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BROILER

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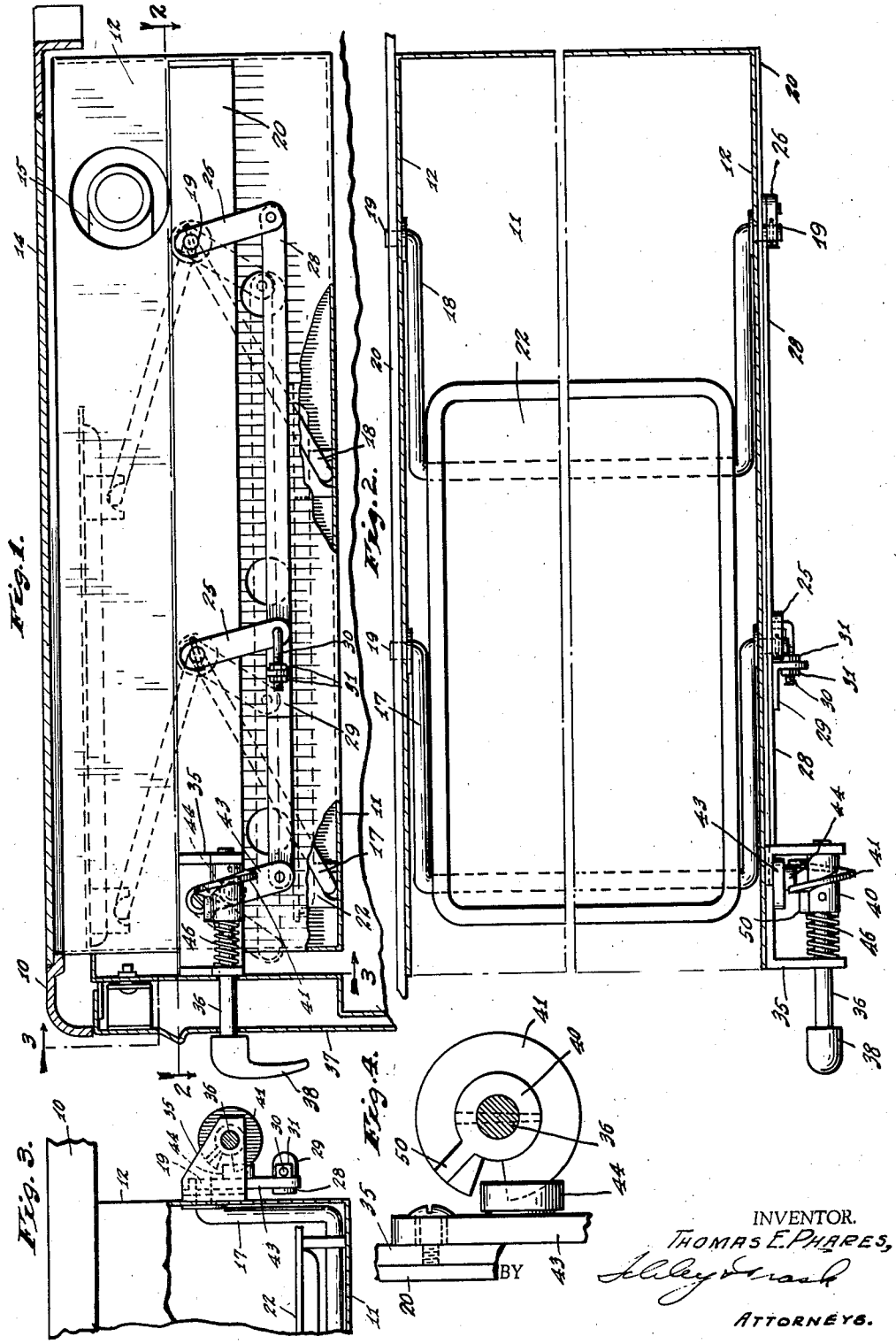


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

INVENTOR.
THOMAS E. PHARES,
BY
Ashley & Mash
ATTORNEYS.

