My present invention relates to improvements in apparatus for illuminating ovens or the like.

An object of the invention is to provide an oven lighting device of novel and efficient design and sturdy and simple construction.

A further object is the provision of an oven light unit and housing so mounted according to the invention as to be readily accessible and readily removable at all times.

Other objects will appear hereinafter.

The invention consists in the features and combination of parts as described and as particularly set forth in the appended claims.

In the drawings...

Figure 1 is a vertical sectional view through an oven embodying the invention, with portions of the oven broken away.

Fig. 2 is a similar view with the parts shown in another position.

Fig. 3 is a similar view showing the parts in another position of adjustment.

Fig. 4 is a view of the light unit and associated structure from the interior of the oven looking toward the back wall of the oven.

Fig. 5 is a partial side elevation of the unit comprising the light housing and switch mechanism.

Fig. 6 is a fragmentary rear view of the same.

Fig. 7 is a sectional plan view of the light housing.

Referring to the drawings...

Also secured to the cover plate 2 is a switch operating assembly unit comprising a tubular housing or T member 5 having a flanged base 5a engaging the plate 2 and secured thereto, and to the light socket 1 and the flange 4 of the socket 5 by screws 6 extending therethrough.

Within the vertical passage of the housing or T 5 is mounted vertically reciprocating switch plunger 7 and the barrel or collar 8 which slideably receives the plunger 7, and in which is positioned the spring 9 engaging a shoulder on the plunger and urging it upwardly.

At its lower end the plunger 7 carries a contact member 7a, and is so positioned in respect to contact points 10 and 11 as to engage them when the plunger is moved to its upper position by the spring 9, and to disengage them when the plunger is moved downwardly against the action of the spring, to turn off the light.

Means for depressing the plunger 7 to turn off the light are provided in the transverse passage of the housing or T member 5, and comprise opposed shaft members 12 and 13, the former operable by the door controlled rod 14 which extends through the oven from front to rear and the latter being manually operable.

The adjacent ends of the plunger 7, and the shafts 12 and 13, are so shaped, as by being substantially conical as shown, that movement of the shafts against the end of the plunger will depress the same.

As indicated in Fig. 1, the shaft member 12 is of such diameter, conical taper of its end, and length of stroke actuated by rod 14, that it will engage and depress the plunger 7, but its straight non-tapered surface will not ride upon the extreme end of the plunger, and as soon as the rod 14 is released by opening of the door 15, the spring 9 will force the plunger 7 up, which, by reason of the tapered ends, will also move the shaft 12 and rod 14 laterally, as well as making contact for the electric lamp, as shown in Fig. 2.

The member 12 provides in effect a separable part of the actuating rod 14. The inward movement of the member 12 is positively limited by the head 12a thereof, so that under no conditions can the straight side of the member 12 ride upon the extreme end of the plunger 7.

The manually operable shaft member 13, however, is of smaller diameter than shaft member 12, and is designed when pushed in to depress the plunger 7 until its straight non-tapered surface rides over and crosses the end of the plunger and remains in this position until pushed back, as by the rod and shaft 12 on the closing of the door 15, as will be apparent from Figs. 1 and 3 of the drawings.

The shaft member 13 is intended to be used as a means of breaking the contact points to shut off the light when the oven door is required to be open for an indefinite period of time, and if the light is not needed. This is only pushed in manually when the door is to remain open for an extended period and the light is not desired. When the oven door is again closed, the rod 14 moves inward pushing shaft 12 along with it, thereby forcing shaft 13 off the end of the plunger 7, and bringing the tapered end of shaft member 12 into contact with the tapered end of plunger or switch button 7 to maintain the same depressed against the action of spring 9 with the light off until the door is again opened.

The end of the switch button or plunger 7 is preferably flattened, as indicated.

The proper distance of movement of rod 14 and shaft 12 is controlled by shoulders 16 and 17.

18 Claims. (Cl. 240—5)
1. coming into contact with the bottom of the screw tap 18 and the back of the outside of the oven lining 19, respectively.

2. Rod 14 is held in proper position for operation of the switch by means of shoulder screws 20 and 21 and an embossing 22 provides a recess to allow the head 23 of the rod to recede sufficiently to become flush with the surface against which the bottom of the oven lining is pressed in closed position. Preferably the rod is disposed between the oven inside lining 24 and the outside lining 25.

3. According to the invention, the light is disposed in a chamber or compartment 26, so mounted that the light is located entirely outside of the oven, except that there can be no interference between the light means and the use of the oven which may be of any type employing any kind of fuel.

