Sept. 2, 1952 H. E. ACKEMANN 2,609,476

ILLUMINATED BACKSPLASHER FOR ELECTRIC RANGES

Filed Aug. 19, 1949 2 SHEETS—SHEET 1

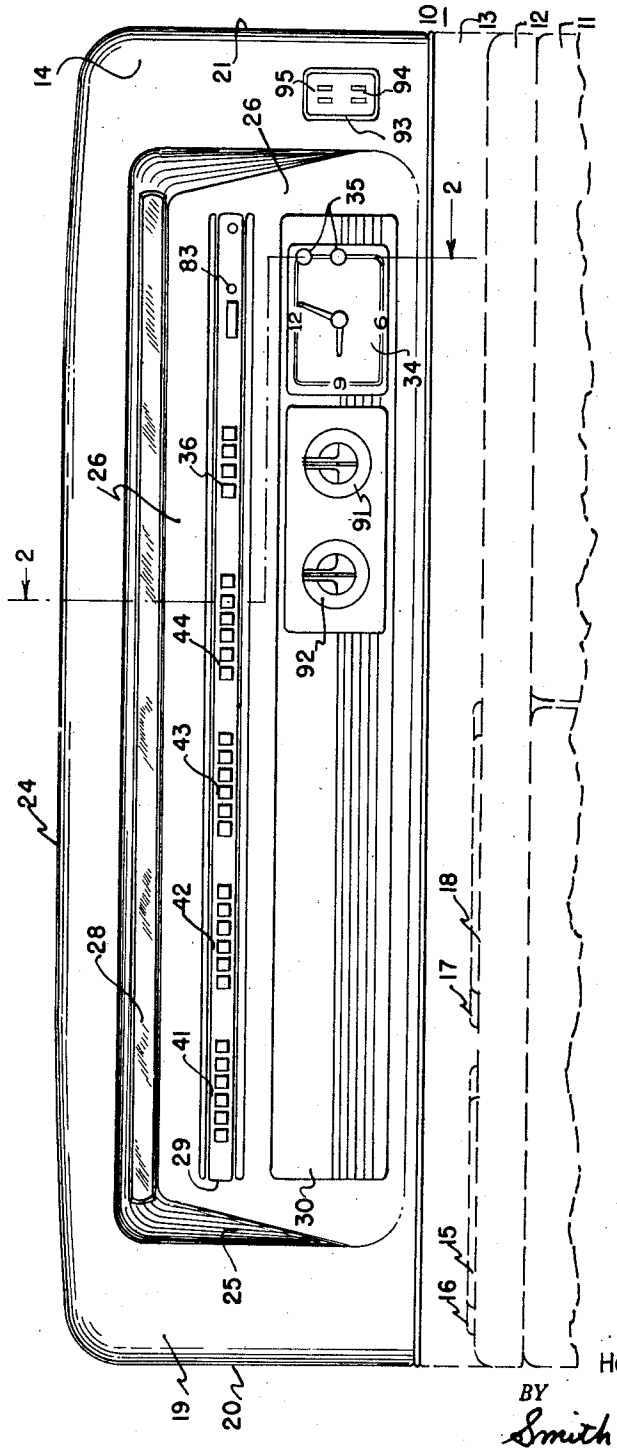



FIG. 1

INVENTOR.
Harold E. Ackemann

BY
Smith, Olsen & Baird
Attys.

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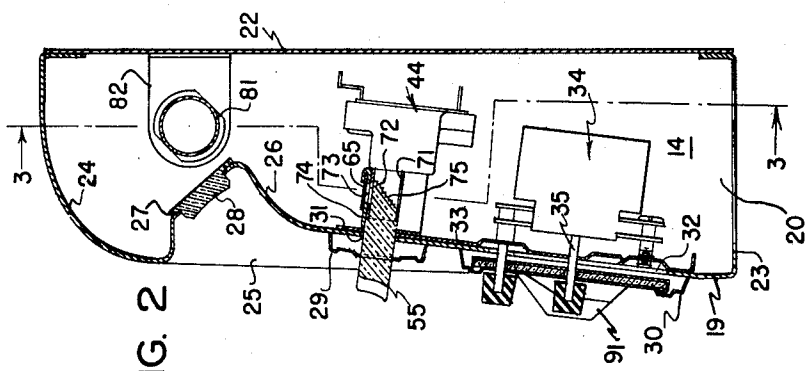



