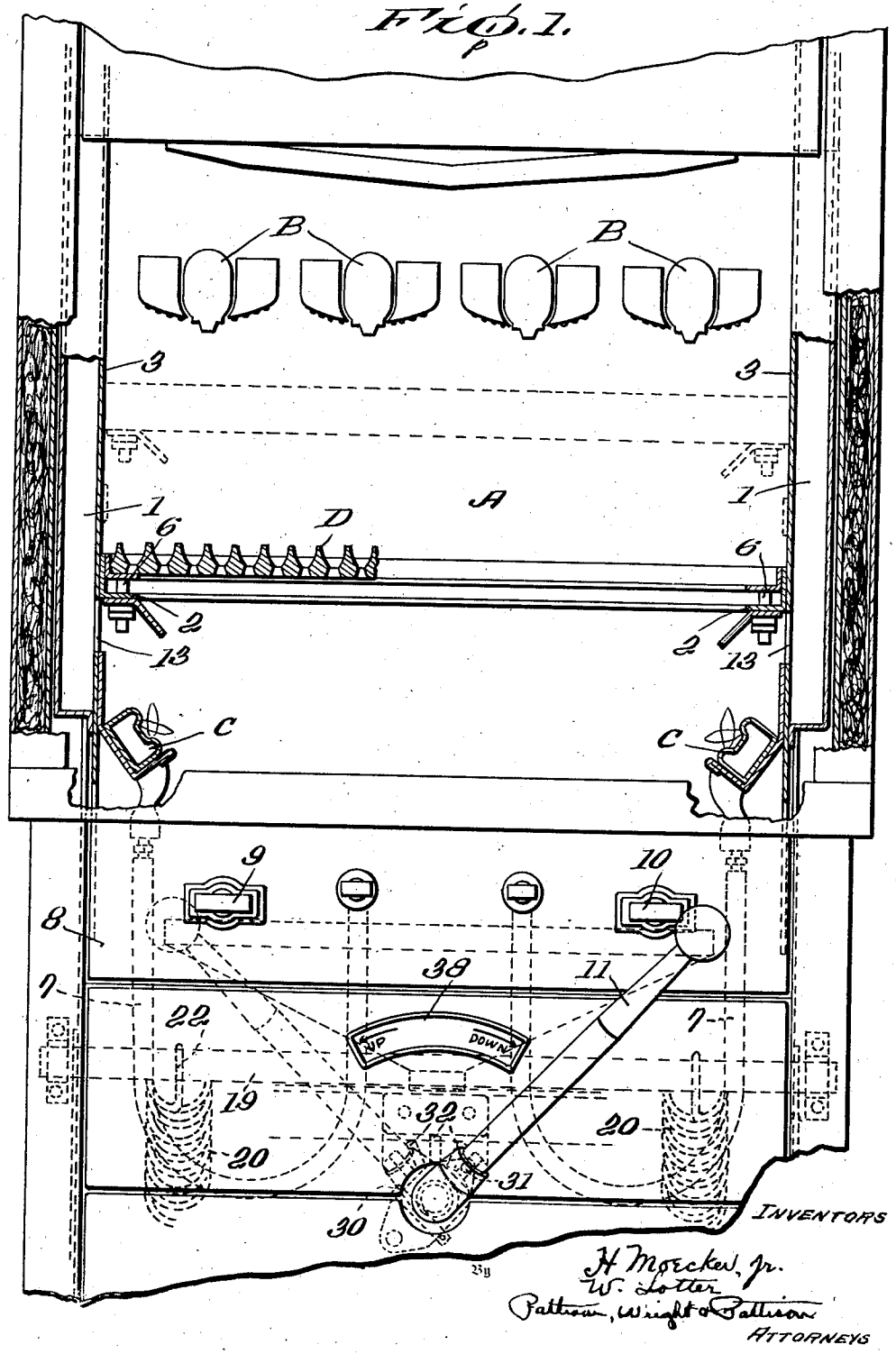
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BROILER UNIT

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FIG. 1.

