

Dec. 25, 1951

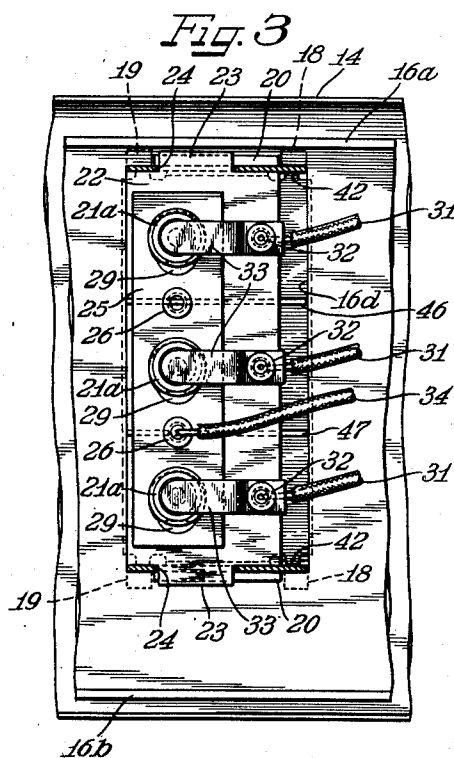
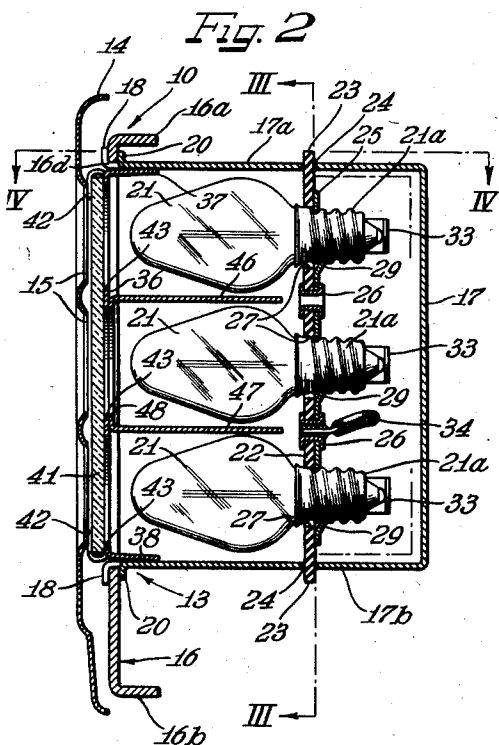
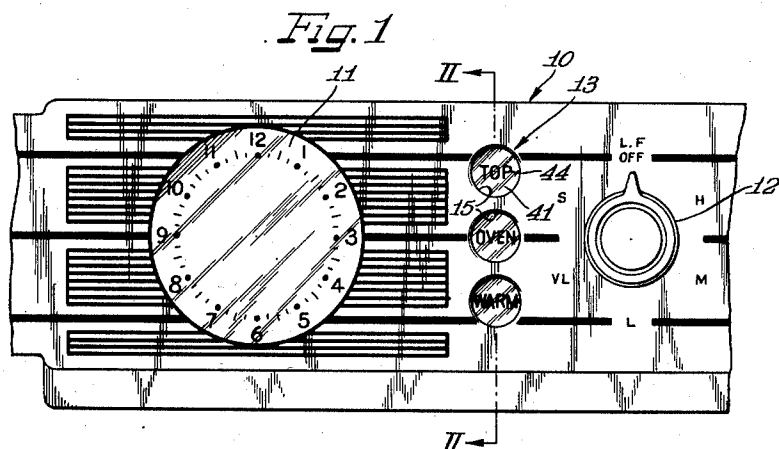
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2,579,618