FIG. 2

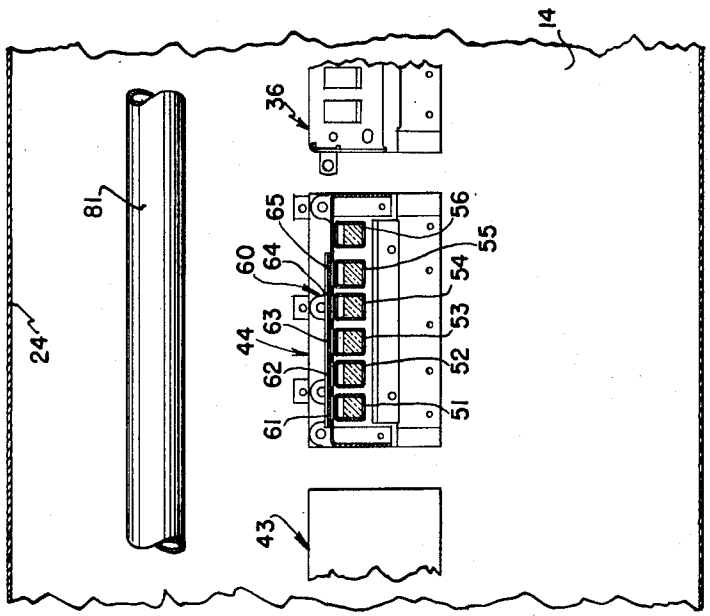



FIG. 3

*INVENTOR.*
Harold E. Ackemann

*BY*
Smith, Olsen & Baird
Attys.

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# UNITED STATES PATENT OFFICE

2,609,476

## ILLUMINATED BACKSPLASHER FOR ELECTRIC RANGES

Harold E. Ackemann, Elgin, Ill., assignor to Hotpoint Inc., a corporation of New York

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2 Claims. (Cl. 219—37)

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The present invention relates to electric ranges, and more particularly to illuminated backsplashers carried by the cooking tops of such electric ranges.

In U. S. Patent No. 2,431,904, granted on December 2, 1947, to John L. Andrews, there is disclosed an electric range provided with a cooking top carrying a hollow backsplasher adjacent to the rear thereof. In this range the cooking top supports a number of surface heating units; and the backsplasher supports a corresponding number of control switches for the individual surface heating units. Each of these control switches is of the pushbutton type including an off pushbutton and five individual control pushbuttons corresponding to the respective five heating rates of the associated surface heating unit. The off pushbuttons and the five control pushbuttons in each of the control switches are selectively operative correspondingly to actuate the control switch to govern the corresponding heating connections between the associated surface heating unit and a common source of current supply. Also, each control switch is provided with an individual illuminating arrangement, including a hood and an associated lamp, for the purpose of selectively illuminating an operated one of the five control pushbuttons to serve as a signal indicating the operated position thereof, each of the pushbuttons being formed of a transparent plastic material accommodating the transmission of light therethrough from the lamp mentioned.

In U. S. Patent No. 2,437,555, granted on March 9, 1948, to Gregory L. Rees, there is disclosed a modified form of the Andrews pushbutton switch incorporating a color card in the illuminating arrangement thereof. Specifically, the color card comprises blue, green, purple, yellow, and red panes respectively associated with the five control pushbuttons, the colors noted sequentially indicating increasing heating rates of the associated surface heating unit resulting from operation of the corresponding control pushbuttons. In this arrangement the different colors serve as a key to the corresponding heating rates of the associated surface heating unit resulting from operation of the corresponding control pushbuttons; and, as noted, the red and blue colors respectively indicate the highest and the lowest heating rates, and the other colors respectively indicate the various intermediate and graduated heating rates.

