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2,494,904

CONTROL UNIT FOR INDICATORS OF COOKING RANGES

Filed April 13, 1948

2 Sheets-Sheet 1

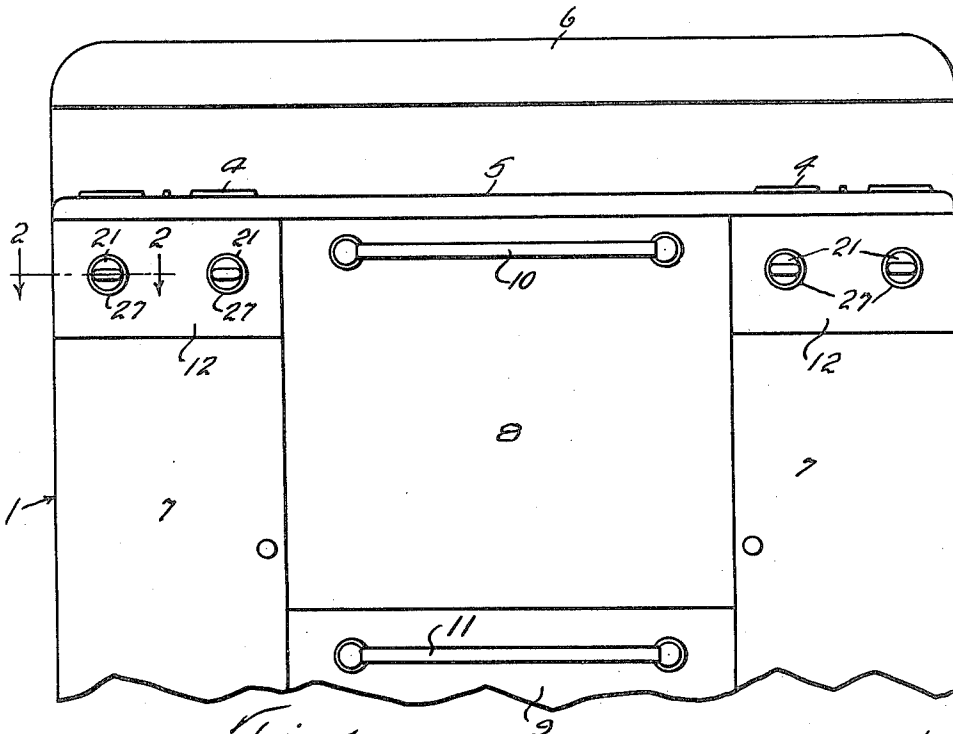


Fig. 1

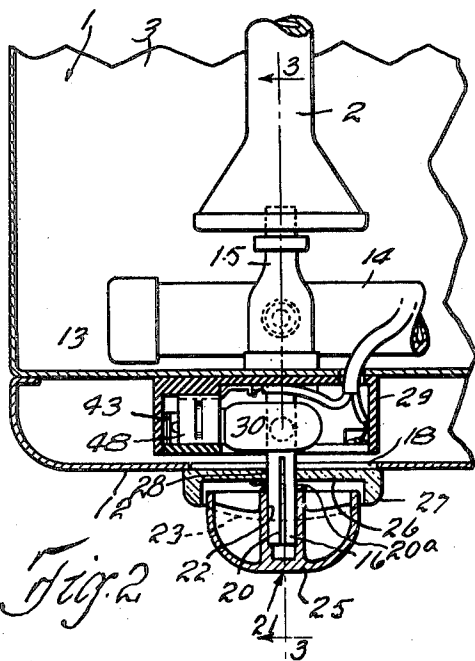


Fig. 2

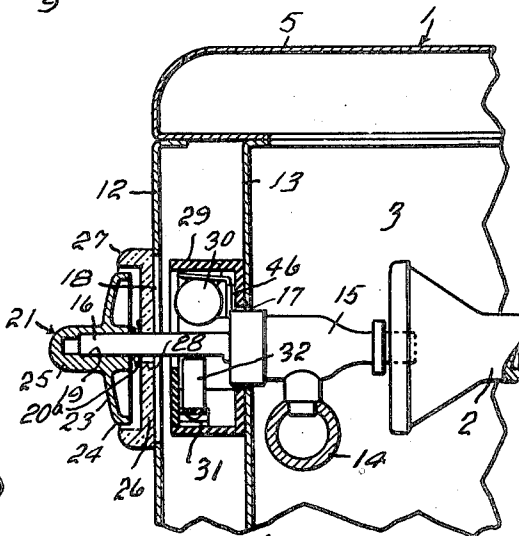


Fig. 3

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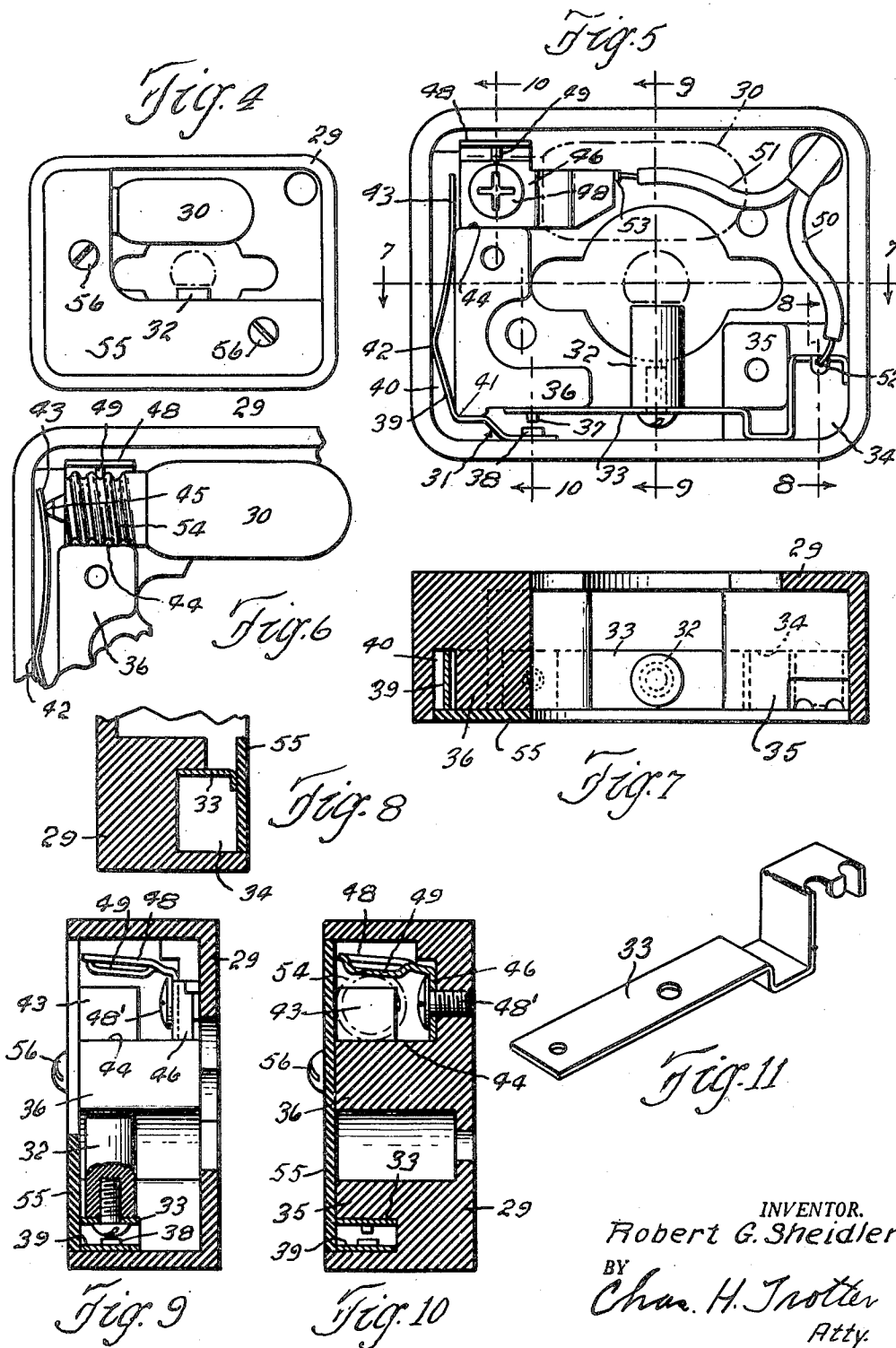
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,494,904

CONTROL UNIT FOR INDICATORS OF
COOKING RANGES

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4 Claims. (Cl. 177—311)

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This invention relates generally to indicating mechanisms for cooking ranges wherein an indicator is illuminated when a burner is turned on so that one can tell at a glance whether or not a burner is operating. Specifically the invention relates to the construction, arrangement and mounting of an electric bulb and switch mechanism by which the illumination of the indicator is controlled. It is particularly adapted for use with the indicating mechanism disclosed in the co-pending application of Charles M. Mayer, Ser. No. 20,678, filed April 13, 1948.

