July 4, 1939. F. H. PETERS 2,165,003

DOMESTIC APPLIANCE

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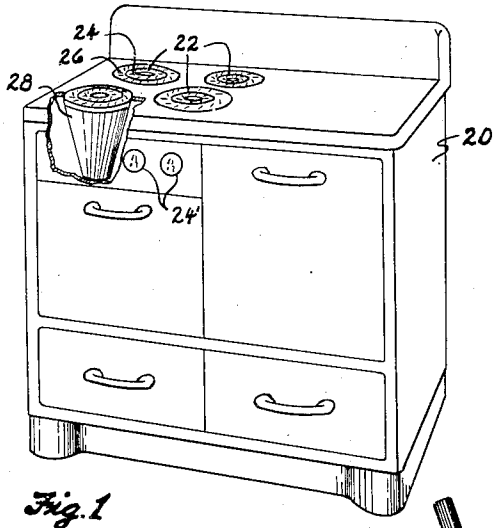


Fig. 1

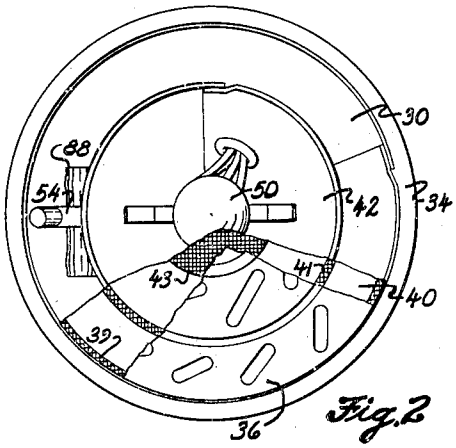


Fig. 2

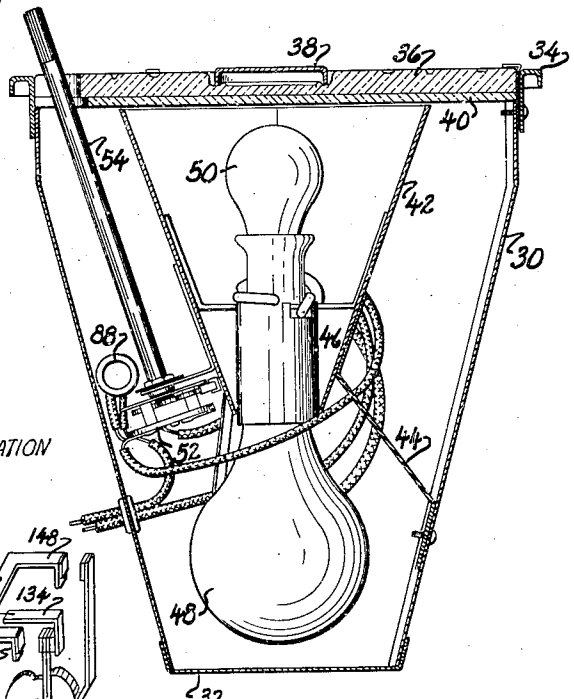


Fig. 3

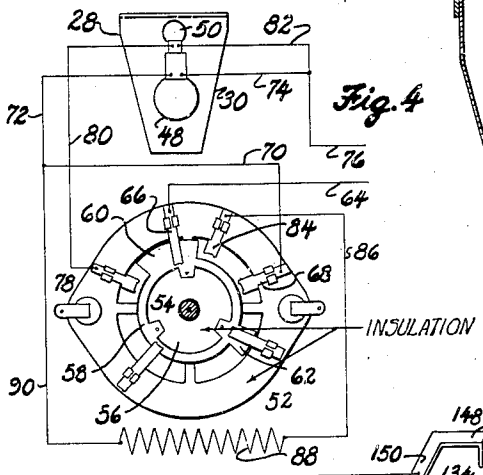


Fig. 4

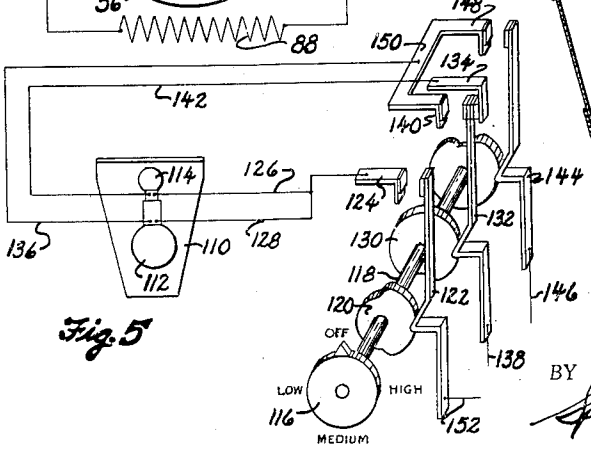


Fig. 5

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DOMESTIC APPLIANCE

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15 Claims. (Cl. 35—49)

This invention relates to domestic appliances and more particularly to demonstrators and advertising devices for stoves and ranges.

The advertising and demonstration of an electrical range involves the problem of properly displaying the various heating speeds which can be obtained from the surface heaters of the stove or unit. In many types of ranges, the elements are not heated sufficiently to give off any appreciable light waves visible in places having good illumination. This makes the demonstration and sale of such electric ranges rather difficult since the heat is not visible and since demonstration of the heating of the range by the feel of the heat rays emitted from the burner is not nearly so satisfactory and convincing as something which can be seen by the eye.

It is, therefore, an object of my invention to provide a device which will demonstrate by means of varying degrees of light the approximate heating effect which may be obtained from the heater of a stove or electric range.

It is a further object of my invention to provide a device simulating by the use of a lighting arrangement the heating arrangement for different rates of heating in an electric range.

It is a further object of my invention to provide a demonstrating means which will simulate an electric heater having a plurality of concentric heating rings, any one or all of which may be selectively heated by the use of a selected switch means.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred form of the present invention is clearly shown.

In the drawing:

Fig. 1 is a view of an electric range partly in section showing one form of my invention;

Fig. 2 is a top view of a portion of the device shown in Fig. 1;

Fig. 3 is a vertical sectional view of the device shown in Figs. 1 and 2;

Fig. 4 is a wiring diagram of one form of the device; and

Fig. 5 is a wiring diagram of another form of the device.