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Thomas E. Phares, Shelbyville, Ind., assignor to Chambers Corporation, Shelbyville, Ind., a corporation of Indiana

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My invention relates to gas-range broilers, and is an improvement on the invention set forth and described in United States Letters Patent No. 2,011,848, granted August 20, 1935, to John E. Chambers. It is the object of my invention to produce an improved mechanism for regulating the height of the broiler-pan in a broiler of the general type described in that prior patent.

In practicing the present invention, the broiler-pan is supported, as in the prior patent, upon the intermediate legs of a pair of U-shaped yokes pivotally mounted in the broiler compartment on horizontal, parallel, axes. These yokes are provided respectively with radially extending arms, disposed in parallel relationship and having their free ends interconnected by a link. The vertical elevation of the broiler pan is controlled by mechanism associated with the link, such mechanism including a shaft which projects forwardly through the front wall of the range and which carries a helical cam-rib. A cam-follower, co-operating with such cam-rib, is operatively connected to the link and, as the cam rotates, serves to swing the U-shaped yokes and thereby control the elevation of the broiler-pan.

The accompanying drawing illustrates my invention: Fig. 1 is a fore-and-aft section through a gas range showing the broiler compartment and broiler-pan controlling mechanism in side elevation; Fig. 2 is a horizontal section through the broiler compartment on the line 2—2 of Fig. 1; Fig. 3 is a fragmental vertical section on the line 3—3 of Fig. 1; and Fig. 4 is an end elevation of the helical cam-rib and the parts associated therewith.

The gas-range shown in the drawing has the usual cooking top 10 below which is mounted a broiler compartment having a bottom wall 11 and side walls 12. The broiler compartment is open at the top and is disposed beneath an opening in the cooking-top 10, such opening being provided with a cover 14. In the upper portion of the broiler compartment there is disposed a horizontal burner 15 which may be interconnected with the cover 14 in the manner set forth in the prior patent above referred to.

Extending transversely within the broiler compartment are two U-shaped yokes 17 and 18, conveniently formed of round rod, and having their ends bent outwardly to form trunnions 19 through the medium of which the yokes are pivotally mounted in bars 20 secured to the side walls 12 of the broiler compartment. A broiler pan 22 is mounted upon the intermediate portions of the yokes 17 and 18, whereby it may be raised and lowered as the yokes swing above the respective axes of the trunnions 19.

At one side of the broiler compartment, the trunnions 19 project through and beyond the associated bar 20 for the reception of arms 25 and 26 which are rigidly secured respectively to the trunnions of the yokes 17 and 18. As shown, the arms 25 and 26 project downwardly and slightly rearwardly from the trunnions with which they are respectively associated and have their lower ends pivotally connected to a link 28. The connection of one of the arms, here shown as the arm 26, to the link 28 is at a fixed point, but the connection of the other arm to the link is desirably adjustable. To this end, there is provided on the link 28 an L-shaped bracket 29 pierced for the reception of the screw-threaded end of the rod 30, such rod being held in fixed relation relative to the bracket 29 by nuts 31 which are mounted on the rod and which engage opposite sides of the bracket. From the bracket 29, the rod 30 extends rearwardly and has its rear end bent inwardly to be received in a hole in the free end of the arm 25. By adjusting the nuts 31, the relative angular dispositions of the yokes 17 and 18 may be changed, if necessary, to bring the broiler pan 22, which is supported on the intermediate portions of the yokes, into a horizontal position.

Near the front end of the broiler compartment and above the front end of the link 28, there is secured to the side wall of the compartment a U-shaped bracket 35. A rock-shaft 36 is journaled in the parallel legs of this bracket and extends forwardly through the front wall 37 of the range, where it is provided with a radially projecting operating arm 38. Between the parallel legs of the bracket 35, there is secured to the shaft 36 a cam member 40 provided with a helical cam-rib 41, desirably slightly less than 360° in extent. An operating arm 43, pivotally secured to the base of the bracket 35 on an axis coplanar with the trunnions 19, extends downwardly from its axis of pivotal mounting and bears at an intermediate point a cam follower in the form of a roller 44. At its lower end, the operating arm 43 is pivotally connected to the front end of the link 28.

Desirably, the shaft 36 and the cam member 40 which is rigid with it, are axially movable in the shaft-bearings, and means shown as a spring 46 is provided for yieldingly forcing the end face of the cam member 40 against the rear leg of the bracket 45 to form a friction brake opposing rotation of the shaft and cam member.

