

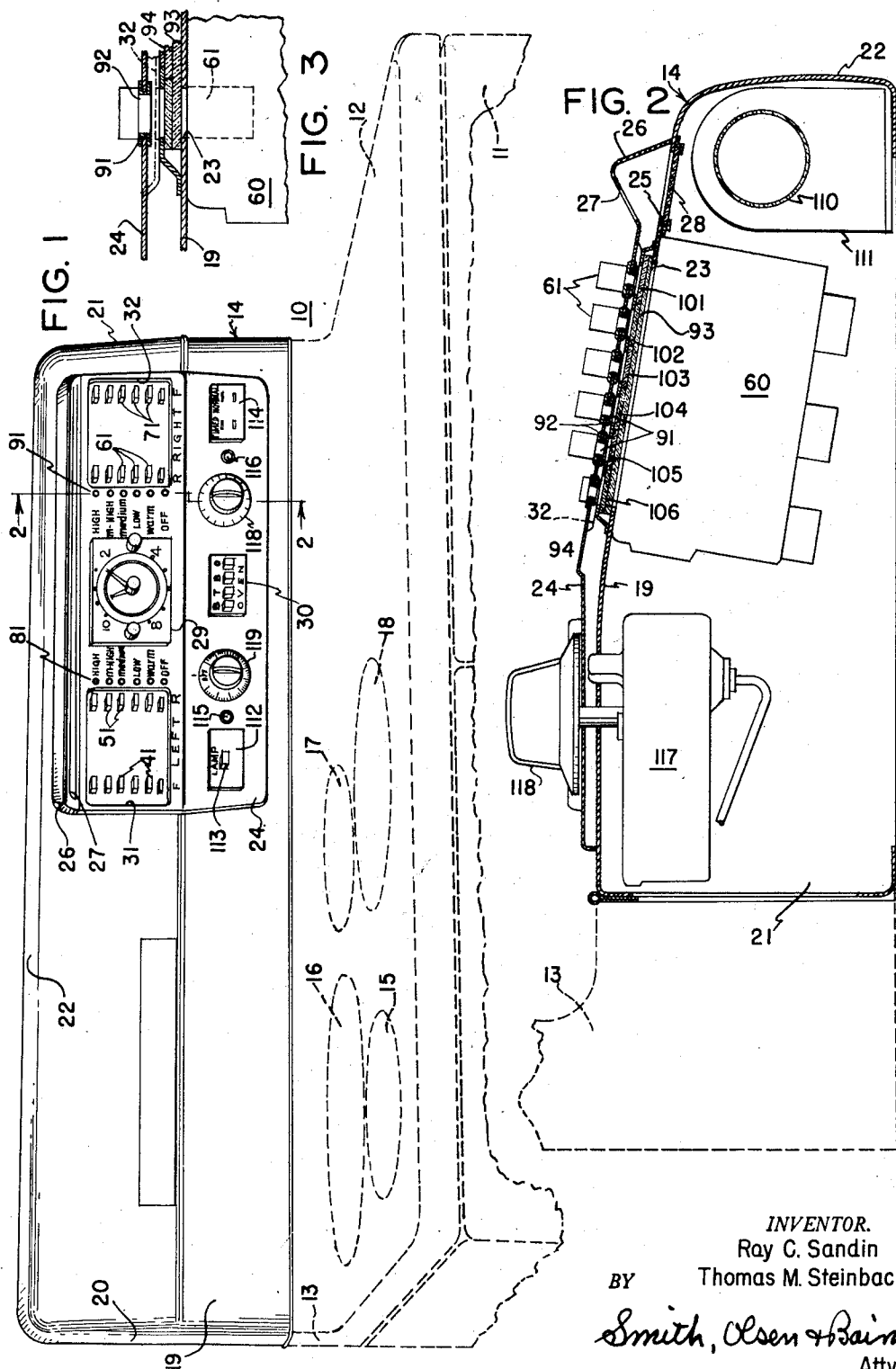
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ILLUMINATED BACKPLASHER FOR ELECTRIC RANGES