Briefly, I have shown an electric range provided with a cone-shaped illuminating member made to replace one of the heating units of the range for demonstrating and advertising purposes. This illuminating device has a translucent glass upper plate shaped to resemble the upper surface of an ordinary heating unit. It is provided with a lighting means comprising two different lights, the one which will light up the central portion of the glass plate, while the other will illuminate the outer edge of the glass plate. A switching means is provided for lighting or illuminating the glass plate through the use of two light bulbs in a manner corresponding to the heat generated in the surface heaters or cooking elements of a range.

Referring now more particularly to the drawing, there is shown an electric range 20 having heating units 22 which are controlled by a four-position switch means 24'.

There are normally four of such heaters provided in a range and three are shown in which there is an inner heating ring 24 and an outer heating ring 26. These heating rings are concentrically positioned and in order to give the greatest heating effect, both rings are energized at their full voltage rating. In order to obtain intermediate heating position, only the inner heater is employed at full voltage, while the outer heater 26 is deenergized. In order to get the slowest heating speed, the outer ring 26 only is energized and this at one-half its rated voltage. This provides three heating speeds in a very advantageous arrangement.

It is, however, rather difficult to demonstrate these heating speeds, since the heat rays are not visible in places where there is good illumination. In order to provide a visible means which will illustrate this heating arrangement, I have replaced for demonstrating and advertising purposes only the left front heater with an illuminating device generally designated by the reference character 28 which will simulate in the form of light the heating effect of the elements 22 and their different heating arrangements. In this device 28, I have provided a cone-shaped outer shell 30 provided with a bottom 32 and chrome-plated rim member 34 which resembles the rim member normally provided on the heater 22. Within the rim member, there is provided a glass plate 36 having convolutions on its surface which resemble the inner and outer rings 24 and 26 of the heating elements 22 and it is further provided with a name plate 38 in the center of the glass plate just as the heating elements 22. The glass plate is preferably frosted upon its lower surface and beneath this glass plate is another plate 40 of red glass or glass which has been given a red coating, together with concentric black line circles 39 and 41 and a black center 43 to indicate the edges of the rings 24 and 26 so that the light issuing from the glass plate will have the natural red