While an electric range of the construction noted incorporating the Rees pushbutton switches constitutes a refined and efficient appliance, it is

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more expensive to manufacture than is desirable preventing ready incorporation of this color cooking control arrangement in the more moderately priced electric ranges.

Accordingly, it is a general object of the present invention to provide in an electric range, a backsplasher carried by the cooking top thereof that incorporates an improved and economical arrangement for illuminating the backsplasher and the cooking top and for illuminating a plurality of pushbutton control switches mounted in the backsplasher and selectively operative from the front thereof in order to obtain different heating effects from the corresponding different heating units incorporated in the electric range.

Another object of the invention is to provide in an electric range, an improved illuminating arrangement of the character noted that correlates the operation of the individual pushbuttons in the different pushbutton control switches with the corresponding switching functions thereof in conjunction with the corresponding different heating units incorporated in the electric range so as to obtain a color cooking control.

A further object of the invention is to provide in an electric range, an improved arrangement of the character described that requires only a single elongated electric lamp to accomplish all of the illuminating functions noted.

Further features of the invention pertain to the particular arrangement of the elements of the electric range, whereby the above-outlined and additional operating features thereof are attained.

The invention, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the following specification taken in connection with the accompanying drawings, in which Figure 1 is a fragmentary front elevational view of the upper portion of an electric range, illustrating the backsplasher carried by the cooking top adjacent to the rear thereof, and embodying the present invention; Fig. 2 is an enlarged vertical sectional view of the backsplasher, taken in the direction of the arrows along the line 2—2 in Fig. 1; and Fig. 3 is an enlarged fragmentary vertical sectional view of the backsplasher, taken in the direction of the arrows along the line 3—3 in Fig. 2.

Referring now to the drawings, the electric range 10 there illustrated, and embodying the features of the present invention, comprises an upstanding frame or body 11 provided with a substantially horizontally disposed cooking top 12 terminating adjacent to the rear thereof in an

upwardly directed pedestal 13 carrying an upwardly extending hollow backsplasher 14. The body 11 comprises an oven, not shown, disposed in the right-hand upper portion thereof below the cooking top 12, and a storage space, not shown, disposed in the left-hand upper portion thereof below the cooking top 12. Also the cooking top 12 has a plurality of openings formed in the left-hand surface thereof in which corresponding surface heating units are removably secured in place. Specifically, the left-hand surface of the cooking top 12 has four openings formed therein arranged both front and rear and left and right, and removably carrying corresponding surface heating units. For convenience, the four surface heating units will be referred to hereinafter as the left front, the right front, the left rear and the right rear surface heating units. In passing it is noted that the left rear surface heating unit may also be lowered below the cooking top 12 in order to provide a deep-well cooking unit. In Fig. 1 the removable left front and left rear surface heating units are respectively indicated at 15 and 16, and the removable right rear and right front surface heating units are respectively indicated at 17 and 18. Also, the oven, not shown, comprises the usual bake and broil heating elements, not shown.

The backsplasher 14 is of hollow construction as previously noted including a front wall 19 that projects upwardly and slightly rearwardly, as well as upwardly extending side walls 20 and 21, a substantially vertically disposed rear wall 22, a substantially horizontally disposed bottom wall 23, and a rearwardly and upwardly curved top wall 24. The backsplasher 14 may be of one-piece pressed steel construction and constitutes an instrument and heating control equipment panel, as well as an illumination support, as described more fully hereinafter. A laterally extending depression 25 is formed in the front wall 19 so that a panel portion 26 of the front wall 19 disposed within the depression 25 projects first upwardly and rearwardly and then upwardly and forwardly. A laterally extending window 27 is formed in the upper portion of the panel 26 somewhat below the top wall 24 and carries a laterally extending pane 28 formed of clear glass, or the like, so that light from the interior of the backsplasher 14 may be projected through the pane 28 arranged in the window 27 for the purpose of illuminating the panel 26 and the cooking top 12, as explained more fully hereinafter. A laterally extending trim element 29 is suitably secured to the front surface of the panel 26 below the window 27, and a laterally extending trim element 30 is suitably secured to the front surface of the panel 26 below the trim element 29. A laterally extending opening or a series of laterally extending opening sections 31 are formed in the upper portion of the panel 26 behind the upper trim element 29; and a laterally extending opening or a series of laterally extending opening sections 32 are formed in the lower portion of the panel 26 behind the lower trim element 30. A supporting bracket 33 is arranged within the hollow backsplasher 14 and suitably secured to the rear surface of the panel 26.

