan raising and lowering mechanism whether the door 14 is in open, closed, or partially open position. It will also be apparent that the friction device 26, 28 will maintain the pan, its associated mechanism and the product to be cooked in any adjusted position. The studs 27 will slide within the flange member 26 with sufficient freedom of movement, but the force exerted by the springs located beneath the studs 27 is enough to bear against the flange member 26, and maintain the same in any desired position. Thus, the height of the broiler pan 37 may be set and will remain

in that position until it is desired to raise or lower the pan to suit the individual's need.

A stop member or lug 57 is or may be formed integral with the front frame member so as to be contacted by the front arm 32 to limit the downward movement of the pan 37, and the upward movement thereof may be limited by the pins 33 contacting the left-hand end of the slots. Additional stop members 58 and 59 may also be formed integral with the door frame member 48 for limiting the upward and downward movement, respectively, of the broiler pan by being extended into the path of travel of the lever 52 (Fig. 1).

Hingedly mounted to the door 14 adjacent the hinge points 15, are two stop members 61, to the other end of each of which is secured one end of a door counter-balancing spring 62 which is anchored at its other end in any suitable manner, as at 63, to the side frame members 18 and 19, respectively, of the drawer 13. Intermediate their ends on their lower surfaces the members 61 are provided with a suitable notch (not shown) forming a shoulder which is adapted to abut against a lug 64, formed integral with the front frame member 17, to limit the downward movement of the door 14.

It will be apparent that the above described mechanism constitutes a broiler structure in which the closure member may be opened to give access to the product being cooked without removing the latter from the oven compartment, while still permitting vertical adjustment of the broiler pan from the exterior of the closure member in any position of the latter.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

We claim:

1. In a broiler oven having a broiler pan and mechanism for adjusting the vertical position of said pan; a friction device for maintaining said pan and said mechanism in any adjusted position against accidental displacement thereof, said friction device comprising a segmental member connected to said adjusting mechanism, a plurality of studs mounted in said segmental member, and a stationary member surrounding said studs and segmental member to provide a frictional contact therefor.

2. In a broiler oven having a broiler pan and mechanism for adjusting the vertical position of said pan including a rotatable shaft; a friction device comprising a segmental member mounted on and secured to said shaft, a plurality of studs mounted in said segmental member, and a stationary bearing member surrounding said studs and segmental member, said friction device maintaining said pan and said mechanism in any adjusted position against accidental displacement thereof.

HARRY S. PLETCHER.
MARK BISHOP.
BENJAMIN C. JONES.