The invention contemplates the use of a ring or disc which is illuminated while a top burner of a cooking range is operating. The ring or disc is made of glass or other suitable translucent material and is preferably colored. It is supported by the valve stem through which the operation of a burner is controlled and is disposed between the front of the range and the operating handle secured to the end of the valve stem. A small electric bulb is mounted in position to project light against the disc or ring when the bulb is energized. The energization of the ring is controlled by a suitable switch which is operated by the rotation of the valve stem.

The principal object of the invention is to provide a simple and effective mechanism for controlling the illumination of an indicator from a valve stem through which the operation of a burner is controlled.

Other and more limited objects of the invention will be apparent from the following specification and the accompanying drawings forming a part thereof wherein:

Fig. 1 is a front elevation of a gas cooking range having my invention applied thereto;

Fig. 2 is an enlarged horizontal section taken on the line 2—2 of Fig. 1;

Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2;

Fig. 4 is a front elevation of the control unit;

Fig. 5 is an enlarged front elevation of the control unit with the cover plate and electric bulb removed so as to more clearly show the construction and arrangement of various parts;

Fig. 6 is a fragmentary front elevation of one corner of the control unit with the cover plate removed and the electric bulb in place;

Fig. 7 is a horizontal section taken on the line 7—7 of Fig. 5;

Fig. 8 is a fragmentary vertical section taken on the line 8—8 of Fig. 5;

Fig. 9 is a vertical section taken on the line 9—9 of Fig. 5;

Fig. 10 is a vertical section taken on the line 10—10 of Fig. 5; and

Fig. 11 is a perspective view of one of the switch elements.

Referring now to the drawings by reference characters, the numeral 1 indicates generally a gas cooking range of the divided top type wherein a pair of gas burners 2 are mounted one behind the other adjacent each side of the range. The burners 2 are located in top burner compartments 3 and have suitable utensil-supporting grates 4 disposed over them. The top 5 has a splasher plate 6 extending upwardly from the rear edge thereof. Beneath each of the burner compartments 3 is a storage compartment which is closed by a door 7. Between the burner and storage compartments is an oven and a broiler compartment which are closed by doors 8 and 9 respectively. The numerals 10 and 11 indicate handles by which the doors 8 and 9 are opened and closed. A pair of escutcheon plates 12 are removably secured to the front walls 13 of the top burner compartments 3 above the doors 7.

Gas is supplied to the burners 2 from a common manifold 14 through valves 15 which control the operation of the burners, there being provided a separate valve for each burner. The valves 15 are suitably secured to the manifold 14 which is held in place by suitable means, not shown. Each valve 15 has an operating stem 16 which extends forwardly from its valve through an opening 17 in the wall 13 and an enlarged opening 18 in the escutcheon plate 12. The outer end of each valve stem 16 has a flattened portion 19 and is slotted as indicated at 20. An operating handle generally indicated by the numeral 21, through which the valve stem 16 is rotated to open and close the valve 15 is frictionally secured to the outer end of each valve stem 16, so that it can be readily removed and replaced as desired. The flattened portions 19 of the valve stems 16 which cooperate with complementary flattened portions in sockets 22 of the handles 21 assure the rotation of the valve stems when the handles 21 are turned. The slots 20 enable the valve stems 16 to frictionally engage the walls of the sockets 22 with sufficient force to retain the handles 21 in place upon the valve stems 16 during normal operation. The handles 21 are molded from opaque plastic material and each comprises a dome-shaped body portion 23, having a cylindrical base 24, and an outwardly extending centrally disposed flat sided narrow section 25 by which the handle 21 is adapted to be grasped and turned.