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ILLUMINATED BACKSPLASHER FOR
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The present invention relates to electric ranges, and more particularly to illuminated backsplashes 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 backplasher adjacent to the rear thereof. In this range the cooking top supports a number of surface heating units; and the backplasher 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 pushbutton 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

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switches constitutes a refined and efficient appliance, it is 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 an electric range including a backplasher carried by the cooking top thereof, that incorporates a simple and economical illuminating arrangement that correlates the control of pushbutton switches mounted on the backplasher and the heating rates of surface heating units mounted on the cooking top.

Another object of the invention is to provide in an electric range of the construction noted, an improved trim plate carried by the front wall of the backplasher that supports and trims the control elements noted and also effects the distribution of illumination upon the cooking top so that a single lamp may be employed both for the purpose of establishing the color cooking control noted and for the purpose of illuminating the trim plate and the cooking top of the electric range.

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 drawing, in which Figure 1 is a fragmentary front perspective view of the upper portion of an electric range, illustrating the backplasher 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 backplasher, taken in the direction of the arrows along the line 2—2 in Fig. 1; and Fig. 3 is a greatly enlarged fragmentary sectional view of the backplasher, taken from the intermediate portion of Fig. 2.

Referring now to the drawing, 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 backplasher 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 the drawing, 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 backsplash 14 is of hollow construction as previously noted including a front wall 19 that projects first upwardly and then upwardly and rearwardly, as well as upwardly extending side walls 20 and 21, and a connecting substantially horizontally disposed top wall 22. The backsplash 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. An enlarged laterally extending opening 23 is formed in the upper right-hand portion of the front wall 19, which opening 23 is covered by a trim plate 24 suitably removably secured to the front surface of the front wall 19. The opening 23 may constitute a continuous cut-out from side to side with respect to the trim plate 24 or it may comprise a plurality of laterally spaced-apart sections provided with intervening connecting webs. Also, a laterally extending window 25 is formed in the right-hand upper portion of the front wall 19 above the opening 23 and somewhat below the top wall 22, the window 25 being covered by a hood 26 formed integral with and adjacent to the top of the trim plate 24. The hood 26 projects forwardly and downwardly from the top of the front wall 19 and then projects rearwardly and downwardly joining the principal body of the trim plate 24. A laterally extending window 27 is formed in the lower portion of the hood 26 so that light from the interior of the backsplash 14 may be projected through the aligned windows 25 and 27 onto the cooking top 12 as explained more fully hereinafter. Further, a transparent pane 28 formed of glass, or the like, is secured to the rear surface of the front wall 19 within the hollow backsplash 14 in covering relation with respect to the window 25 in order to prevent the entrance of dust, or the like, from the exterior into the hollow backsplash 14.

A clock-controlled timing mechanism 29 is supported by the upper central portion of the trim plate 24 and 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 times; and an oven control switch 30 of the pushbutton type is supported by the lower central portion of the trim plate 24 below the timing mechanism 29 and is arranged manually to control the electric circuits to the

heating elements of the oven. Preferably the pushbutton switch 30 is of the illuminated type disclosed in the Rees patent mentioned and comprises an off pushbutton indicated by the letter "O," an adjacent bake pushbutton indicated by the first letter "B," an adjacent timed bake pushbutton indicated by the letter "T" and an adjacent broil pushbutton indicated by the second letter "B"; these pushbuttons being arranged from the right toward the left in the order named. In the operation of the pushbutton switch 30 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. In passing it is noted that when the "bake" pushbutton is operated the associated lamp illuminates it with a green color; when the timed bake pushbutton is operated the associated lamp illuminates it with a yellow color; and when the broil pushbutton is operated the associated lamp illuminates it with a red color. The lamp, not shown, associated with the pushbuttons in the oven control switch 30 is automatically lighted in response to operation of the bake pushbutton, the timed bake pushbutton or the broil pushbutton, and is automatically extinguished in response to the operation of the off pushbutton; the color cooking control and circuit control operations being incorporated in the pushbutton switch 30 of the Rees type.