appearance which would ordinarily be expected from the electrical heating elements 22. Beneath the plate 40 is a smaller cone-shaped metal member 42 concentrically mounted within the larger cone-shaped member 30. The upper rim of this cone-shaped member 42 extends to one of the black line circles 41 provided upon the red glass plate 40 which is relied upon to simulate the device between the inner ring 24 and the outer ring 26 of the heating elements 22. This cone-shaped member 42 is provided with three brackets 44 which provide a connection between it and the outer cone-shaped member 30. These brackets are provided in order to support the inner cone-shaped member 42 from the outer cone-shaped shell 30. This inner cone-shaped member 42 in turn supports a double socket member 46 providing a socket of standard size for a rather large light bulb 48 which extends downwardly from the mouth of the small cone 42 and another much smaller socket provided for a small light bulb 50. The small light bulb 50 is located entirely within the cone 42 and illuminates only the central portion of the glass plates 36 and 40 so that it provides the red illumination for simulating the heating of the inner heating ring 24 of the heating elements 22. The large light bulb 48 is provided for illuminating the portion of the glass plates 36 and 40 between the inner cone-shaped member 30 so as to simulate the heating of the outer ring member 26 of the heating elements 22. In the 110 volt form I have provided a special switch generally designated by the reference character 52 and actuated by the rod 54 for controlling the supply of energy to the two bulbs 48 and 50 in such a manner as to simulate the heating of the heating elements 22 in high, low and intermediate positions.

Referring now more particularly to the wiring diagram shown in Fig. 4, there is shown the rotary switch mechanism 52 having the central operating rod 54 surrounded by an insulating disc 56 which in turn is surrounded by the metal switch member 58 which is provided with a wide projecting portion 60 and a narrow projecting portion 62 located at about 120° from the wide projecting portion 60. In this switch, one of the supply conductors 64 is connected to a stationary conductor 66 which is adapted to make sliding metal to metal contact with the metal conductor 58 at all times. A second flexible contact member 68 is adapted to make the contact with the projecting sector portion 62 of the conductor member 58 when the operating rod 54 is turned in a counter-clockwise direction as shown in Fig. 4. This flexible conductor 68 is connected by an ordinary electrical conductor 70 and another conductor 72 to the socket for the bulb 48 which is also connected by a third conductor 74 to another conductor 76 connecting to the power supply. When the operating rod and the conductor member 58 are in the position in which the sector portion 62 is in contact with the flexible contact 68, the wide projecting sector portion 60 is in contact with another flexible contactor 78 which is connected by an ordinary electrical conductor 80 to the socket for the small light bulb 50 which is also connected by a conductor 82 to the supply conductor 76. When the switch is in that position, both lights shine with their greatest brillance, since full voltage is being supplied to both lights.

When the operating rod is turned a short distance further in the counter-clockwise direction, the projecting sector portion 62 is then located between the flexible contactor 68 and the nearest flexible contactor 84 in a clockwise direction, while the wide contacting projecting portion 60 remains in contact with the flexible contact 78. When in this position, the electric current flows through the conductor 64 to the contactor 66 through the projecting portion 60, member 58 to the contactor 78, thence through the conductor 80 to the light bulb 50 and thence through the conductors 82 and 76 to the power source. This illuminates the light bulb 50 without energizing the light bulb 48, since the projecting sector portion 62 is not in contact with either of the contactors 68 or 84.

Upon further clockwise rotation of the operating rod 54 and its contacting member 58, the projecting sector portion 62 moves into contact with the flexible contactor 84 which is connected by an ordinary electrical conductor 86 to an electrical resistance 88 which in turn is connected by an electrical conductor 90 through the conductor 72 to a socket of the large light bulb 48. The connecting of the large light bulb 48 in series with the resistance 88 reduces the current through the light bulb 48 to an amount between one-half and one-third the full current so that the light emitted is reduced in substantially the same measure as the heating effect is reduced in the actual heating element provided in the range. Thus, by this arrangement, with a 110 volt system, I can simulate the three heating speeds provided upon an electric range of this ype.