A clock-controlled timing mechanism 34 is arranged within the hollow backsplasher 14 and is suitably supported by the bracket 33 and is provided with control facilities 35 projecting through the opening 32 and trimmed by the right-hand end of the lower trim element 30. The timing mechanism 34 is arranged to control the opening and the closing of the electric circuits of the heating elements of the oven in accordance with predetermined settable time. An oven control switch 36 of the pushbutton type is arranged within the hollow backsplasher 14 and is suitably supported by the bracket 33 and is provided with four individual pushbuttons projecting through the opening 31 and trimmed by the right-hand end of the upper trim element 29. The individual pushbuttons of the oven control switch 36 comprise a broil pushbutton, an adjacent timed bake pushbutton, an adjacent bake pushbutton, and an adjacent off pushbutton; these pushbuttons being arranged from the left toward the right in the order named. In the operation of the pushbutton switch 36 the off pushbutton is operative to disconnect the heating elements of the oven, not shown, from an associated source of current supply, not shown; while the bake, timed bake and broil pushbuttons are selectively operative to effect corresponding heating connections between the heating elements of the oven and the source of current supply mentioned. Four individual surface heating unit control switches 41, 42, 43 and 44 are arranged within the hollow backsplasher 14 to the left of the oven control pushbutton switch 36 and substantially in lateral alignment therewith. The four pushbutton switches 41, 42, 43 and 44 are suitably supported upon the bracket 33 and are each provided with six individual pushbuttons projecting through the opening 31 and trimmed by the left-hand end and the central portion of the upper trim element 29. The pushbutton switches 41, 42, 43 and 44 respectively correspond to the surface heating units 15, 16, 17 and 18; and in each of these pushbutton switches the individual pushbuttons comprise a high pushbutton, a medium-high pushbutton, a medium pushbutton, a low pushbutton, a warm pushbutton and an off pushbutton; these pushbuttons being arranged from the left toward the right in the order named. In the operation of the pushbutton switch 41, for example, the off pushbutton is operative to disconnect the individually associated left front surface heating unit 15 from the associated source of current supply, not shown; while the high, medium-high, medium, low and warm pushbuttons are selectively operative to effect the five corresponding individual heating rate connections between the individually associated left front surface heating unit 15 and the associated source of current supply mentioned.

Each of the five pushbutton switches 36, 41, 42, 43 and 44 is of the basic construction disclosed in the Andrews patent noted and is provided with an individually associated color card of the general character of that disclosed in the Rees patent noted, except that it is simplified by the omission of the individual illuminating arrangement therefor. As best shown in Figs. 2 and 3, the pushbutton switch 44 individual to the right front surface heating unit 18 comprises the six individual pushbuttons 51 to 56, inclusive, each formed of a suitable light transmitting plastic material; and the individual color card 60 is associated with the pushbutton switch 44 and comprises the five individual light color transmitting panes 61 to 65, inclusive, respectively associated with the corresponding individual pushbuttons 51 to 55, inclusive. In the color card 60 the pane 61 is red, the pane 62 is yellow, the pane 63 is purple, the pane 64 is green and the pane 65 is blue. Also, in the color card 60 a clear pane, not shown, may be associated with the off pushbutton 56, if desired. The push-

button switch 44 comprises a shutter arrangement so that the operation of any one of the five control pushbuttons 51 to 55, inclusive, aligns the inner end thereof to receive light transmitted through the associated pane 61 to 65, inclusive. For example, when the warm pushbutton 55 is operated the shutter arrangement causes the transmission of light through the associated pane 65 and thence through the warm pushbutton 55 to the exterior adjacent to the front of the backsplasher 14. The shutter arrangement mentioned includes a ferrule 71 carried by the inner end of the warm pushbutton 55 and provided with an opening 72 therein that cooperates with an associated opening 73 formed in an element 74 of the housing of the switch 44. Also, the inner end of the warm pushbutton 55 is provided with suitable serrations indicated at 75 for the purpose of reflecting forwardly therethrough the light that is received through the pane 65 and the aligned openings 72 and 73 when the warm pushbutton 55 occupies its operated position. The details of the shutter arrangement are not disclosed in the interests of brevity, since they are completely disclosed in the Rees patent mentioned.