INDICATOR LAMP ASSEMBLY FOR MULTICIRCUIT ELECTRIC APPLIANCE

Filed April 12, 1949

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

Fig. 4

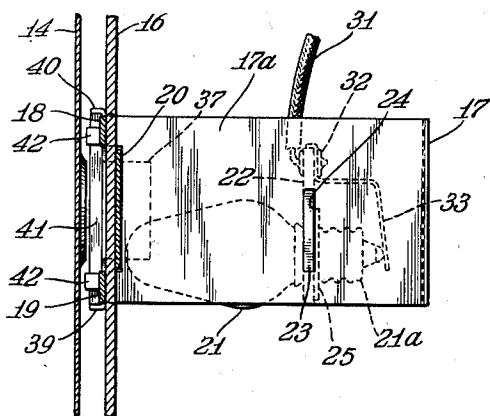


Fig. 5

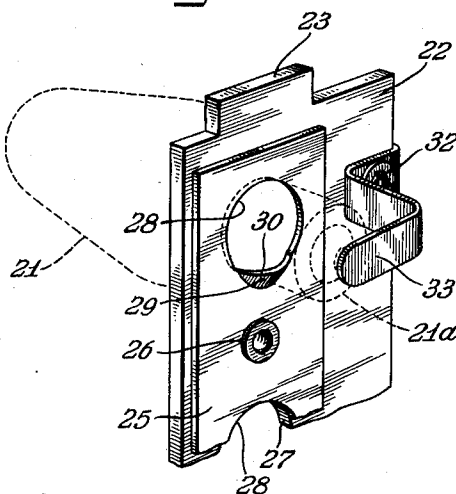
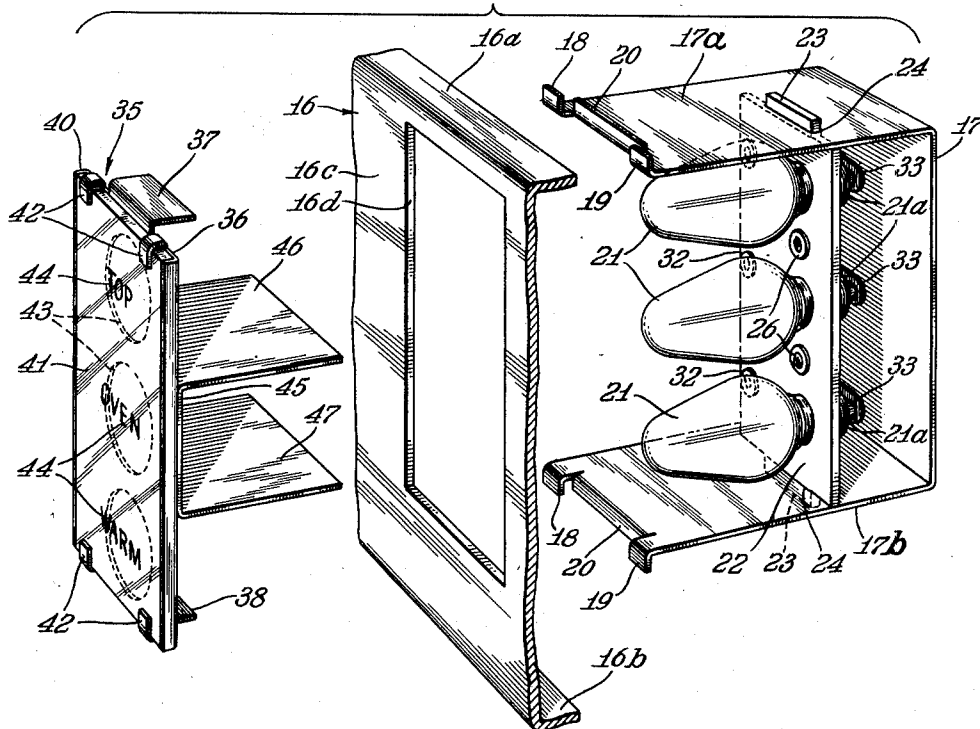


Fig. 6



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UNITED STATES PATENT OFFICE

2,579,618

INDICATOR LAMP ASSEMBLY FOR MULTI-CIRCUIT ELECTRIC APPLIANCES

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Application April 12, 1949, Serial No. 87,040

7 Claims. (Cl. 177—329)

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The present invention relates to an indicator lamp assembly and more particularly to an indicator lamp assembly for designating the operation of a plurality of electrical circuits as in an electrical appliance.

In electrical appliances, and particularly in appliances employing a plurality of electrical circuits, it has been proposed that a plurality of indicator lamps be connected in the various circuits to indicate which circuits are operating at any given time. The present invention provides a novel type of indicator lamp assembly for such use, the assembly of the present invention being particularly adapted for use in an electric stove or range.

