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OVEN SWITCH

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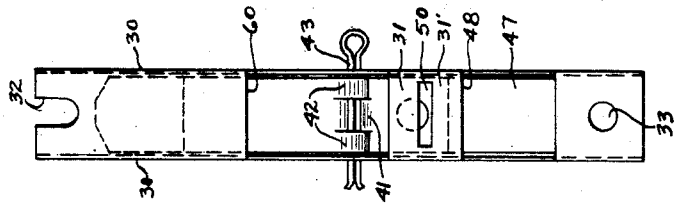


Fig. 3

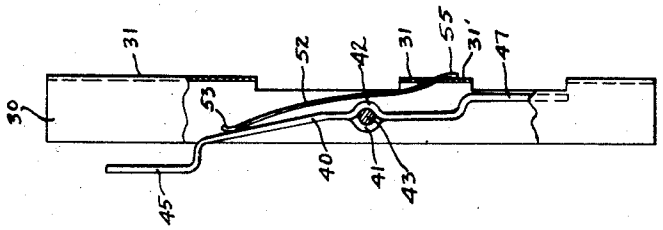


Fig. 4

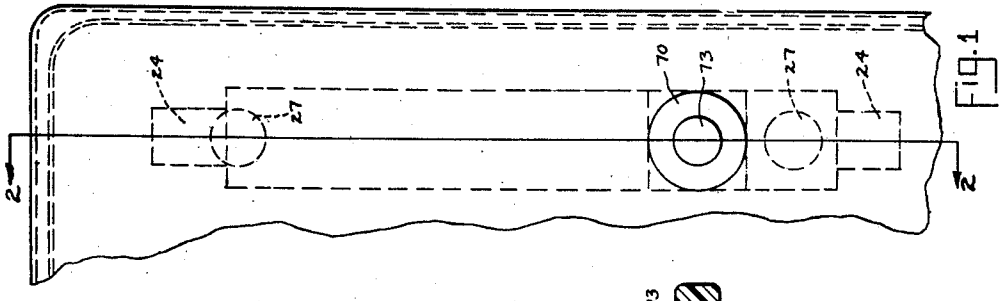


Fig. 1

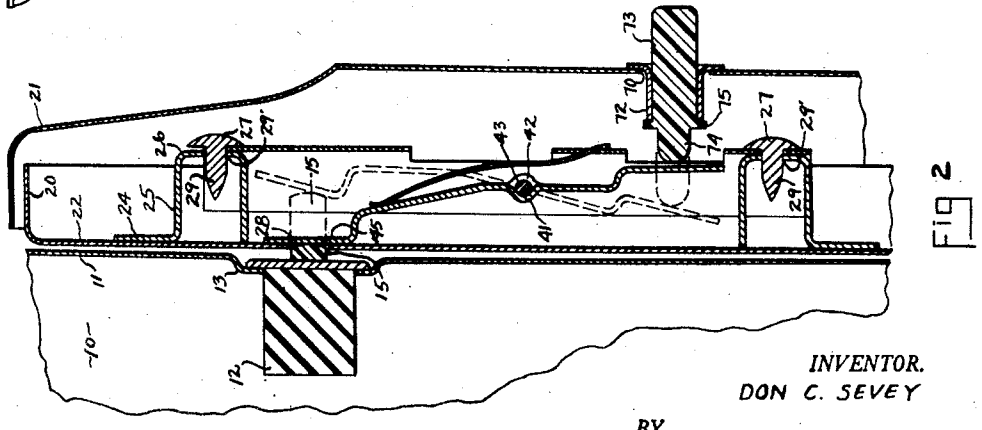


Fig. 2

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OVEN SWITCH

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2 Claims. (Cl. 200—61.81)

This invention relates to range structures and more particularly to a novel oven door switch construction.

In present day domestic ranges, the oven may be provided with a swingable door having a glass window disposed therein. The glass window enables the person using said range to look into the interior of said oven and examine the contents at any time without opening the door.

A source of illumination, such as a light bulb, is usually mounted within the oven, and when energized, illuminates the oven interior sufficiently to enable the operator to readily see the contents. A control switch, connected between the light bulb and source of electrical energy, may be operable to connect and/or disconnect said light bulb from said source of energy as desired, and usually operates in conjunction with the opening of the door to turn the light on when the door is opened.

Heretofore, a supplemental control switch has usually been provided, mounted on the instrument panel above and to the rear of the burner platform, whereby the operator may turn on the light independently of the door switch in order to illuminate the oven contents without opening the door. In the above instance, it is necessary for the operator to reach over said platform in order to operate the switch. Whenever the burners are being used, the operator, by being required to reach thereover, may come into accidental contact with said burners or cooking containers placed thereon, resulting in painful burns. Furthermore, because of the position of this switch, it was difficult to turn it on and view the contents of the oven at the same time.