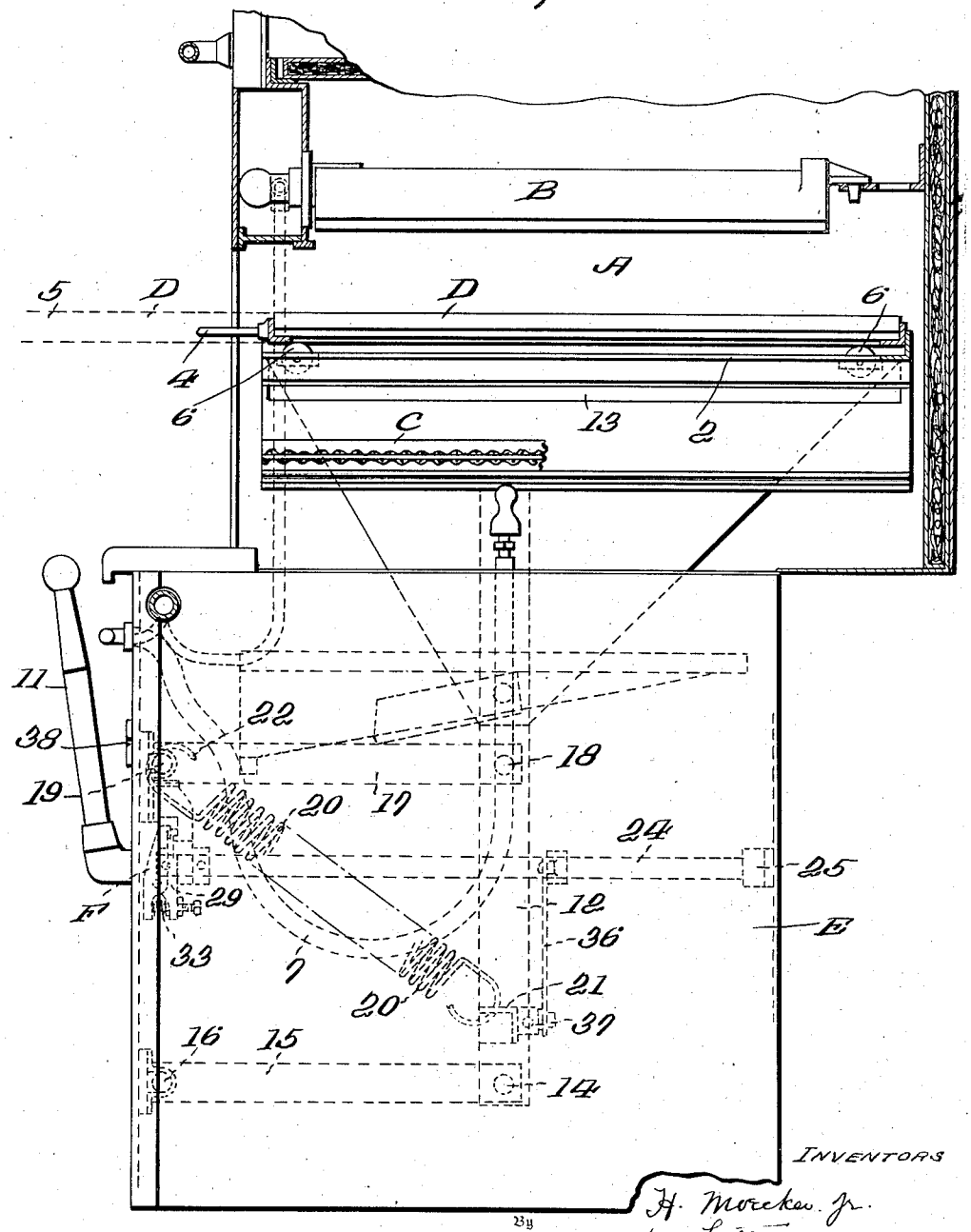


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Fig. 2.



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Fig. 3.