In general, the present invention comprises an assembly for retaining a plurality of indicator lamps in position on a control panel for a stove or similar appliance. Each of the lamps is connected to its particular circuit, and novel lamp mounting means provide a common electrical return for the plurality of lamps. In addition, the novel mounting means of the present invention threadedly receives the threaded base of each of the lamps without the necessity of providing a threaded recess. A portion of the lamp mounting base is offset to engage the threads of the lamp without the necessity of performing any threading operation on the base.

Also, the assembly of the present invention provides a translucent indicator panel overlying the lamp of the assembly and means for confining the light from any one of the lamps to its appropriate section of the indicator panel. The lamps and the translucent panel are assembled into a complete indicator lamp assembly by a mere fitting together of the parts of the assembly without the necessity of external fastening means, thus eliminating the necessity of welding, brazing, riveting or otherwise fastening the assembly together. Any one of the plurality of parts of the indicator lamp assembly may be readily removed from the assembly for repair or replacement by a very simple operation inasmuch as no external means are employed to maintain the component parts in their assembled relation. It is, therefore, an important object of the present invention to provide an improved indicator lamp assembly.

Another object of the present invention is to provide an improved indicator lamp assembly having a plurality of individual lamps for indicating the operation of a plurality of circuits in an electrical appliance.

A further object of the present invention is to

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provide an indicator lamp assembly which may be readily assembled without the necessity of employing external fastening means.

It is a still further important object of the present invention to provide an improved indicator lamp assembly in which a plurality of lamps are maintained in position upon a lamp plate providing a common electrical return for the lamp and at the same time threadedly retaining the lamps without the provision of a threaded plate recess.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawings.

On the drawings:

Figure 1 is an elevational, front view of a control panel for an electric range;

Figure 2 is an enlarged sectional view taken along the plane II—II of Figure 1;

Figure 3 is a vertical, sectional view, with parts shown in elevation, taken along the plane III—III of Figure 2;

Figure 4 is a horizontal, sectional view taken along the plane IV—IV of Figure 2;

Figure 5 is an enlarged fragmentary, sectional view of the lamp base plate of Figures 2 and 3; and

Figure 6 is an enlarged, exploited perspective view of the indicator lamp assembly of the present invention.

As shown on the drawings:

In Figure 1, reference numeral 10 refers generally to a control panel for an electric range including a clock or timer face 11, a heating element control knob 12 and a heating element indicator section 13.

As shown in Figure 3, the panel 10 includes an outer decorative strip 14 preferably formed of metal and provided with a plurality of vertically aligned apertures 15 through which the heating element indicator section or assembly 13 may be viewed. An inner, load bearing, supporting strip 16 is spaced directly behind the decorative strip 14 to support the indicator section 13 in abutting relation to the decorative strip. As best seen in Figure 6, the supporting strip 16 is channeled to provide intumed, spaced flanges 16a and 16b and a central web section 16c, apertured as at 16d. When the indicator strip 13 is assembled as viewed in Figure 2, the aperture 16d is aligned with the apertures 15 of the decorative strip 14.

A generally U-shaped lamp bracket 17, having spaced generally parallel legs 17a and 17b, is adapted to be secured to the supporting strip 16.

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More particularly, the freely extending end of each of the legs 17a and 17b is provided with a pair of spaced, out-turned side flanges 18 and 19 and a central out-turned flange 20 between the flanges 18 and 19. The central flange 20 is spaced inwardly from the side flanges 18 and 19 through a distance approximately equal to the thickness of the strip 16. The U-shaped bracket 17 is formed of relatively resilient sheet material, such as sheet metal, so that the legs 17a and 17b may be resiliently deflected inwardly toward one another.

The assembly of the bracket 17 to the strip 16 is illustrated in Figures 2 and 4 in which it may be seen that the legs 17a and 17b are partially inserted through the aperture 16d of the plate 16 with the legs 17a and 17b being resiliently deformed inwardly toward each other. The bracket 17 is inserted through the aperture 16d only to such an extent that, upon release of the legs 17a and 17b, the flanges 18 and 19 engage the forward surface of the plate 16 while the flange 20 engages the rear surface of the plate 16 to secure the bracket thereto.