The wiring diagram found in Fig. 5 discloses a similar cone-shaped illuminating means 110 similar in size and shape and appearance to the illuminating element 28 as shown in Fig. 3. It differs from the illuminating element shown in Fig. 3 only in that the switch 52 and its operating rod 54 are eliminated and the large light bulb 112 is for 220 volts rather than 210 volts. The small light bulb 114 is a small 110 volt bulb like the light bulb 50 shown in Fig. 3. This illuminating device 110 is connected to the ordinary range switch which supplies three-wire 110 and 220 volt electric energy commonly used with electric ranges. This switch has an operating knob 116, an operating shaft 118 provided with a cam 120 for operating a movable contact 122 adapted to make contact with a stationary contact 124 which connects by means of the conductors 126 and 128 to light bulbs 114 and 112 of the illuminating device 110. The rod 118 is provided with another cam 130 for operating a movable contact 132 which is adapted to make contact with a stationary contact 134 connected by the electrical conductor 136 to the large light bulb 112, and this movable contact 132 which is connected to the middle or neutral wire 138 of the power source is also adapted to make contact with a stationary contact 140 which is connected by an electrical conductor 142 to a small light bulb 114. A return flexible contact 144 is connected to one of the outside wires 146 of the power source and is adapted to make contact with a stationary contact 148 which is formed as a part of a conductor member 150 from which the stationary contact 140 is also formed. By this arrangement, when the range switch knob 116 is turned in a counter-clockwise direction to the lower position, the contactor 132 will make contact with the stationary contact 140 while the movable contact 122 will make contact with the stationary contact 124 to permit current to flow from the second outside wire 152 of the three wire supply source so that current will flow from the conductor 152 through

the movable contact 122 to the stationary contact 124, thence through the conductor 128, the large light bulb 112 and the conductor 136 to the stationary contact 140 and thence through the movable contact 132 to the middle wire 138. This supplies the large light bulb 112 with 110 volt current which is one-half its normal voltage rating and reduces the current flowing through the large bulb by one-fourth so that its illuminating effect is reduced to at least one-fourth its full illuminating output. This effectively illustrates the extremely low heat which can be obtained in this position.

When the range switch control knob 116 is turned to its medium position, current flows from the conductor 152 through the movable contactor 122 to the stationary contact 124, thence through the conductor 126, the small light bulb 114, the conductor 142 to the stationary contact 134, thence through the movable contact 132 to the neutral wire 138 of the power source through which circuit the small light bulb 114 is alone supplied with 110 volt current which is its full voltage rating to cause it to give its full lighting effect as does the inner heating element 24 in medium heat position.

When the range switch knob 116 is turned to high position, current flows from the conductor 52 through the movable contactor 122 and the stationary contact 124 through the conductor 128 to the socket of the large light bulb and at the same time flows through the conductor 126 to the small light bulb 114. From the large light bulb 112, the current is conducted through the conductor 136 to the conductor 150 and the stationary contact 148 and thence through the movable contact 144 to the outside wire 146 of the three-wire supply circuit so that the large light bulb 112 is now supplied with 220 volt electric energy. The small light bulb is connected through the conductor 142 to the stationary contact 134 and through the movable contact 132 to the neutral wire 138 of the power source so that the small bulb 114 is provided with its full 110 volt voltage to cause it to provide full illumination which simulates the full heating of the inner ring 24, while the large light bulb 112 provides full illumination at 220 volts to simulate the full heating of the outer ring 26 in the high heating position.

While the form of embodiment of the invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. An advertising device for stoves and ranges comprising translucent means for simulating a heating element formed of a plurality of concentric ring-shaped heating portions, a first illuminating means for illuminating a ring-shaped section of the translucent means, a second illuminating means for illuminating another ring-shaped section of the translucent means, and switch means for energizing either or both of said illuminating means as desired to simulate corresponding heating arrangements.

2. An advertising device for ranges and stoves comprising a translucent element simulating one of the heating elements, a first illuminating means for illuminating a portion of the translucent element, a second illuminating means for illuminating another portion of the translucent element, and control means for controlling said illuminating means to provide different amounts and arrangements of light to simulate different amounts and arrangements of heating.

