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A. LOHE

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SWITCH

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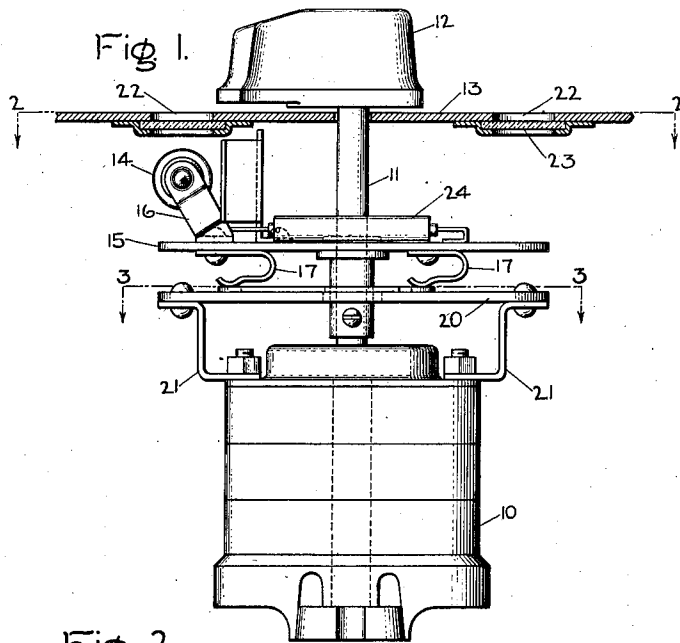


Fig. 2.

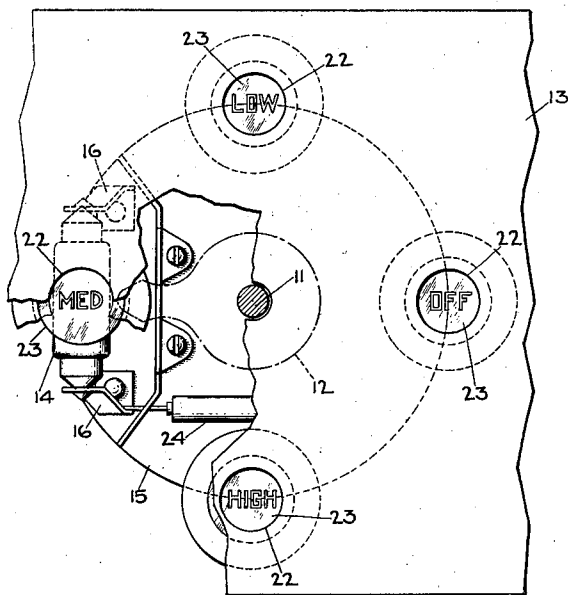
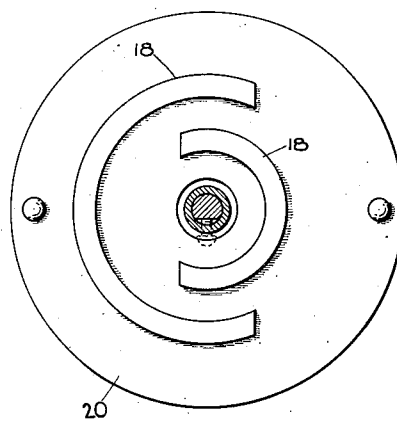


Fig. 3.



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# UNITED STATES PATENT OFFICE

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## SWITCH

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1 Claim. (Cl. 200—167)

This invention relates to switches, more particularly to multi-position switches, and it has for its object the provision of an improved device of this character.

In electric ranges and like heating appliances, a multi-position switch is usually provided to control the heating elements so as to provide various degrees of heat. For example, it is common to provide each of the surface heating units of a range with a controlling switch which is selectively movable to controlling positions to provide, high, low and medium heats. In an arrangement of this kind the switch usually has four controlling positions, namely, an "off" position, a "high" position, a "medium" position and a "low" position, the last three of these denoting the high, low and medium heat positions respectively. Some inconvenience has been experienced because of the fact that it is somewhat difficult for the attendant when at some distance from the range to know just what controlling position the switch is in.