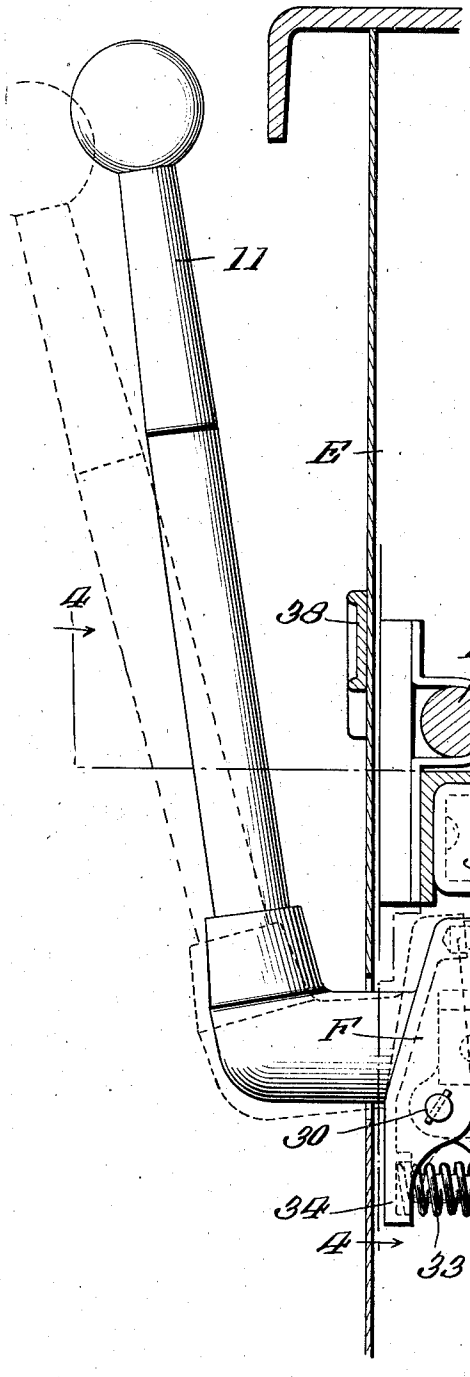
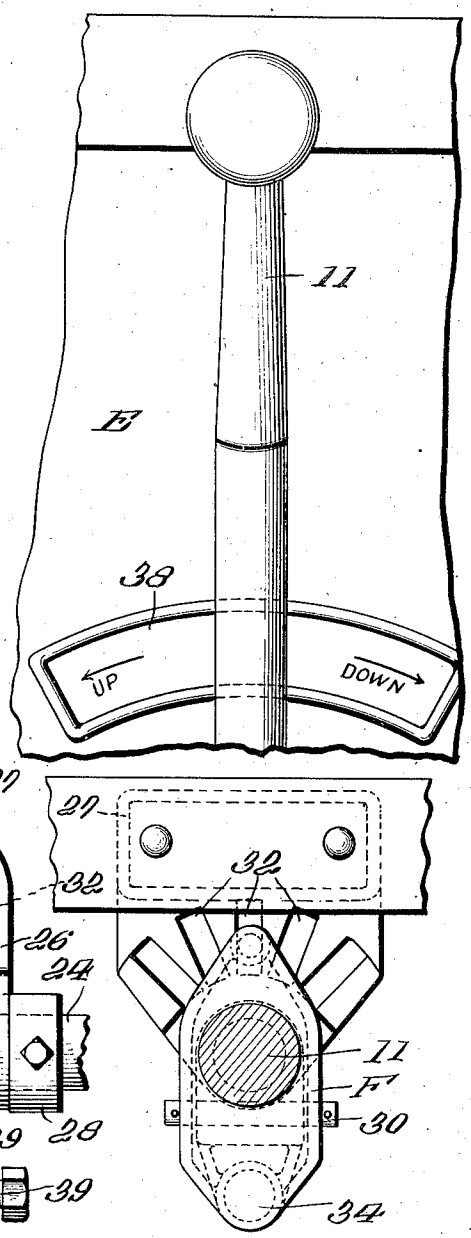


Fig. 4.



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BROILER UNIT

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Application April 10, 1941, Serial No. 387,968

4 Claims. (Cl. 126—41)

This invention relates to an improved broiler unit and pertains more particularly and specifically to the provision of a simple yet highly efficient mechanism for raising and lowering a movable broiler or broiler grid in the broiling oven of a cooking range.

A further object of the invention is to provide a simple yet highly effective means for locking and retaining the broiler grid in any one of a plurality of its set positions.

A still further object is to provide a novel means for indicating the positions of the broiler grid in respect to the upper broiler burner.

Other specific objects, novel features of construction and improved results of the invention will appear in more detail from the following description when read in the light of the accompanying drawings.

In the drawings:

Fig. 1 is a fragmentary front view, partly in vertical section, through a broiler unit equipped with the present improved invention.

Fig. 2 is a fragmentary side view, partly in vertical section, of the unit and construction illustrated in Fig. 1 of the drawings.

