ILLUMINATED OVEN WITH VIEWING MEANS

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This invention relates to a domestic appliance and more particularly to compartments such as the oven compartment of a domestic range.

Oven compartments are usually provided with metal doors so that it is necessary to open the oven to ascertain the progress of any baking or cooking operation therein. Some doors have been provided with windows but it is necessary to stoop or bend down in order to see through the window.

It is an object of my invention to provide a more convenient arrangement for viewing the interior of the oven including a convenient arrangement for lighting the interior of the oven without opening the oven door.

It is another object of my invention to provide a simple mirror arrangement by which the interior of the oven may be viewed without bending or stooping down.

It is another object of my invention to provide a small door upon the compartment door and a control arrangement by which a light within the compartment may be illuminated whenever the small door is opened.

These and other objects are attained in the form shown by providing an electric oven having an illuminating light and an oven door provided with an inner window which registers with a small outer door provided on its inner face with a mirror in which is reflected the interior of the oven. The illuminating light is controlled by a push button mechanism normally held in open position by a part of the door when it is closed. When either the oven door or the small door is opened there is provided a lever arrangement wherein the push button is released to illuminate the light.

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

In the drawings:

Figure 1 is a front view of an oven embodying one form of my invention;

Figure 2 is a fragmentary side elevation of the range with a portion of the oven door and oven compartment in section;

Figure 3 is a view similar to Figure 2 with the small mirror door open at an angle of about 45°;

Figure 4 is an enlarged sectional view of the portions of the oven door showing the upper edges of the window and small door construction;

Figure 5 is a fragmentary sectional view of the oven door showing the lower edge portions of the window and small door; and

Figure 6 is a fragmentary sectional view taken along the lines 6—6 of Figure 1.

Referring now to the drawings and more particularly to Figure 1 for the purpose of illustrating one form of my invention there is shown a domestic electric range 20 provided with a range top 22 and an oven door 24 beneath the range top. The range is provided with a front wall 26 behind the oven door 24 and an oven compartment 28 enclosed by the oven liner 30. Within the oven compartment 28 is an electric illuminating light 32. This illuminating light 32 is connected to the supply conductors 34 by a push button type switch 36 which is propelled by the spring 38 to closed position to close the circuit of the light 32 whenever the push button switch is released.

The door 24 is constructed of inner and outer sheet metal members 40 and 42 having their outer edges flanged and nested together. The sheet metal member 40 has a rectangular opening surrounded by an inwardly turned flange 44. This flange 44 is provided with a curled edge 46 which is curled toward the opening in the member 40. A gasket 48 of suitable rubber-like material such as silicone or asbestos, preferably circular in cross-section, is mounted within the curled edge 46 as shown best in Figures 4 and 5. Within the flange 44 and lodged directly against the gasket 48 is a window pane 50. This window pane 50 is held in place by a U-shaped metal molding 52 provided with tongues 54 at various points entering into and held by the inner slots 56 provided in the flange 44. Thereby the molding 52 is held tightly against the window pane 50 as shown in Figures 4 and 5.

The outer member 42 is provided with an opening which substantially registers with the flange 44. Set into this opening is a door frame 58 having an outwardly extending flange 60 which overlies the edges of the door opening in the outer sheet member 42. The inner edge of the door frame 58 is provided with an inwardly extending flange 62 extending closely adjacent the curled edge 46 and hiding the gasket 48. The door frame 58 is provided with a rubber door stop 97. The door frame 58 is provided with a small door 64 pivoted on the lower hinge 66 to the door frame 68. A light spring 63 of the coil-type is provided with a coil which is coaxially aligned with the pivot pin of the hinge 66. One arm 70 of this spring 63 is held and fastened within the edge of the small door 64 as shown in Figure 5. The other end extends to and through an aperture in the flange 62. This spring 63 provides an upward force upon the door 64 which balances the force of gravity and also holds the door 64 resiliently closed. The door 64 is provided with a glass mirror 72 held in place by the upper hinge element 66.