As previously noted, the pushbutton switch 36 that is provided for the purpose of controlling the circuits of the heating elements associated with the oven, not shown, is also of the basic construction described. However, in this arrangement, the color card, not shown, associated therewith comprises three light color transmitting panes respectively associated with the bake, timed bake, and broil pushbuttons thereof. The pane associated with the bake pushbutton is green; the pane associated with the timed bake pushbutton is yellow; and the pane associated with the broil pushbutton is red.

Further, a laterally extending fluorescent electric lamp 81 is arranged in the upper portion of the backsplasher 14 and mounted upon two laterally spaced-apart fixtures 82. The electric lamp 81 is provided with a circuit including a control switch 83. The control switch 83 is suitably mounted within the backsplasher 14 upon the bracket 33 and is provided with a forwardly projecting control knob that is trimmed by the right-hand end of the upper trim element 29. When the electric lamp 81 is illuminated, light proceeds therefrom through the pane 28 in the window 27 in order to illuminate the panel 26 and the cooking top 12. Also, when the lamp 81 is illuminated, light proceeds therefrom onto the color cards 60, etc., respectively associated with the individual pushbutton switches 44, etc., in order to illuminate with the individually associated color the particular operated control pushbutton in each one of the pushbutton switches 44, etc. Specifically, assuming that the warm pushbutton 55 in the pushbutton switch 44 is operated, the light proceeds through the pane 65 in the color card 60 and thence through the aligned openings 73 and 72 and is then projected forwardly by the serrations 75 through the body of the warm pushbutton 55 in order to illuminate the warm pushbutton 55 with the blue color.

This arrangement is very economical as the single laterally extending electric lamp 81 not only illuminates the front of the backsplasher 14 and the associated cooking top 12, but it also illuminates each one of the pushbutton switches 36, 41, 42, 43 and 44. Moreover, this arrangement properly correlates the desired heating effect of a given heating unit with operation of the appropriate control pushbutton in the associated pushbutton switch by means of the color appearing at the end of that particular operated control pushbutton. This arrangement permits the recipe for preparing a particular dish to be given in terms of cooking times against cooking colors, thereby eliminating the confusion of the cook in attempting to correlate cooking times against cooking temperatures.

Further, within the backsplasher 14 adjacent to the timing mechanism 34 there is mounted upon the bracket 33 an oven temperature regulator, not shown, and a time alarm device, not shown. The oven temperature regulator is provided with a rotatable temperature setting knob 91; and the time alarm device is provided with a rotatable time setting knob 92. The rotatable knobs 91 and 92 are positioned adjacent to the right central portion of the lower trim element 30 and are trimmed thereby. Finally, a convenience outlet 93 is mouted upon the right-hand front surface of the front wall 19 and provided with a normal plug receptacle 94 and a timed plug receptacle 95, either of which may be employed for the purpose of heating a portable electrical appliance, such, for example, as a coffee pot. The normal plug receptacle 94 provides a steady source of electric power; and the timed plug receptacle 95 provides a timed source of electric power governed by the timing mechanism 34 in accordance with conventional practice.

In view of the foregoing it will be understood that when the control switch 83 is operated to illuminate the electric lamp 81, the trim elements 29 and 30, the panel 26 and the cooking top 12 are automatically illuminated; and also operated ones of the control pushbuttons of the various pushbutton switches 36, 41, 42, 43 and 44 are automatically illuminated with the corresponding colors as previously explained so as to key the corresponding switching functions of the individual pushbutton switches obtained by operation of the particular control pushbuttons with the heating effects produced in the corresponding heating units. Thus it is apparent that there has been provided an electric range incorporating a simple and economical arrangement for illuminating the backsplasher thereof and for producing a color cooking control in each of the individual pushbutton switches carried by the backsplasher.