A circular disc 26 having an outwardly ex-

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tending ring-shaped annular flange 27 and a central aperture 28 is loosely mounted upon each valve stem 16 between the handle 21 and the escutcheon plate 12, the valve stem 16 extending through the aperture 28. The discs 26 are made of colored glass or any other suitable translucent material, preferably colored, and the outside diameters thereof are just slightly greater than the diameters of the openings 18 through the escutcheon plates 12. The base 24 of each handle 21 is disposed within the ring-shaped annular flange 27 so that substantially all of the disc 26 is covered by the opaque handle 21 except the ring-shaped flange 27. The discs 26 are resiliently held against the escutcheon plates 12 by light helical springs 20^a which are disposed around the stems 16 between the discs 26 and handle 21.

Operatively associated with each valve stem 16 and disc 26 is a control unit through which the indicator disc 26 is illuminated when the associated burner is operating. The control units are all identical so that a detailed description of one unit will suffice for all of them. Each unit comprises a case 29 molded from insulating material in which is mounted a small electric bulb 30 and a switch generally indicated by the numeral 31. The case 29 is suitably mounted behind the escutcheon plate 12 in position for the bulb 30 to project light through the opening 18 against the disc 26. In the construction shown herein only the ring-shaped flange 27 will appear illuminated since the rest of the disc is covered by the opaque handle 21. The energization of the bulb 30 is controlled by the switch 31 which is opened and closed by the rotation of the valve stem 16 which extends through the case 29 as is clearly shown in Figs. 2 to 5. The flattened portion 19 of the valve stem 16 lies parallel to and closely adjacent the upper end of a button 32 which is secured to and extends upwardly from a flexible arm 33 constituting one of the switch elements. The arm 33 which is shaped as shown in Fig. 11 has one end thereof mounted in a recess 34 and is retained in position by a boss 35. The free end of the arm 33 extends under a boss 36 and has a contact 37 secured thereto. The contact 37 cooperates with a contact 38 on the switch element 39 which is mounted in a recess 40 beneath and to the rear of a boss 36. The element 39 which is spring material is held in position by its engagement with the corner of the boss 36 and the inner wall of the case 29, as indicated at 41 and 42, respectively. The vertical arm 43 of the element 39 extends up beyond the top 44 of the boss 36 in position to be engaged by the contact 45 of the bulb 30 as clearly shown in Fig. 6.

A bracket 46, which is secured to the rear wall of the case 29 above the boss 36 by a screw 48', has a forwardly and upwardly extending portion 48 from which is pressed a somewhat resilient tongue 49. Electrical conductors 50 and 51 are attached to the arm 33 and bracket 46 at 52 and 53, respectively.

The bulb 30 which is of standard construction, having the rear contact 45 and the metallic screw threaded base 54, is mounted within the case 29 as shown in Figs. 6 and 10, with the base 54 bearing against the top 44 of the boss 36 and the tongue 49 engaging one of the threads in the base 54. An L-shaped cover 55 which is held in place by screws 56, holds the bulb 30 and the switch elements 33 and 39 in place within the case 29.

When the valve stem 16 is turned by the handle 21 to render a burner 2 operative, it will depress

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the button 32 and arm 33 bringing the contacts 37 and 38 into engagement with each other. This will complete an electrical circuit from the conductor 50 through the arm 33, contacts 37 and 38, element 39, bulb 30, bracket 46 and conductor 51 thus energizing the bulb 30 which will project light against and illuminate the disc 26 showing that the associated burner is operating. When the burner is turned off the contacts 37 and 38 will be broken which will de-energize the bulb 30 indicating that the burner is not operating.

From the foregoing it will be seen that I have provided a control unit for range burner indicators which is very compact and can be readily installed in the small space between the front wall of a range and the escutcheon plate adjacent the valve handles. It will also be apparent that I have provided a mounting for an electric bulb which is so constructed and arranged that the bulb can be quickly and readily removed and replaced as necessary.

I have shown and described my invention as applied to a cooking range having gas burners. However, it is equally applicable to ranges having electrical heating elements. When applied to such ranges the valve stems 16 are used to operate suitable electric switches through which the energization of the heating elements is controlled.

It is to be understood that I am not restricted to the specific construction shown and described herein as various modifications can be made thereto within the scope of the appended claims.