Fig. 3 is a detailed view partly in vertical section of the grid raising and lowering and locking members.

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 3.

In the drawings the grid is illustrated as being mounted in a broiler chamber A having in the upper end thereof fixed upper burners B and in its bottom oppositely arranged lower burners C which are secured to the inner walls of flue passageways 1 which are mounted for vertical reciprocation within the broiler chamber so as to raise and lower the lower burners in respect to the upper burners.

The grid D is suitably supported upon a pair of trackways 2 which are oppositely disposed at the sides of the broiler chamber and suitably secured to the inner walls 3 of the flue passageways 1 so that the grid is raised and lowered with the lower burners C. The grid D at its front is provided with a handle 4 by which it may be pulled outwardly from the oven to the position illustrated at 5 by dotted lines in Fig. 2 of the drawings. To facilitate this movement of the broiler grid it is provided at its under side with front and rear wheels or rollers 6 which are movable over the trackways or supports 2.

To provide for or accommodate the movement imparted to the lower burners the fuel to these burners is conducted to these burners through suitable flexible conduits 7.

The body below the broiler chamber is provided with a suitable housing or chamber designated as an entirety at E and on a front panel 8 of this housing are positioned handles 9 and 10 which afford individual control of the flow of fuel to the lower burners C.

The mechanism by which the two conduits 1 and the attached lower burners and broiler grid are elevated and lowered is disposed within the lower range housing or chamber E with the exception of the operating handle 11 which handle is conveniently positioned in front of the housing E for manual manipulation by the operator of the range.

Each of the conduits or flues 1 which convey away the products of combustion from the lower burners is provided with a downwardly extending arm 12 which terminates in the lower range chamber E. The inlets 13 to these flues are just above the burners and immediately below the grid. To each of the lower ends of the flue extension arms 12 is pivotally attached as at 14 an arm 15 which extends towards the front of the range and is pivotally connected to a suitable rod or bar 16 supported by and extending along the inner side of the range front wall. Intermediate their lengths the arms 12 have a second pivotal connection with the range front or front frame through the instrumentality of arms 17 one end each of which is pivotally connected to an arm 12 as at 18 while their other ends are pivotally supported on the range front frame as at 19.

To counterbalance the weight of the mechanical parts making up the grid and carrier, the flues and the lower burners we provide a pair of counterbalancing springs 20 one end of which is attached to an angle iron bar 21 which interconnects the lower ends of the two flue extension arms 12 while the opposite ends 22 of the springs are connected to the bar or rod 19 which is the pivotal support for the outer ends of the two arms 17.

From the description thus far given it will be seen that if a lifting force is imparted the lower broiler burners the food and utensil supporting grid can be raised and lowered in the broiler chamber or oven A and that the grid can be pulled outwardly from the oven whenever desired for inspection of the cooking operation.

The present invention pertains particularly to the arrangement for raising and lowering the grid and broiler burners and for holding them in any one of a plurality of desired set positions. This raising and lowering operation is accomplished by manually swinging the handle 11 to the right or to the left and will now be explained in detail, reference being made particularly to Figs. 2 to 4 of the drawings.

A horizontally disposed shaft 24 extends from front to rear of the chamber E being rotatably supported on the rear wall of that chamber as at 25 while its front end (Fig. 3 of the drawings) is rotatably supported in a suitable bearing or bushing formed in the lower end of the downwardly extending leg 26 of a bracket 27 mounted

on the front frame of the range. A collar 28 holds the shaft against outward end movement. The shaft extends through and beyond the leg 26 of its supporting bracket and on its outer end carries an arm or crank 29 which is keyed or pinned to the shaft for rotation therewith.

The lever 11 extends through the front wall of the range chamber E and is provided with an enlarged end or head F. This head is pivotally secured as at 30 to the shaft crank arm 29. At its upper end or edge the lever head is provided with a reduced inwardly extending portion which forms a lug or tooth 31 which is adapted to enter the space between the series of spaced teeth 32 formed on the outer face of the shaft supporting bracket arm 26 in a plane above the shaft.

The lug or tooth of the lever is normally held in locking engagement with the bracket arm teeth under the tension of a coil spring 33 which is interposed between the lower end or edge 34 of the lever head and the lowermost end 35 of the shaft lever 29.

