Feb. 8, 1944. E. CHALLET 2,341,017

ELECTRIC BOILING APPARATUS

Filed Oct. 31, 1940

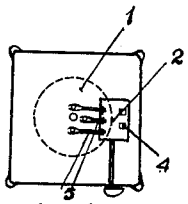


Fig. 1

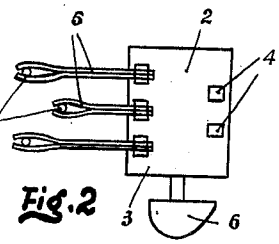


Fig. 2

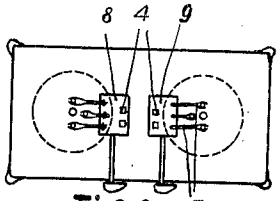


Fig. 3

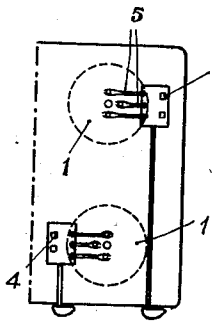


Fig. 4

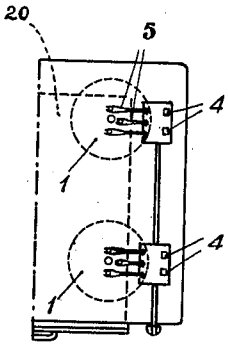


Fig. 5

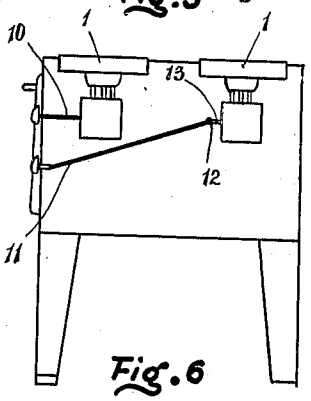


Fig. 6

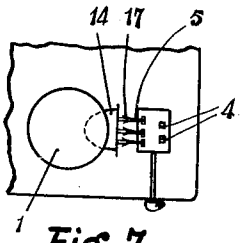


Fig. 7

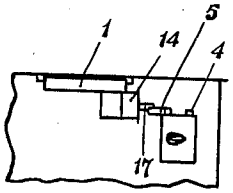


Fig. 8

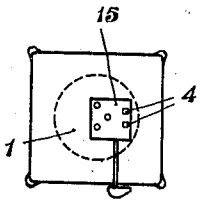


Fig. 9

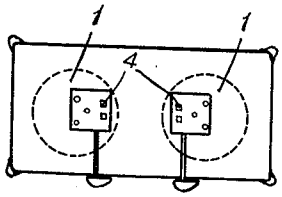


Fig. 11

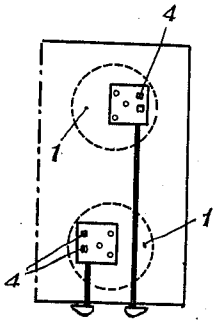


Fig. 12

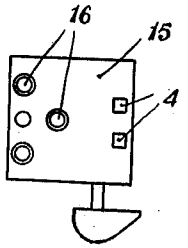


Fig. 10

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Patented Feb. 8, 1944

2,341,017

UNITED STATES PATENT OFFICE

2,341,017

ELECTRIC BOILING APPARATUS

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Application October 31, 1940, Serial No. 363,769
In Switzerland September 12, 1940

3 Claims. (Cl. 219—37)

This invention relates to new and useful improvements in electric boiling apparatus having at least one heating plate provided with a contact plug, and a regulating switch for the control of the current supplied to said plate.

In known apparatus of this type, the regulating switch, whatever its position on the apparatus, is always provided with inlet terminals as well as with outlet terminals, the latter being connected to cables leading to the contacts of a plug socket disposed in proximity to the heating plate and adapted to engage the contacts of the plug of said plate. There are usually provided three such connection cables which are found to be objectionable because of the difficulties encountered with their proper laying below the heating plate.

It is an object of the invention to provide a boiling apparatus which will have a regulating switch placed in close proximity to the heating plate with which it is associated.

Another object of the invention is to provide for each heating plate a regulating switch which affords contact means adapted to engage directly the contacts of the plug of said plate.

With the aforesaid objects in view it will be possible to eliminate the usual connection cables between the regulating switch and the plug socket as well as said socket, the outlet terminals of the switch forming also the contact means adapted to receive the plug contacts of the heating plate. This elimination not only realises an economy of material but it also obviates an important disadvantage of the known arrangement which is due to the fact that the plug socket usually placed in an excessively hot zone is subjected to dilatation which often causes a relaxing of the screw means of the contacting members and, hence, a deterioration of contact which is of great inconvenience, in particular, in cases of heavy power plates generally exceeding one kilowatt.

The accompanying drawing represents, by way of example, various embodiments of the invention.

Fig. 1 is a plan view of a first embodiment and Figure 2 shows the main part thereof drawn on a larger scale.

Figures 3 and 4 are plan views of a second and third embodiment, respectively.