4. The box or chamber body 26, excepting the cover plate 2, which, together with the attached switch and lamp, is removable as a unit, is inserted from the inside of the oven through an opening in the rear oven wall as shown. The front open side of the box 26 is closed by placing thereon over a frame 26a holding glass 27 between it and projections on the lateral side walls of the box, which may be provided by strips 28 as shown. Screws 29 may be used extending through the sides of the frame and walls. A flange 30 on the frame engages the inner oven lining around the opening and retains the light box in place by means of screws, as indicated at 31. As shown at 32, the edge of the frame is preferably turned in providing a bezel to engage the glass.

5. The top of the box 26 is provided with a wall 33 which covers that portion of the box which is to be disposed within the outer oven wall, and the top wall 33 may be turned down at its outer edge as shown at 34. This edge is met by the inner edge of the removable cover plate 2 which on its other three edges is provided with a depending flange 20 to fit over the box body and which flange is noted at 20 to engage clamp screws 36 in the box walls which hold the plate and the lamp and switch assembly in place, as shown in Fig. 5. The back wall of the box 25 is recessed at the upper edge, as shown at 34 in Fig. 6, to provide an opening when the plate 2 is in place for the light cord 35 to pass through.

6. In case the electric light bulb should burn out, or access to the box, or to the light and switch assembly, be desired, provision is thus made for the ready removal of the cover plate to which the bulb socket and switch housing are attached.

7. Since the cord 35 rests in the vertical slot or recess 34 in the casing 26, the entire switch, socket, bulb and cord assembly is readily removable entirely and as a unit away from the casing 26 without disturbing any other part of the apparatus.

8. Louvers 36 and holes 37 may preferably be provided as a means for air circulation.

9. Suitable insulating material, such as rock wool, may be employed in the oven wall space and the lamp box 26 holds the insulation in place at the opening in the wall which receives the box.

10. I claim:

1. In combination with walls forming a chamber for an oven or the like and including a door, a switch plunger for controlling said lighting means, separate operating members for said plunger, means for actuating one of said operating members by each closing of the door, the other of said operating members being manually operable when the door is open, said switch plunger being spring pressed to close the switch, a T-shaped housing having a passage to receive said plunger and a passage transverse to said first mentioned passage, said second operating members comprising aligned shafts slidably disposed in said transverse passage, one on either side of said plunger, said plunger having a taper at its upper end, said shafts being independently slideable and each having a substantially tapered end surface which when moved toward the plunger engages the taper on the end of the plunger to move the plunger to open the switch, said actuating means comprising a slideable rod aligning with and engaging said one of said aligned operating shaft members, said parts being so constructed that the manually operable shaft member when operated will slide over the extreme end of the plunger to lock the same in moved position and the said one of said shaft members will not slide over the extreme end of the plunger when operated, and on the opening of the door will be pushed back by the spring-pressed plunger, said one of said shaft members in closing of the door being actuated by said rod to engage the end of said manually operable shaft member when in locked position and to push against and retract the same.

2. Apparatus according to claim 1 in which shoulders and heads are provided on said operating shaft members to limit their movement in either direction.

3. Apparatus according to claim 1 in which said operating shaft members are of different diameters providing tapered contacting surfaces of different extent.

4. Apparatus according to claim 1 in which a stop is provided on said one of said shaft members to limit its movement toward the plunger so that it cannot slide over the extreme end of the plunger.

5. Apparatus according to claim 1 in which the extreme end of said plunger is flattened to provide a surface to engage the side of the manually operable shaft member.

6. In combination, walls forming a chamber for an oven or the like and including a door, a lamp housing disposed exteriorly of said chamber at an opening in a wall, said housing having a removable wall portion, and a lamp and lamp socket and switch mechanism secured to said wall portion, and removable as a unit therewith from contact with other parts of the apparatus, and means actuated by said door and normally in position for engagement with said switch mechanism, said lamp housing apart from said removable wall portion comprising back, side, bottom, and top wall portions, and a translucent front wall held in place by a flanged frame fitting over the front end of the housing and secured thereto by suitable means, this entire assembly being insertable and removable as a unit through the opening in the chamber wall from the inside of the chamber and secured thereto by screws or the like.

7. In combination, walls forming a chamber for an oven or the like and including a door, a lamp housing disposed exteriorly of said chamber at an opening in a wall, said housing having a removable wall portion, and a lamp and lamp socket and switch mechanism secured to said wall portion, and removable as a unit therewith from contact with other parts of the apparatus, and means actuated by said door and normally in position for engagement with said switch mechanism, said lamp socket and lamp being mounted inside said removable wall portion, and...
said switch mechanism extending through and being disposed outside said wall portion, and said door actuated means comprising a slidable rod mounted within said chamber and having free ends one for engagement by the door member for engaging said switch mechanism, said removable wall portion having a depending flange to fit over the housing and notches in said flange, thumb screws in walls of the housing to receive said notches to clamp the wall of said housing having a notched opening therein for passage and ready removal of the lamp cord.