A plurality of lamps 21 are secured within the lamp bracket 17 by means of a lamp mounting plate 22 extending transversely of the bracket 17 between the bracket legs 17a and 17b. As best seen in Figures 5 and 6, the lamp mounting plate 22 is provided with opposing reduced tongues 23 of such size to fit within corresponding apertures 24 formed in each of the legs 17a and 17b. The mounting plate 22 is formed of a suitable insulating material, as for example of a plurality of cloth laminae impregnated with a phenolic resin, and the plate is preferably of such size as to extend into flush relation with the interior surfaces of the legs 17a and 17b of the bracket 17 when the indicator lamp assembly is assembled.

The mounting plate 22 carries a conducting strip 25 formed of suitable material, as of brass, which is secured to the plate 22 by suitable means, as by hollow rivets 26. The plate 22 is provided with spaced, aligned circular apertures 27 for receiving the bases 21a of the lamps 21, while the strip 25 is provided with corresponding apertures 28 aligned with the apertures 27. The apertures 28 of the strip 25 are not circular in peripheral contour but rather are provided with radially inwardly projecting segmental protuberances 29 which are offset in a direction normal to the plane of the plate 25. The protuberances 29 are provided with arcuate inner surfaces 30 which engage the threaded bases 21a of the lamps 21 inserted through the registering apertures 27 and 28. This engagement of the threaded bases 21a by the protuberance edge 30 is shown schematically in Figure 5 and also in Figures 2 and 3. Thus, the threaded base 21a of each of the lamps 21 is engaged by a protuberance 29 eliminating the necessity of providing a plurality of threaded apertures in the plate 25 to receive the lamps 21. It is to be noted that the protuberance 29 cooperates with the remainder of the peripheral edge of each of the apertures 28 so that the lamp base is actually threadedly engaged by the entire periphery of each of the apertures 28.

The electrical contact with the lamps 21 is provided by means of an individual lead wire 31 for each of the lamps 21, each lead wire being secured, as by soldering, to a hollow rivet 32 secured to the insulating lamp mounting plate 22 but not to the strip 25. A deformable conductor strip 33 is secured to each of the hollow rivets 32

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in good electrical contact with each of the lead wires 31, the strips 33 being contacted by the base contacts of each of the lamps 21 when threaded into the apertures 28 as hereinbefore described. The plate 25 provides a common return for each of the lamps 21 by means of a return conductor 34 secured to the plate 25 in good electrical contact therewith by suitable means, as by solder, through one of the hollow rivets 26.

It may be seen in Figure 2 that, upon assembly of the lamp bracket 17 in the aperture 16d of the plate 16, the lamps 21 are immediately adjacent the aperture 16d. The bracket 17 is maintained in position within the aperture 16d and the illumination from each of the lamps 21 is channeled to its proper indicator panel space by means of the lamp shield assembly 35 as shown in Figures 2 and 6 of the drawings. The lamp shield assembly 35 includes a lamp shield bracket 36 having opposed, intumed flanges 37 and 38 sized to fit within the aperture 16d of the supporting strip 16. More particularly, the flanges 37 and 38 are so spaced that they fit within the legs 17a and 17b of the lamp bracket 17 when it is assembled within the aperture 16d, the flanges 37 and 38 contacting those portions of legs 17a and 17b immediately adjacent the leg flanges 20, as best shown in Figure 2. The flanges 37 and 38 help urge the legs 17a and 17b outwardly so that the flanges 18, 19 and 20 are maintained in tight gripping engagement with the plate 16. When thus assembled, the bracket 36 prevents the inward resilient movement of the legs 17a and 17b to permit removal of the bracket from its position within the aperture 16d.

The lamp shield bracket 36 is also provided with outwardly turned marginal flanges 39 and 40 receiving therebetween a translucent ceramic or glass plate 41 and upper and lower clamping flanges 42 to overlie adjacent marginal portions of plate 41 to prevent vertical movement thereof. The translucent plate 41 is thus secured to the front face of bracket 36 to lie between the bracket and the decorative strip 14 upon final assembly, as shown in Figure 2.

The bracket 36 is provided with a series of vertically aligned apertures 43, while the translucent plate 41 is provided with indicia 44 in corresponding position to lie between the apertures 43 of bracket 36 and the apertures 15 of strip 14.

A light baffle 45 having parallel inwardly extending legs 46 and 47 is secured to the lamp shield bracket 36, as by spot welding, to extend between the lamps 21 when the device is assembled as viewed in Figure 2. The baffles 46 and 47 serve to confine the light from any one of the lamps 21 to illuminate only that indicia 44 lying directly in front of the respective aperture 43 with which the lamp is associated. It will be seen in Figure 2 that the baffle 45 is apertured as at 48 so that light from the center lamp 21 may illuminate its corresponding indicia 44 of plate 41.