This door is arranged so that when opened to the position shown in Figure 3 anyone may look down on the mirror 72 and see the reflection through the window pane 50 of the contents of the oven compartment 28 without stooping or bending over.

The door 24 is provided with a lever 76 pivoted upon the pin 80 which is connected to the rear panel 40. The lever 76 is provided with a projecting pin 80 which is adapted to extend through an aperture in panel member 40 to engage the end of the push button switch 36 and move the switch 36 to open position by pushing back its push button against the force of the spring 38 to open the circuit. This pin 80 is normally held in the position shown in Figure 6. The lower end of the lever 76 is provided with a pin 82 which normally engages a portion of the small door 64 when the small door is closed to hold the pin 82 and the lever 76 in the position shown in Figure 6. The door 24 is provided with an inner frame 84 supporting a compression type spring 86 supported by the inner sheet member 40 and acting in such a direction upon the spring 76 as to move the lever 76 in the clockwise direction to pull the push button controlling pin 80 away from the button of the push button switch 36 and to project the small door pin 82.

When the inner door 64 is opened for example to the position shown in Figure 3 the pin 82 and the lever 76 will retract a sufficient amount to cause the projection or pin 80 to move away from the push button switch 86 to allow the switch 36 to move to closed position. Likewise
when the main door 24 is opened, the push button switch 36 is similarly released to close the circuit of the illuminating light 32. The door 24 is provided with a large ornamental handle 90 while the small auxiliary door is provided with a small handle 92. By this simple arrangement the small door may be opened to a convenient angle and by opening the door 64 it is possible to look into the mirror 72 and see the progress in cooking of material within the oven compartment 28. The door 24 is provided with an inner sheet metal reinforcing frame member 94. The door 24 may also be filled with insulating material. The space between the door 64 and the window pane 50 provides an air space which aids in preventing a substantial portion of the transmission of heat through the door.

In accordance with the provisions of Rule 78a, reference is made to the following prior filed application, Serial No. 376,609, filed August 26, 1953, now Patent No. 2,758,197, granted August 7, 1956.

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 as may come within the scope of the claims which follow.

What is claimed is as follows:

1. An oven including walls enclosing an oven compartment, an oven door for closing said compartment, a small door and a small door opening serving as a window opening for viewing purposes forming a part of said oven door, said small door being pivotally mounted relative to said oven door, a light for illuminating the interior of the oven, and means responsive to the opening of either door for lighting said light.

2. A compartment including enclosing walls provided with a door opening, a compartment door for closing said door opening, said compartment door including an inner window and a small door extending over said window, an illuminating light for said compartment, a control means for said light, said compartment door having an operating means cooperating with said control means to extinguish the light when the compartment door is closed and to illuminate the light when said compartment door is open, said operating means including means cooperating with and operated by the opening of said small door for causing the operation of the control means to illuminate said light when said compartment door is closed.

3. A compartment including enclosing walls provided with a door opening, a compartment door for closing said door opening, said compartment door including an inner window and a small door extending over said window, an illuminating light for said compartment, a control means for said light, said compartment door having an operating means cooperating with said control means to extinguish the light when the compartment door is closed and to illuminate the light when said compartment door is open, said operating means including means cooperating with and operated by the opening of said small door for causing the operation of the control means to illuminate said light when said compartment door is closed, said small door being provided with a mirror on its inner face.

4. A compartment including enclosing walls provided with a door opening, a compartment door for closing said door opening, said compartment door including an inner window and a small door extending over said window, an illuminating light for said compartment, a control means for said light, said control means including a push member and means for projecting the push member into the path of closing movement of said compartment door, said control means being movable to a position for illuminating the light when the push member is projected, said compartment door being provided with a lever arrangement and means for normally holding said lever arrangement in a position to depress said push member when the compartment door is closed, said lever arrangement including a portion extending into cooperative arrangement with said small door and a means for moving the lever arrangement away from said push member when said small door is opened.

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