In the copending application of Ray C. Sandin and Thomas M. Steinbach, Serial No. 107,064, filed July 27, 1949, and assigned to the assignee of the present application, there is disclosed another form of an electric range incorporating a single electric lamp for illuminating the cooking top of the range, the backsplasher of the range and the individual target holes formed in the backsplasher and associated with the individual pushbuttons incorporated in the several pushbutton switches carried by the backsplasher.

While there has been described what is at present considered to be the preferred embodiment of the invention, it will be understood that various modifications may be made therein, and it is intended to cover in the appended claims all such modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. In an electric range including a cooking top, a plurality of surface heating units carried by said cooking top, a source of current supply, and a hollow backsplasher provided with an up-

standing and laterally extending front wall having a laterally extending opening formed therein and carried by said cooking top adjacent to the rear thereof; the combination comprising a plurality of pushbutton switches respectively corresponding to said surface heating units mounted in lateral alignment in said backsplasher, each of said switches being provided with an off pushbutton and a plurality of control pushbuttons projecting forwardly through said opening so that the outer ends of said pushbuttons terminate in a laterally extending row forwardly of said front wall, in each one of said switches said off pushbutton being operative to actuate said one switch to disconnect the corresponding one of said surface heating units and said source of current supply, in each one of said switches said control pushbuttons being selectively operative to actuate said one switch selectively to complete corresponding different heating connections between the corresponding one of said surface heating units and said source of current supply, said front wall having a laterally extending window formed in the upper portion thereof above said opening, a plurality of light transmitting color cards mounted in said back splasher in a laterally extending row above said switches and respectively associated with said switches, and means including a single laterally extending lamp mounted in the upper portion of said backsplasher above said switches and rearwardly of said window for projecting light through said window in order to illuminate said front wall and said cooking top and for projecting light through said color cards onto the respectively associated ones of said switches, in each one of said switches said control pushbuttons being formed of light transmitting material, each one of said color cards being provided with a plurality of different light color transmitting panes respectively associated with said control pushbuttons in the associated one of said switches, each one of said switches being provided with shutter means responsive to operation of any one of said control pushbuttons for effecting the transmission of light therethrough from the respectively associated one of said panes in the associated one of said color cards.

2. In an electric range including a body housing an oven, a heating unit associated with said oven, a cooking top carried by said body, a plurality of surface heating units carried by said cooking top, a source of current supply, and a hollow backsplasher provided with an upstanding and laterally extending front wall having a laterally extending opening formed therein and carried by said cooking top adjacent to the rear thereof; the combination comprising a plurality of pushbutton switches respectively corresponding to said oven and to said surface units mounted in lateral alignment in said backsplasher, each of said switches being provided with an off pushbutton and a plurality of control pushbuttons projecting forwardly through said opening so that the outer ends of said pushbuttons terminate in a laterally extending row forwardly of said front wall, in each one of said switches said off pushbutton being operative to actuate said one switch to disconnnect the corresponding one of said heating units and said source of current supply, in each one of said switches said control pushbuttons being selectively operative to actuate said one switch selectively to complete corresponding different heating connections between the corresponding one of said heating units and said source of current supply, said front wall having laterally extending window formed in the upper portion thereof above said opening, a plurality of light transmitting color cards mounted in said backsplasher in a laterally extending row above said switches and respectively associated with said switches, and means including a single laterally extending lamp mounted in the upper portion of said backsplasher above said switches and rearwardly of said window for projecting light through said window in order to illuminate said front wall and said cooking top and for projecting light through said color cards onto the respectively associated ones of said switches, in each one of said switches said control pushbuttons being formed of light transmitting material, each one of said color cards being provided with a plurality of different light color transmitting panes respectively associated with said control pushbuttons in the associated one of said switches, each one of said switches being provided with shutter means responsive to operation of any one of said control pushbuttons for effecting the transmission of light therethrough from the respectively associated one of said panes in the associated one of said color cards.

HAROLD E. ACKEMANN.

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