

UNITED STATES PATENT OFFICE.

JAMES I. AYER, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO THE SIMPLEX ELECTRICAL COMPANY, OF BOSTON, MASSACHUSETTS.

ELECTRIC HEATER AND CIRCUIT-CONTROLLER THEREFOR.

SPECIFICATION forming part of Letters Patent No. 664,371, dated December 25, 1900.

Application filed May 20, 1899. Serial No. 717,535. (No model.)

To all whom it may concern:

Be it known that I, JAMES I. AYER, a citizen of the United States of America, and a resident of Malden, county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in Electric Heaters and Circuit-Controllers Therefor, of which the following is a specification.

The object of this invention is to provide a circuit-controller for electric heaters which shall without conscious effort or thought on the part of the user prevent the wasteful use of electric current and secure immediate results whenever the heating apparatus is desired for use.

This circuit-controlling device may be applied to any electrical heater which is adapted to heat an object placed in or upon it. For convenience one of the small electric heaters adapted to heat a curling-iron is shown in the adjoining figures, wherein—

Figure 1 is a longitudinal section of the heater and its switch-controller. Fig. 2 is an end view thereof. Fig. 3 is a sectional end view of the heater, showing its switch-controlling gate depressed.

The heater-casing is shown at A, which contains the heating-coil a' and its protecting-insulator a . The ends $b b^2$ of the heater-casing are supported upon legs $b' b^3$. The leading-in wires e have their electrical continuity broken at the binding-posts p , to which are attached contact-springs d , which are themselves electrically separated. The switch-controller is here shown as a lever L, pivoted at c and normally urged upward by a spring s . This lever L constitutes the circuit-closer carrier. The circuit-closer itself is shown as a pin g , attached to a block or plate g' , which is in turn secured to the under side of the lever L. The lever L terminates in or is jointed to a plate l . The entire apparatus is suitably mounted upon a base B.

The gate joined to the lever L is so proportioned and situated that when the lever L is urged to its normal position by the spring s the aperture b^5 , through which an object must be passed in order to be introduced into the oven-like interior of the heater-chamber, is wholly or partially closed by the gate. This is the normal open-circuit position of the

lever L, the circuit-closer g being shown, as in Fig. 1, raised from between the contact-springs d . If now it is desired to insert an object into the chamber of the heater to be heated, it is necessary to open the gate l , which bars the oven-opening b^5 . Then when an object to be heated—as, for instance, a curling-iron—is inserted through the opening l^2 in the gate l , Fig. 1, it retains the gate and circuit closing connections in the position of circuit-closure. This gate, which coöperates with the object to be inserted into the heater, consists of an upright plate l , passing through slots $a^2 a^3 a^4 a^5$ in the heater and its casing. The gate l is shown in Fig. 3 in its open or depressed position, which corresponds to the dotted-line position shown in Fig. 1. The end l^3 of this plate, Fig. 1, is bent to form a surface or handle to assist in depressing the lever by hand.

l^2 is an aperture in the plate, through which the object to be heated is inserted when the lever is depressed.

In the apparatus shown the insertion of the object to be heated either itself actuates the circuit-closing devices or those devices must be first actuated before free passage to the interior of the heater is afforded. The withdrawal of the heated object releases the circuit-controlling devices, which return automatically to position of open circuit.

What I claim, and desire to secure by Letters Patent, is—

1. In an electric heating device, a heating-chamber with an opening therein for the reception of an article to be heated, a gate located at the opening and adapted to close the same, a heating-circuit, a switch controlling the circuit, said switch connected with the gate, and means whereby the switch and its connected gate are normally held in a position of open circuit, the said gate being so disposed with respect to the opening in the heating-chamber that it must be displaced therefrom to permit the introduction of an article to be heated, such displacement moving the gate and switch-arm to position of circuit-closure.

2. In an electric heating device, a heating-chamber having an opening therein, a support therefor, heating-resistances disposed about

the sides of the chamber, a switch controlling
circuit-closure of the resistances, a switch-le-
ver pivoted to the chamber-support, carrying
a circuit-closing blade, a spring attached to
5 the switch-lever and normally urging the same
to a position of open circuit, slots in the cham-
ber-walls, a gate passing through said slots
and attached to the lever, an opening in the
gate so located that the opening in the gate
10 and the opening in the chamber coincide when

the gate and lever attached are moved to a
position of circuit-closure, substantially as de-
scribed.

Signed by me at Boston, Massachusetts,
this 11th day of May, 1899.

JAS. I. AYER.

Witnesses:

E. F. GROLL,

S. G. O. SWANSON.