Intermediate its length the shaft 24 is provided with an elongated downwardly extending crank arm 36 the lower end of which is secured as at 37 to the angle bar 21 which interconnects the arms 12.

The operation of the device is extremely simple. Normally the grid and its associated parts are locked against vertical movement by reason of the interlocking engagement of the lever lug or tooth 31 with the teeth on the shaft supporting bracket arm 26. When it is desired to raise or lower the grid the lever 11 is grasped and first swung or pulled outwardly and downwardly which will cause it to rock on its pivotal support 30 and bring about the disengagement of the lever lug or tooth 31 with the bracket teeth 32. The lever is then swung to the right or left in accordance with the direction it is desired to move the grid. Swinging or rotating the lever will rotate the shaft crank arm 29 which will in turn rotate the shaft 24 and rotation of the shaft will cause the lifting and lowering of the shaft crank arm 36 and by reason of its attachment to the arms 12 will raise or lower the grid and its associated parts. It will be understood that as the grid is raised and lowered it is supported and guided in this movement by the cross arms 15 and 17.

For the convenience of the operator a position indicating plate 38 may be placed at the front of the range behind the operating lever 11 and a set screw 39 which extends through the coil spring 33 may be provided as an adjustable means to limit and form a stop to the rocking movement of the operating lever.

The plate 38 need not necessarily be provided but when provided merely indicates the proper direction in which to swing the lever to move the grid in the desired direction. The actual position of the grid can be visually ascertained inasmuch as the front of the broiling oven or chamber is open. If however the broiling oven or chamber is closed and thus visual inspection of the exact positioning of the grid is impossible it might be desirable to place indicia on the plate 38 by which the exact positioning of the grid in respect to the upper broiler burner will be indicated.

The foregoing provides an extremely simple and efficient means for elevating a broiler grid and its associated parts and for locking said grid in any one of a desired plurality of positions in respect to the upper broiler burner.

The invention is to be limited only within the scope of the hereinafter appended claims.

We claim:

1. In a cooking appliance, a cooking chamber having a burner and a grid therein, a horizontally disposed and rotatably mounted shaft operatively connected with said grid for moving the same toward and away from the burner, a vertically extending handle provided with a head at its lower end, said handle head being pivotally connected to said shaft and adapted to oscillate the shaft when said handle is oscillated, a fixed lock plate, said handle head provided with means adapted to interlock with said lock plate, means normally holding said handle head and lock plate in interlocked relationship, and said handle being manually movable about its pivotal support to disengage its head with said lock plate.

2. A construction as defined in claim 1 wherein said lock plate has a vertically disposed face provided with a series of spaced projections, and said handle head means which interlocks with said lock plate is in the form of an extension movable over said plate projections and adapted to be selectively positioned in the space between any two of said plate projections.

3. In a cooking appliance, a cooking chamber having a grid and a burner therein, a rotatably mounted shaft horizontally disposed throughout its entire length and being operatively connected with said grid for moving the same toward and away from said burner when said shaft is oscillated, a bracket at one side of said shaft, said bracket provided with a plurality of lock element receiving means, a vertically extending handle for oscillating said shaft, said handle being provided with a head operatively engaging the shaft for imparting oscillatory movement to the shaft, said shaft at its side opposite said bracket provided with an extending crank arm, said handle head being pivotally mounted on said shaft crank arm, said head being further provided with a lock element adapted to selectively engage the lock receiving means of the bracket, and means acting to normally hold the lock element of the head in locked relationship with the lock receiving means of the bracket.

4. In a cooking appliance, a cooking chamber having a grid and a burner therein, means supporting said grid for vertical movement toward and away from said burner, a rotatably mounted shaft horizontally disposed throughout its entire length and being operatively connected with said grid for imparting said movement thereto, a bracket at one side of said shaft and provided with a bearing encircling and rotatably supporting one end of said shaft, said bracket having a vertically disposed face provided with a plurality of lock element receiving means, a vertically extending handle for oscillating said shaft, said handle being provided with a head, said shaft being provided with a crank arm, said handle head being pivotally connected to said crank arm to provide a connection which enables said handle to oscillate said shaft and to be rocked in respect to said shaft without imparting movement to the shaft, said handle head being provided with a lock element adapted to selectively engage the lock element receiving means of said bracket, and means normally holding the lock element of the handle head in interlocked relationship with said bracket.

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