The novel oven door construction of the present invention overcomes the above described disadvantages of the prior art devices.

Other advantages will be obvious herefrom and a more complete understanding thereof will be realized upon reference to the following disclosure and accompanying drawings in which:

Fig. 1 is a side elevational view of the switch operator of the present invention, certain hidden parts being shown by dashed lines;

Fig. 2 is a sectional view of a portion of an oven and a part of an oven door structure embodying the present invention, taken on the line 2—2 of Fig. 1;

Fig. 3 is a top plan view of the frame of the switch operator showing the switch operating lever with the return spring removed; and

Fig. 4 is a side elevation with certain parts broken away to illustrate the interior.

Briefly, this invention comprises a switch operator that is mounted within the confines of the oven door, and which is provided with means extending exteriorly of said door that may be operated to actuate an oven light control switch without moving said oven door.

Thus one switch is used which turns on the light automatically when the door is opened and the same switch may be actuated when the door is closed. This permits

a reduction in wiring as well as the number of switches. It also makes it possible to wire a range exactly the same regardless as to whether or not the door has a window.

Fig. 2 is a section through the side door frame of a range oven and through the door associated therewith. The wall of the oven **10** is provided with a right angled flange **11** on which is mounted a switch body **12** that is disposed in a depression **13** in the panel. The switch may be held in position by any of the usual means not shown and is provided with an operating plunger **15**, that is spring pressed outwardly as shown in the dashed lines. The switch structure itself is conventional as is its mounting on the side of the range oven. In the "plunger out" position the switch is closed and energizes a circuit to a lamp within the oven to illuminate its contents in a manner known to the art. Normally the switch is pressed inwardly, by the action of closing the oven door, to open the circuit; when the door is opened the switch closes and turns on the light so that the contents of the oven are illuminated. In this instance, the door includes an inner panel **20** telescopically engaged with an outer panel **21**. The inner face **22** of the inner panel which closes the oven opening is provided with a pair of brackets which are secured to the face of the panel **22** interiorly of the door. Each bracket comprises a base **24**, welded to the inner panel, and a U-shaped portion **25**. Two of these brackets are provided, one near the top edge of the door and one spaced downwardly therefrom. The outer extremity **26** of each bracket is provided with an opening for the reception of a fastener **27**, the stem **29** of which extends through the opening of the bracket for holding the switch operator about to be described. In this instance, the inner panel **22** is provided with an opening **28** in registry with the operating pin **15**. Therefore, when the door is closed, the pin may pass through the opening **28** to the position shown in dashed lines.

The operator of the invention includes a means for engagement with the operating pin **15**, effectively closing the opening **28** and normally depressing the operating pin **15** when the door is closed. This means is provided with a spring which is operable by a manually depressible plunger to move the means away from the opening **28** and allow the operating pin to pass through the opening and turn on the switch.

The above means includes a channel shaped frame having sides **30** and a top **31**. The top is provided with a U-shaped notch **32** in one end and an opening **33** in the other end. The frame is held to the brackets **25** by the fasteners **27** extending through the notch **32** and opening **33** and through the holes **29'** in the ends of the bracket.

The operating lever is made of a strip of metal having an elongated body **40**, the mid point of which has struck therefrom a portion **41** which extends in one direction and side portions **42** extending in the other direction to provide a transversely extending eye for the reception of a cotter pin **43** which extends through the sides **30** of the frame and through the eye and thus pivotally supports the lever between the sides of the frame. The lever is provided with an offset portion **45** at one end which, as can be seen from Fig. 2, is disposed opposite the hole **28** in the inner door panel. The other end of the lever is provided with a portion **47** offset in the opposite direction which is disposed opposite to an opening **48** formed in the wall **31** of the frame. This opening can be of substantially any formation, that in the drawings being shown as rectangular. Adjacent and spaced from the opening **48** is a smaller transversely extending opening **50** which is adapted to receive the end of a leaf spring **52**, one end of which is

provided with a curved foot 53 that presses against the lever 40 and the other end of which passes through the opening 50 and has a portion 55 extending over the wall 31'. An additional rectangular opening 60 may be provided, the purpose being to allow the spring 52 to operate more freely and to facilitate the assembly of the parts.

The outer panel of the door is provided with an opening 70 in which a flanged guide 72 is secured, the guide having a cylindrical barrel for receiving an operating pin 73. The operating pin has a lever engaging portion 74 and is held within the guide 72 by a flange 75 which abuts the inner edge of the guide.