In Fig. 1, the parts are shown in full lines in the positions they occupy when the broiler pan 22 is at the lower limit of its adjustment, or in contact with the bottom wall 11 of the broiler compartment. In this condition, the cam-follower 44, which engages the front face of the helical cam-rib 41, is near the inner end of such cam-rib. By rotating the shaft 36 in a clockwise direction as viewed from the front of the range, the cam-follower 44 is forced forwardly by the cam-rib 41, thus swinging the operating arm 43 and causing the link 28 to move forwardly to raise the broiler pan. Since the rib 41 has an extent less than 360°, the cam-follower 44 is always free to move forwardly out of engagement with it to permit independent raising of the broiler pan as by the mechanism set forth in the prior patent above mentioned.

To limit the pan-raising rotation of the shaft 36, the cam member 40 may be provided with an axially extending rib 50 which, by engagement with the cam follower 44, prevents the shaft 36 from being rotated beyond the position in which the cam follower is at the forward end of the helical cam-rib.

Desirably, the parts are so arranged that less than a full revolution of the operating shaft 36 is required to move the yokes 17 and 18 throughout their entire range of adjustment. As a result, the position of the radially extending handle 38 is an indication of the height of the broiler pan within the compartment.

I claim as my invention:

1. Mechanism for supporting and vertically adjusting a pan in a compartment, said mechanism comprising a pair of U-shaped members having intermediate pan-supporting portions and parallel legs pivotally mounted at their ends on parallel horizontal axes, substantially parallel arms respectively rigid with said members, a link interconnecting said arms, and means for moving said link to swing said members and thereby raise and lower said pan, said means comprising an operating shaft disposed in a vertical plane perpendicular to the axes of said U-shaped members, a helical cam-rib on said shaft, an operating arm pivotally mounted on an axis parallel to the pivotal axes of said members, the free end of said operating arm being connected to said link, and a cam-follower at an intermediate point on said operating arm and engaging said helical cam-rib.

2. The invention set forth in claim 1 with the addition that the interconnection between said link and the arm on one of said U-shaped members is adjustable longitudinally of the link to vary the relative positions of said members.

3. The invention set forth in claim 1 with the addition of friction brake means opposing rotation of said shaft with sufficient force to prevent rotation thereof under the influence of the weight of the pan.

4. Mechanism for supporting and vertically adjusting a pan in a compartment, said mechanism comprising a pair of spaced, pan-supporting members arranged in said compartment and generally vertically movable, and means for jointly moving said members to raise and lower the pan, said means including an operating member extending along one side of the compartment and movable generally longitudinally of itself, means operatively interconnecting said operating member and each of said pan-supporting members, one of said means being adjustable to vary the relative vertical disposition of said pan-supporting members, a rotatable operating shaft parallel to said operating member, a helical cam-rib on said shaft, and a cam follower co-operating with said cam rib and operatively connected to said operating member.

5. The invention set forth in claim 4 with the addition of friction brake means opposing rotation of said shaft with sufficient force to prevent rotation thereof under the influence of the weight of the pan.

6. Mechanism for supporting and vertically adjusting a pan in a compartment, said mechanism comprising a vertically adjustable means for supporting said pan, a rotatable operating shaft provided with a helical cam-rib, a cam-follower co-operating with said cam-rib, and means operatively connecting said cam-follower and said adjustable means for joint movement, said cam-follower and cam-rib being so arranged that the cam-follower engages one face only of the cam-rib to limit movement of the former under the influence of the weight of said pan, said cam-follower being movable generally axially of said shaft out of engagement with such rib-face.

7. The invention set forth in claim 6 with the addition that the pitch of said cam-rib is such that less than a full rotation of said shaft is required to move said pan-supporting means throughout the entire range of its vertical adjustment, said shaft having associated with it a friction brake capable of preventing shaft rotation under the influence of the weight of the pan.

8. The invention set forth in claim 6 with the addition that the pitch of said cam-rib is such that less than a full rotation of said shaft is required to move said pan-supporting means throughout the entire range of its vertical adjustment.

THOMAS E. PHARES.