8. In combination in mechanism for lighting an oven or the like closed by a door, a lamp, a switch controlling said lamp, means for closing said switch to energize said lamp when the oven door is opened, means operated by the closing of the oven door for opening said switch to put out the lamp when the oven door is closed, a hand operated device disposed to positively move said switch to open position to put out said lamp when the door is open, said hand operated means being also disposed to be directly engaged by and positive tively moved to idle position by the said door operated means as a consequence of the closing of the door, said door operated means assuming control of said switch as the hand operated device relinquish its control.

9. In combination in an electric switch mechanism a switch member for opening and closing an electric circuit, a sliding rod having an inclined face for operating said member to open the circuit, when pressure is applied to said rod, spring means for operating said switch member to close the circuit when said rod is relieved, and a manually operable rod also having an inclined end for operating said switch member for opening the circuit, said manually operable rod holding the member in its circuit breaking position, said sliding and manually operable rods being axially in line with each other, said sliding rod when operated to move said member to circuit breaking position contacting and restoring the manually operable rod to idle position.

10. A switch according to claim 9 in which the manually operable rod has sufficient movement to bring a holding surface thereon in contact with said member after its inclined portion has moved said member to circuit opening position, said circuit closing switch member reacting on the manually operable rod to retain it in operated position until restored to idle position by the pressure on said sliding rod, substantially as described.

11. In combination in an electric switch, a circuit closer having a tapered end, a spring for operating said circuit closer to close the circuit, a rod movable in a direction transverse to the line of movement of the circuit closer and having a tapered end to engage the tapered end of the circuit closer, means for operating said rod to move the circuit closer to open said circuit, a manually operable member having a tapered end engageable with the tapered end of the circuit closer for operating the same to open the circuit, said manually operable member being operable to a position to bring a portion thereof in position to hold the circuit closer to maintain the circuit open, said manually operable member being operable to idle position by the setting of the rod into position for holding the switch member in position to open the circuit, substantially as described.

12. In combination with walls forming a chamber for an oven or the like and including a door and lighting means for said chamber, a switch plunger for controlling said lighting means, separate operating members for said plunger extending in alignment transversely of the plunger and disposed on opposite sides thereof, said slidable members being independently movable and each being constructed to move the plunger when moved toward the same means for actuating one of said operating members by each closing of the door, the other of said operating members being manually operable when the door is open, said manual operating member being engageable by said one operating member upon actuation of the latter to retract the manual member from operated position.

13. Apparatus according to claim 12 in which said switch plunger is spring pressed to close the switch, a T-shaped housing having a passage to receive said plunger, and a passage transverse to said first mentioned passage, said separate operating members comprising aligned shafts disposed in said transverse passage one on either side of the plunger.

14. Apparatus according to claim 12 in which said separate operating members comprise aligned shafts extending transversely of the plunger, means for actuating one of said operating shaft members by the closing of the door, comprising a slide rod in alignment with said slidable shaft members, and positioned for actuating engagement with said one of said operating shaft members.

15. Apparatus according to claim 12 including means whereby the manually operable member is adapted to slide across the extreme end of the plunger to lock the same in moved position until said shaft member is positively retracted, and means whereby said one of said shaft members is prevented from sliding over the extreme end of the plunger.

16. Apparatus according to claim 12 in which said separate operating members comprise aligned slidable shafts extending transversely of the plunger and disposed on opposite sides thereof, said slidable shafts being independently movable, the manually operable shaft member being constructed to move against said plunger and to slide over the extreme end thereof and to lock the same in moved position, and means whereby the said one of said operating shaft members is prevented from sliding over the extreme end of the plunger, the said one of said shaft members upon actuation engaging and retracting the manually operable shaft member when the latter is in locking position.

17. In combination, a switch member for operating and closing a circuit, a sliding member for operating said switch member, a manually operable member for operating said switch member, said sliding and manually operable members being axially in line and extending in a direction transverse to the line of movement of said switch member and disposed on opposite sides thereof, said manually operable member being engageable by said sliding member upon operation of the latter to retract the manual member from operated position.

18. A switch mechanism for a lighting means for an oven or the like comprising a switch plunger for controlling the lighting means, said switch plunger having a tapered end, separate operating members for said switch plunger disposed on opposite sides thereof and having ta-
pered ends to engage the tapered end of the plunger to move the plunger to open the switch, said switch plunger being spring pressed to close the switch, a slidable rod for actuating one of said operating members by each closing of the oven door, the other of said operating members being manually operable when the door is open, said separate operating members being in alignment and said one of said operating members being constructed to be actuated by the closing of the door to engage and retract the said manually operable member after the latter has been manually actuated to depress the plunger.

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