Depressions 31 and 32 are respectively formed in the upper left-hand side and in the upper right-hand side of the trim plate 24 in substantial horizontal alignment with the timing mechanism 29 so that the hood 26 is positioned above the timing mechanism 29 and the depressions 31 and 32. Two laterally spaced-apart vertical tiers of guide slots are respectively formed adjacent to the left-hand side and adjacent to the right-hand side of the depression 31 and respectively receive and guide the individual pushbuttons of two corresponding pushbutton switches mounted within the hollow backsplash 14, the individual pushbuttons of one of these switches being indicated at 41 and the individual pushbuttons of the other of these switches being indicated at 51. The left-hand switch, the pushbuttons of which are indicated at 41, controls the electric circuits for the left front surface heating unit 15; while the right-hand switch, the pushbuttons of which are indicated at 51, controls the electric circuits for the left rear surface heating unit 16. Similarly, two laterally spaced-apart vertical tiers of guide slots are respectively formed adjacent to the left-hand side and adjacent to the right-hand side of the depression 32 and respectively receive and guide the individual pushbuttons of two additional corresponding pushbutton switches mounted within the hollow backsplash 14, the individual pushbuttons of one of these switches being indicated at 61 and the individual pushbuttons of the other of these switches being indicated at 71. The left-hand switch, the pushbuttons of which are indicated at 61, controls the electric circuits for the right rear surface heating unit 17; while the right-hand switch, the pushbuttons of which are indicated at 71, controls the electric circuits for the right front surface heating unit 18.

Each of the four pushbutton switches mentioned is preferably of the basic construction

disclosed in the Andrews patent noted, except that it is simplified by the omission of the individual illuminating arrangement therefor and by the provision of pushbuttons formed of a suitable opaque inexpensive plastic material. Accordingly, each of the switches noted comprises an off pushbutton and five individual control pushbuttons respectively corresponding to the off position of the switch and to the five individual heating control positions of the switch. Specifically, each of the switches comprises, in addition to the off position, a high heat control position, a medium-high heat control position, a medium heat control position, a low heat control position and a warm heat control position, in which respective positions the electric circuits for the associated surface heating unit are respectively governed to produce the corresponding heating rates. In each vertical tier of pushbuttons the off pushbutton is disposed at the bottom, the high pushbutton is disposed at the top, and the other four pushbuttons are spaced therebetween toward the top in accordance with increasing heating rates of the associated surface heating unit. This arrangement is very advantageous in that the physical position of a pushbutton toward the top in any vertical tier is, within itself, an index of the corresponding heating rate of the associated surface heating unit. Thus, it will be understood that in the four vertical tiers of pushbuttons 41, 51, 61 and 71 the corresponding pushbuttons are arranged in horizontal alignment, the four off pushbuttons being arranged at the bottom of the four tiers, the four high pushbuttons being arranged at the top of the four tiers, etc.

As best shown in Figs. 2 and 3, the pushbutton switch 60, that is provided with the individual pushbuttons 61, is suitably mounted within the hollow backsplash 14 in abutting relation with respect to the rear surface of the front wall 19 and the individual pushbuttons 61 project through the opening 23 in the front wall 19 and thence through the guide slots formed in the depression 32 to the exterior so that they are readily accessible to be manually operated from the front of the backsplash 14. The details of the electric circuits of the surface unit 17 that are selectively controlled by operation of the pushbutton switch 60 have been omitted in the interest of brevity as they are completely disclosed in Figs. 7 to 12, inclusive, of the Andrews patent mentioned.