In operation, the spring 52 is sufficiently stiff that the portion 45 of the lever is held over the opening 28, and when the door is closed presses the operating pin 15 inwardly to open the switch. Should it be desired to operate the switch without opening the door, the plunger 73 may be pressed inwardly and engages the portion 47 of the lever which is rocked to the dashed line position shown in Fig. 2, moving the part 45 away from the opening 28 and allowing the plunger to move to the position shown by the dashed lines in Fig. 2.

It will be apparent therefore that with the device of the invention the only change from the standard oven required to provide a light that may be turned on when the oven door is closed, is in the door itself. Thus, the oven may have its normal conventional wiring. It is also apparent that by pressing the plunger 73, the contents of the oven may be illuminated at any time with the oven door closed, this being particularly useful when the door has a window, without opening the oven and disturbing its contents or allowing the heat to escape into the room. It is apparent that this structure is extremely economical to manufacture and adds considerably less cost to a range than a separate switch and its associated wiring, and further that it puts the operating member for the switch into a position where the contents of the oven may be viewed easily when the switch is turned on. Furthermore, it eliminates the possibility that the switch will accidentally be turned on and left on with the oven light illuminated and eliminating the resultant consumption of power.

Having thus described the invention, I am aware that numerous and extensive departures may be made therefrom without departing from the spirit of the invention and the scope thereof as described by the appended claims.

I claim:

1. In a range having an oven and a door therefor which has spaced inner and outer panels, the inner panel having an opening therein, an electrically energized light source in said oven, a switch connected to control the energization of said light source and having an operator positioned to project into said opening in the inner panel of the door, the improvement which comprises support bracket means mounted on the inner panel of the door and disposed between the inner and outer panels of the door, an elongated lever pivotally mounted between its ends on said support bracket means, said lever at its upper end presenting a portion which extends across said opening in the inner panel of the door for engagement with the switch operator thereat, said support bracket means having an outer wall disposed outwardly from the pivot for the lever, said outer wall on the support bracket means having an opening therein below the pivot for the lever, a leaf spring having an outwardly offset lower end engaging the outer side of

said outer wall of the support bracket means below said opening therein, said leaf spring extending up through said opening in the outer wall of the support bracket means and engaging the lever above its pivot and biasing the upper end of the lever toward the inner panel of the door, said outer wall of the support bracket means having a second opening therein which is disposed above said first-mentioned opening therein and extends above and below the pivot for the lever to facilitate assembly of the leaf spring on the support bracket means, said outer wall of the support bracket means having a third opening therein disposed below said first-mentioned opening therein, a guide sleeve mounted on the outer panel of the door and extending into the space between the outer and inner panels of the door opposite said third opening in the outer wall of the support bracket means, a plunger separate from the lever and snugly and slidably received in said guide sleeve, said plunger at its outer end projecting outward beyond the outer panel of the door, said plunger at its inner end projecting into said third opening in the outer wall of the support bracket means, and said lever presenting an outwardly offset portion at its lower end at said third opening for engagement by the inner end of the plunger when the plunger is pushed inward to pivot the lever against the bias of said leaf spring and move the upper end of the lever away from said opening in the inner panel of the door.

2. In a range having an oven and a door therefor which has spaced inner and outer panels, the inner panel having an opening therein, an electrically energized light source in said oven, a switch connected to control the energization of said light source and having an operator positioned to project into said opening in the inner panel of the door, the improvement which comprises a support bracket disposed between the inner and outer panels of the door, an elongated lever pivotally mounted between its ends on said bracket, said lever at one side of its pivot presenting a portion which extends across said opening in the inner panel of the door for engagement with the switch operator thereat, said bracket having an outer wall disposed outwardly from the pivot for the lever, said outer wall on the bracket having an opening therein at the opposite side of the pivot for the lever, a leaf spring having an offset end engaging said outer wall of the bracket adjacent said opening therein, said leaf spring extending inward through said opening and engaging the lever at said one side of its pivot to bias said portion of the lever toward the inner panel of the door, said outer wall of the bracket having an additional opening therein, a plunger separate from the lever slidably mounted in the outer panel of the door and at its inner end projecting into said additional opening in the outer wall of the support bracket, and said lever presenting a portion at said opposite side of its pivot at said additional opening in the outer wall of the support bracket for engagement by the inner end of the plunger when the plunger is pushed inward to pivot the lever against the bias of said leaf spring and move said first-mentioned portion of the lever away from said opening in the inner panel of the door.

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