It will, of course, be appreciated that the indicia 44 of the plate 41 is correlated to the circuit to which the corresponding lamp 21 is connected through its respective lead wire 31. In this manner, the control panel affords at a glance an indication of those circuits of the stove which are in use at any given time.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention, and it is, therefore, not the purpose to limit the patent granted hereon other-

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wise than necessitated by the scope of the appended claims.

I claim as my invention:

1. An indicator lamp assembly comprising a supporting strip having an aperture formed therein, a lamp bracket having resilient arms engaging opposing sides of said aperture in resilient gripping engagement, a plurality of lamps secured within said lamp bracket and connected to the various operating circuits of an appliance, shielding means also engaging said supporting strip to direct light from said lamp to a desired spot, and visual indicating means associated with each of said lamps for indicating those circuits which are energized.

2. An indicator lamp assembly for an electrical appliance comprising a supporting strip having an aperture formed therein, a lamp bracket having resilient arms engaging opposing sides of said aperture in resilient gripping engagement, a plurality of electrical lamps carried by said bracket and connected to various operating circuits of said appliance, and a shield assembly engaging said bracket and urging the same into tighter engagement with said strip and including means extending between said lamps to direct light therefrom against corresponding indicia.

3. An indicator lamp assembly for an electrical appliance having a plurality of electrical operating circuits comprising a load bearing supporting strip having an aperture formed therein, a lamp bracket having elongated resilient arms formed with terminal flanges engaging opposing sides of said strip at the edges of said aperture, a plurality of electrical lamps carried by said bracket and connected to the various operating circuits of the device, a lamp shield having flanges positioned in the aperture of said strip and urging the arms of said bracket outwardly into engagement therewith, and shield baffles carried by said shield and extending between said lamps for directing light from said lamp to a desired location.

4. An indicator lamp assembly for an electrical device having a plurality of electrical operating circuits comprising a lamp bracket having elongated parallel resilient arms terminating in spaced flanges, a supporting strip having an aperture formed therein receiving a portion of said arms with said flanges bearing against opposing sides of said strip to secure said bracket thereto, a plurality of lamps carried by said bracket and connected to the various operating circuits of said appliance, a lamp shield engaging said arms and urging the same outwardly into engagement with those portions of said strip defining said aperture, baffles secured to said shield and extending between said lamps to direct light therefrom, and a translucent plate for receiving light from said lamps and having indicia formed thereon describing that circuit with which the lamp associated therewith is connected.

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5. An indicator lamp assembly for an electrical appliance having a plurality of operating electrical circuits comprising a lamp bracket having freely extending elongated arms formed of relatively resilient material with terminal flanges, a supporting strip having an aperture receiving the end portions of said arms and contacting said arm flanges, an insulating strip extending transversely across said bracket, a plurality of electrical lamps carried by said insulating strip and connected to the various operating circuits of said appliance, and a lamp shield urging said bracket arms into tight engagement with said strip and having baffle portions extending between said lamps for directing light therefrom.

6. An indicator lamp assembly for an electric appliance having a plurality of electrical operating circuits comprising a lamp bracket having spaced, parallel freely extending arms of relatively resilient material terminating in end flanges, a supporting strip engaged by said end flanges and maintaining said bracket in position, said bracket arms having opposed apertures intermediate of said arms, an insulated mounting strip having tongue portions seated in said bracket arm apertures, a plurality of electrical lamps carried by said insulating strip and connected to the various operating circuits of said appliance, a lamp shield having spaced, terminal flanges engaging said arms and urging the same into contact with said strip, and baffles carried by said lamp shield and extending between said lamp to direct light therefrom against indicia carried by said shield.

7. In an indicator lamp assembly for an electrical appliance having a plurality of electrical operating circuits, a lamp mounting plate for securing indicating lamps in said assembly comprising an insulating mounting base, a conducting strip secured to said base, said base and said strip having registering apertures and a portion of said strip being deformed to overlies said registering apertures to threadedly engage the base of lamps secured thereto, and a plurality of electrical contacts carried by said base for contacting the base contacts of said lamps, said plates serving as a common return for said plurality of lamps.

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