The principal body portion of the trim plate 24 is disposed forwardly with respect to the front wall 19, and two vertical tiers of target holes 81 and 91 are formed therein on opposite sides of the timing mechanism 29 and respectively adjacent to the two vertical tiers of pushbuttons 51 and 61. Each of the target holes 81 and 91 extending through the trim plate 24 is provided with an associated trim eyelet in order to present a finished appearance. As best shown in Figs. 2 and 3, the individual target holes 91 are provided with the trim eyelets 92. The portions of the opening 23 respectively disposed below the vertical tiers of target holes 81 and 91 are covered by two color cards for the purpose of effecting illumination of the individual target holes 81 and the individual target holes 91 with different colors. The color card arrangement associated with the vertical tier of target holes 91 is illustrated in Figs. 2 and 3, and comprises a rear pane 93 and a front pane 94 secured together upon the front surface of the front wall 19 in

any suitable manner. The panes 93 and 94 bridge the opening 23 and are positioned between the front wall 19 and the trim plate 24 below the eyelets 92 surrounding the individual target holes 91. Preferably the pane 93 is formed of clear glass, or the like; while the pane 94 comprises six individual sections 101 to 106, inclusive, respectively disposed below the six individual target holes 91 and formed of differently colored glass, or the like. Specifically, the section 101 disposed below the top target hole 91 in the vertical tier is red, the section 106 disposed below the bottom target hole 91 in the vertical tier is clear, and the sections 102, 103, 104 and 105 disposed below the intermediate target holes 91 in the vertical tier are respectively yellow, purple, green and blue.

Further, a laterally extending fluorescent electric lamp 110 is arranged in the upper portion of the backsplash 14 and mounted upon two laterally spaced-apart fixtures 111. The electric lamp 110 is provided with a circuit including a pushbutton switch 112 carried on the lower left-hand side of the trim plate 24. The pushbutton switch 112 is of a conventional type including a single pushbutton 113 that is operated alternately to open and to close the circuit of the electric lamp 110. When the electric lamp 110 is illuminated, light proceeds therefrom through the pane 28 and thence through the window 25 in the front wall 19 and finally through the window 27 in the hood 26 in order to illuminate the trim plate 24, the front of the backsplash 14 and the cooking top 12, the hood 26 serving as a lamp shade in order to effect proper distribution of the light. Also, when the lamp 110 is illuminated, light proceeds therefrom through the opening 23 and thence through the two color card arrangements into the two vertical tiers of target holes 81 and 91 producing illumination of the individual target holes 81 and the individual target holes 91 with the respective colors. Specifically, the light proceeding through the pane 93 and thence through the six sections 101 to 106, inclusive, of the pane 94, effect illumination of the six individual target holes 91 with the respective colors red, yellow, purple, green, blue and clear from the top toward the bottom of this vertical tier. The illumination with red of the top target hole 91 in the vertical tier adjacent to the top pushbutton 61 in the vertical tier produces a color key to the circumstance that this top pushbutton is the high pushbutton and that operation of this top pushbutton will actuate the switch 60 to effect heating of the right rear surface heating unit 17 at the high heating rate. Likewise, the illumination of the other target holes 91 in this vertical tier with the different colors mentioned key the respectively associated pushbuttons 61 to the respective corresponding heating rates of the right rear surface heating unit 17. In view of the foregoing, it will be understood that the target holes 81 key the pushbuttons 51 and 41 while the target holes 91 key the pushbuttons 61 and 71.

This arrangement is very advantageous as it permits proper correlation of the desired heating effect of a given surface heating unit with operation of the appropriate control pushbutton in the associated pushbutton switch by means of the color appearing in the target hole associated with that particular control pushbutton. It will be understood that 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.

Also, it is preferable that the face of the trim plate 24 carry the two groups of legends "High," "Medium-high," "Medium," "Low," "Warm," "Off" in vertical array adjacent to the respective vertical tiers of target holes 81 and 91 on opposite sides of the timing mechanism 29 in order further to correlate the cooking colors appearing in the target holes 81 and 91 with respect to the corresponding heating rates of the various surface heating units.