Having thus described my invention, I claim:

1. In a cooking range having a translucent indicator which is adapted to be illuminated when a burner is operated, means operated by the rotation of a burner operating stem for controlling the illumination of said indicator, said means comprising; a casing through which a burner operating stem projects, an electric bulb having a screw threaded base mounted in said casing and adapted when energized to project light against said indicator, a bracket secured to the rear wall of said casing, a narrow resilient tongue secured to said bracket and extending forwardly and upwardly from said bracket over a boss in said casing and adapted to engage one of the screw threads in the base of said bulb, a removable cover which engages the base of said bulb and holds said base in engagement with said tongue and said boss, a switch in said casing operative to control the energization of said bulb, and cooperating means between said switch and said burner operating stem through which said switch is opened and closed by the rotation of said stem.

2. In a cooking range having a translucent indicator which is adapted to be illuminated when a burner is operated, means operated by the rotation of a burner operating stem for controlling the illumination of said indicator, said means comprising; a casing through which a burner operating stem projects, an electric bulb having a screw threaded base mounted in said casing and adapted when energized to project light against said indicator, a bracket secured to the rear wall of said casing, a narrow resilient tongue secured to said bracket and extending forwardly and upwardly from said bracket over a boss in said casing and adapted to engage one of the screw threads in the base of said bulb, a removable cover which engages the base of said bulb and holds said base in engagement with said tongue and said boss, a switch in said casing operative to control the energization of said bulb, said

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switch including an element having a resilient arm engaging the rear contact on said bulb, and cooperating means between said switch and said burner operating stem through said switch which is opened and closed by the rotation of said stem.

3. In a cooking range having a translucent indicator which is adapted to be illuminated when a burner is operated, means operated by the rotation of a burner operating stem for controlling the illumination of said indicator, said means comprising; a casing through which a burner operating stem projects, an electric bulb having a screw threaded base mounted in said casing and adapted when energized to project light against said indicator, a bracket secured to the rear wall of said casing, a terminal on said bracket to which one side of an electric circuit is connected, a narrow resilient tongue secured to said bracket and extending forwardly and upwardly from said bracket over a boss in said casing and adapted to engage one of the screw threads in the base of said bulb, a removable cover which engages the base of said bulb and holds said base in engagement with said tongue and said boss, a switch in said casing operative to control the energization of said bulb, said switch including two elements removably mounted in said casing, one of said elements having a vertically disposed resilient arm engaging the rear contact on said bulb and a horizontally disposed arm having a contact thereon, the other of said elements having a horizontally disposed resilient arm, a contact on the free end of said horizontally disposed resilient arm in alignment with the contact on the first mentioned element, a terminal on the other end of said other element to which the other side of an electric circuit is connected, an insulating button secured to and projecting upwardly from said horizontally disposed resilient arm and adapted to be depressed by the rotation of said burner operating stem whereby said aligned contacts are brought into engagement to establish an electric circuit through said bulb.

4. In a cooking range having a translucent indicator which is adapted to be illuminated when a burner is operated, means operated by the rotation of a burner operating stem for controlling the illumination of said indicator, said means

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comprising; a casing through which a burner operating stem projects, an electric bulb having a screw threaded base mounted in said casing and adapted when energized to project light against said indicator, a bracket secured to the rear wall of said casing, a terminal on said bracket to which one side of an electric circuit is connected, a narrow resilient tongue secured to said bracket and extending forwardly and upwardly from said bracket over a boss in said casing and adapted to engage one of the screw threads in the base of said bulb, a removable cover which engages the base of said bulb and holds said base in engagement with said tongue and said boss, a switch in said casing operative to control the energization of said bulb, said switch including two elements removably mounted in said casing, one of said elements having a vertically disposed resilient arm engaging the rear contact on said bulb and a horizontally disposed arm having a contact thereon, the other of said elements having a horizontally disposed resilient arm, a contact on the free end of said horizontally disposed resilient arm in alignment with the contact on the first mentioned element, a terminal on the other end of said other element to which the other side of an electric circuit is connected, an insulating button disposed above said horizontally disposed resilient arm and adapted to be depressed by the rotation of said burner operating stem whereby said aligned contacts are brought into engagement to establish an electric circuit through said bulb.

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The following references are of record in the file of this patent:

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