3. An advertising device for ranges and stoves comprising a translucent element simulating one of the heating elements, a first illuminating means for illuminating a portion of the translucent element, a second illuminating means for illuminating another portion of the translucent element, and multi-position switch means for energizing either or both of said illuminating means as desired.

4. An advertising device for stoves and ranges comprising means including illuminating means for simulating a heating element, and means for controlling the illuminating means to cause changes in the light emitted to simulate changes in the heat emitted by the heating element in the operation of actual stoves and ranges.

5. An advertising device for stoves and ranges comprising means including a plurality of illuminating means for simulating a heating element, and selective control means for selectively energizing any one or more than one of the plurality of illuminating means.

6. An advertising device for stoves and ranges comprising means including a plurality of illuminating means for simulating a heating element, an electric circuit for supplying said plurality of illuminating means with energy, and selective switch means for said electric circuit to selectively supply any one or more of said illuminating means as desired.

7. An advertising device for stoves and ranges comprising means including a plurality of illuminating means for simulating a heating element, an electric circuit for supplying said plurality of illuminating means with electric energy at different voltages, and selective switch means for selectively controlling the transmission of energy at different voltages to said illuminating means.

8. A device comprising a shell having the appearance of a stove, said shell being provided with translucent means simulating a heating element of such a stove, illuminating means for illuminating said translucent means to simulate the heating of the heating element, and control means for controlling said illuminating means to provide different lighting effects simulating different rates of heating.

9. A device comprising a shell having the appearance of a stove, said shell being provided with translucent means simulating a heating element of such a stove, said translucent means being provided with means for simulating the concentric ring-shaped heating portions of the heating element, a first illuminating means for illuminating the ring-shaped section of the translucent means, the second illuminating means for illuminating another ring-shaped section of the translucent means, and switch means for energizing either or both of said illuminating means as desired to simulate corresponding heating arrangements.

10. A device comprising a shell having the appearance of a stove, said shell being provided with translucent means simulating a heating element of such a stove, a first illuminating means for illuminating a portion of the translucent means, a second illuminating means for illuminating another portion of said translucent means, and control means for controlling said illuminating means to provide different amounts and arrangements of light to simulate different amounts and arrangements of heating.

11. A device comprising a shell having the appearance of a stove, said shell being provided with

a plurality of illuminating means for simulating a heating element of such a stove, an electric circuit for supplying said plurality of illuminating means with electric energy at different voltages, and selective switch means for selectively controlling the transmission of energy at different voltages to said illuminating means.

12. A device comprising a shell having the appearance of a stove and having an upper flat portion resembling the cooking top of a stove, said upper flat portion being provided with translucent means having the shape and location of a surface heater normally provided for such a stove, illuminating means located beneath said translucent means for illuminating said translucent means for simulating the heating of a surface heater, and control means for controlling said illuminating means to provide different lighting effects to simulate different rates of heating.

13. A device comprising a shell having the appearance of a stove and having an upper flat portion resembling the cooking top of a stove, said upper flat portion being provided with translucent means having the shape and location of a surface heater normally provided for such a stove, said translucent means being provided with means for simulating the plurality of concentric ring-shaped heating portions of such a surface heater, a first illuminating means for illuminating one ring-shaped section of the translucent means, a second illuminating means for illuminating a second ring-shaped section of the translucent means, and switch means for energizing either or both of said illuminating means as desired to simulate corresponding heating arrangements.

14. A device comprising a shell having the appearance of a stove and having an upper flat portion resembling the cooking top of a stove, said upper flat portion being provided with translucent means having the shape and location of a surface heater normally provided for such a stove, a first illuminating means for illuminating one portion of the translucent means, a second illuminating means for illuminating a second portion of the translucent means, and control means for controlling said illuminating means to provide different amounts and different arrangements of light to simulate different amounts and arrangements of the heating.

15. A device comprising a shell having the appearance of a stove and having an upper flat portion resembling the cooking top of a stove, said upper flat portion being provided with a plurality of illuminating means for simulating a surface heater normally provided for such a stove, an electric circuit for supplying said plurality of illuminating means with electric energy at different voltages, and selective switch means for selectively controlling the transmission of energy at different voltages to said illuminating means.

FLOYD H. PETERS.