Further, the lower right-hand side of the trim plate 24 carries a convenience outlet 114 that is provided with a normal plug receptacle and a timed plug receptacle that may be employed for the purpose of heating a portable electrical appliance, such, for example, as a coffee pot. The normal plug receptacle provides a steady source of electric power; and the timed plug receptacle provides a timed source of electric power governed by the timing mechanism 29 in accordance with conventional practice. A pilot lamp jewel 115 is provided adjacent to the pushbutton switch 112 in order to indicate that the heating circuit of one of the surface heating units 15, 16, 17 or 18 is closed; and a pilot lamp jewel 116 is provided adjacent to the convenience outlet 114 in order to indicate that the heating circuit of the oven is closed. Within the backspasher 14 to the right of the oven control pushbutton switch 30, there is mounted an oven temperature regulator 117 that is provided with a rotatable temperature setting knob 118; and within the backspasher 14 to the left of the oven control pushbutton switch 30, there is mounted a time alarm device, not shown, that is provided with a rotatable time setting knob 119.

In view of the foregoing, it will be understood that when the pushbutton switch 112 is operated to illuminate the electric lamp 110 the trim plate 24, the backspasher 14 and the cooking top 12 are automatically illuminated; and, likewise, the vertical tiers of target holes 81 and 91 are automatically illuminated with the different colors, as previously explained, in order to key the corresponding heating rates of the surface heating units 15, 16, 17 and 18 to the corresponding control pushbuttons in the four vertical tiers 41, 51, 61 and 71. Thus it is apparent that there has been provided an electric range incorporating a simple and economical arrangement for illuminating the backspasher thereof.

In the copending application of Harold E. Ackemann, Serial No. 111,301, filed August 19, 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 backspasher of the range and the individual pushbuttons incorporated in the several pushbutton switches carried by the backspasher.

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 surface heating unit carried by said cook-

ing top, a source of current supply, and a hollow backspasher provided with an upstanding and laterally extending front wall having an opening formed therein and carried by said cooking top adjacent to the rear thereof; the combination comprising an upstanding and laterally extending trim plate carried by said front wall and covering said opening, said trim plate having a plurality of vertically spaced-apart guide slots formed therein, a pushbutton switch mounted in said backspasher and provided with an off pushbutton and a plurality of control pushbuttons arranged in vertically spaced-apart relation and projecting forwardly through said opening and thence through corresponding ones of said guide slots, said off pushbutton being operative to actuate said switch to disconnect said surface heating unit and said source of current supply, said control pushbuttons being selectively operative to actuate said switch selectively to complete corresponding different heating rate connections between said surface heating unit and said source of current supply, said trim plate having a laterally extending window formed in the upper portion thereof above said guide slots and carrying a laterally extending hood positioned above said window, said hood projecting forwardly with respect to said window, said trim plate having a plurality of vertically spaced-apart target holes formed therein respectively adjacent to said guide slots, a plurality of different light color transmitting panes mounted in vertically spaced-apart relation on said front wall and respectively associated with said target holes, and means including a single laterally extending lamp mounted in the upper portion of said backspasher for projecting light through said opening and thence through said window in order to illuminate said trim plate and said cooking top and for projecting light through said opening and said panes into said target holes in order simultaneously to illuminate said target holes with corresponding different colors to serve as a key to the corresponding different heating rates of said surface heating unit resulting from operation of the corresponding adjacent ones of said control pushbuttons.

2. The electric range combination set forth in claim 1, wherein the pushbuttons of said pushbutton switch are arranged in a vertical tier with said off pushbutton disposed at the bottom of the tier and with said control pushbuttons disposed thereabove in accordance with the corresponding increasing heating rates of said surface heating unit resulting from operation of the corresponding ones of said control pushbuttons.

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