Figure 5 is a plan view and Figure 6 a side elevation of a fourth embodiment.

Figures 7 and 8 are similar views of a fifth embodiment.

Figure 9 is a plan view of a sixth embodiment, and Figure 10 shows the main part thereof drawn on a larger scale.

Figures 11 and 12 are plan views showing two further embodiments.

In Figures 1 and 2 is illustrated a table boiling apparatus comprising but a single heating plate which is denoted by 1. The numeral 2 designates the regulating switch provided for the control of the electric current supplied to the heating plate. The said switch, which is shown on a larger scale in Figure 2, may be of the usual type and, therefore, need not be described in detail herein. It comprises an insulating base 3, two terminals 4 to which are connected the conductors of the current supply, three elastic clamps 5, and a rotatable operating member 6 controlling for instance an insulating drum disposed within the base 3 and provided with conductor bands adapted to resiliently connect the terminals 4 to the clamps 5 or separate said terminals from said clamps. The heating plate 1 has in the center of its lower face the usual contact plug terminating in three fingers 7 each of which being adapted to penetrate into one of the clamps 5. While in the present instance, the switch and heating plate have been shown carrying each three contacts for the electric connection, yet if desired a fourth clamp may be provided on the switch for engaging an earth contact on the heating plate.

As clearly shown in the figures, the switch is disposed in close proximity to the heating plate and, owing to its clamps 5, serves also as plug socket. Thus it will be possible to eliminate the three cables which are generally disposed between the switch and the plug socket, as well as the three terminals of said switch and the three terminals of said plug socket which otherwise would be necessary to have said cable fixed to the switch and socket, respectively.

Figure 3 shows a table boiling apparatus having two heating plates and two regulating switches 8 and 9 associated with said plates, respectively, and disposed symmetrically as to the transverse axis of the apparatus.

Figure 4 shows one half of a boiling apparatus having four heating plates and wherein the ends of the operating members of the four corresponding switches are disposed alongside the front face of the apparatus.

Figures 5 and 6 show one half of a boiling apparatus having four heating plates and an oven 20. The heating plates are disposed in pairs above the two lateral sides of the oven, and the bases of the corresponding regulating switches as well as the operating members 10 and 11 of

said switches are arranged outside the horizontal contour of said furnace and are, thus, not exposed directly to the heat of the latter. As clearly shown in Figure 6, the operating members 10 and 11 are arranged one above the other, the inclined shaft of the member 11 being connected by means of a ball and socket joint 12 to the horizontal axle 13 of the drum of the switch.

In the preceding examples the heating plates are all provided with a contact plug which is in the center of the lower face of the plate. In the embodiment illustrated in Figures 7 and 8, the contact plug 14 is disposed below the plate on one side of the same and cooperates with a regulating switch similar in construction to the switches of the preceding examples; the said plug presents conductor blades designated by 17 and adapted to penetrate into and contact with clamps 5 of the switch.

The embodiment of Figures 9 and 10 comprises a table boiling apparatus having a sole heating plate which cooperates with a regulating switch 15 distinguished from that shown in the preceding examples by the feature that it has three bushes 16 instead of clamps, said bushes being adapted to engage the fingers of the contact plug of the heating plate.

The embodiment of Figure 11 comprises a table boiling apparatus having two heating plates and incorporating the switches already shown and described in the example of Figures 9 and 10. Similarly, Figure 12 shows the half of a boiling apparatus having four heating plates and using the same switches as illustrated in Figures 9 and 10. Both said embodiments are distinguished by the feature that the operating members of the switches are shown arranged on the boiling apparatus.

From the foregoing, it is believed that the construction and advantages of the present invention may be readily understood by those skilled in the art without further description, it being borne in mind that numerous changes may be made in the details disclosed without departing from the spirit of the invention as set out in the following claims.

What is claimed and desired to be secured by Letters Patent is:

1. In an electric cooking apparatus comprising a frame with at least two removable heating plates and one oven, in combination, at least two control switches mounted permanently in said frame, out of, but close to said removable heating plates, said switches comprising an insulating housing shielding their supply leads and terminals from stray heat and carrying elastic contact means arranged to engage the plugs of the removable heating plates when the latter are placed on the frame, at least two knobs relatively mounted one above the other on the outside of said frame, and two linking devices between said switches and said knobs, the whole in order to avoid intermediate leads and terminals which would be exposed to stray heat from the heating plates, and to permit removing the latter without disconnecting the supply leads.

2. Electric cooking apparatus having in combination a range or frame, an oven in said frame, at least two regulating switches fixedly mounted in said frame above said oven and having each, on the one hand, an insulating base and an operating button outside the horizontal contour of said oven and, on the other hand, elastic contact means, and at least one pair of heating plates disposed on the top of said frame above one lateral side of said oven and removably carried by said switches, each of said heating plates being provided at its underside with a centrally disposed vertical plug adapted to be resiliently engaged by the contact means of one of said switches when said plate is placed upon said frame and switch.

3. Electric cooking apparatus according to claim 2, wherein the operating buttons of said switches are mounted one above the other.

ETIENNE CHALLET.