This invention contemplates the provision of an improved signal arrangement in a switch whereby the attendant can readily perceive the controlling condition of the switch.

In accordance with this invention, a suitable indicating device, such as an incandescent lamp, is connected with the controlling element of the switch so as to be moved with it when it is moved to its respective controlling position. In other words, the position of the lamp is changed when the switch is operated from one to another controlling position. Preferably, a suitable cover will be provided for the switch in which is provided a plurality of windows which are positioned opposite the positions assumed by the lamp corresponding to the controlling positions of the switch. These windows may be covered with glass panes which preferably will be provided with suitable indications or markings denoting the controlling positions of the switch.

For a more complete understanding of this invention, reference should be had to the accompanying drawing in which Fig. 1 is a switch intended to be used with an electric range and like heating appliance arranged in accordance with this invention; Fig. 2 is a plan view of the switch of Fig. 1, with portions removed and other portions broken away so as to illustrate certain details of construction; and Fig. 3 is an illustration of a detail of construction of one means for controlling the energization of the indicating lamp.

Referring to the drawing, this invention has been shown in one form as applied to a multi-po-

sition switch intended to control heating circuits in an electric range. The switch 10 comprises movable contact members (not shown) operated by a shaft 11, and fixed contacts (not shown) cooperating with the movable contacts. The details of construction of the contacts have not been shown because they form no part of this invention. It will be understood, however, that the movable contacts will be carried upon the shaft 11 in such a manner that they will engage the fixed contacts so as to control the associated controlled heating elements of the range to generate different degrees of heat, such as high, low and medium heats.

The switch 10 is provided with a suitable control knob 12 secured to the shaft 11 whereby the shaft can be conveniently moved to its various controlling positions. In the particular switch shown, the switch has four controlling positions, an "off" position, a "high" heat position, a "medium" heat position and a "low" heat position.

A suitable covering 13 is provided for the switch. This covering may be made of any suitable material, but preferably will be made of an insulating material.

A suitable incandescent lamp 14 is arranged to denote the controlling positions of the control member 11.

This lamp, as shown, is mounted upon a suitable supporting member 15 which in turn is rigidly secured to shaft 11 so as to be moved with the shaft when the shaft is moved to its controlling positions. Preferably, the support 15 will be formed of a suitable electrically insulating material. As shown, the lamp is supported by means of suitable brackets 16 on the support 15. These brackets also serve as terminals for the lamp, and, therefore, will be formed of any suitable electrically conducting material.

Current is supplied to the two poles of the lamp 14 by means of a pair of contacts 17 rigidly secured to the under side of the plate 15. It will be understood that these two contacts will be connected to the two terminal members 16 respectively. The contacts 17 engage two arc or circular shaped contact members 18 respectively which are mounted upon a supporting member 20. This member preferably will be formed of a suitable electrically insulating material. The support 20 is mounted upon brackets 21 fastened to the switch 10, as shown. The contact members 18 are connected to their source of electrical supply in any suitable manner which forms no part of this invention. For example, conductors connected with the electrical supply source may

be connected with the contact members 18 by means of binding posts (not shown) directed downwardly from the contact members through the support 20 to the under-side thereof where the electrical connections are made.

5 It will be observed in view of the foregoing construction that when the switch knob 12 is turned so as to move the switch control member 11 to a new controlling position, the support 15  
10 will be turned with it so that the lamp 14 will be moved to a new indicating position. Thus, for each controlling position of the control member 12 there is a corresponding indicating position of the lamp 14.

15 Preferably, suitable openings or windows 22 will be provided in the cover member 13 opposite the indicating positions of the lamp 14. The lamp, it will be observed, is therefore visible to the attendant in each of its indicating positions.  
20 The openings 22 may be differentiated one from the other by means of suitable indications, such as for "Off", "High", "Medium", and "Low". As shown in Figs. 1 and 2, the openings are closed by suitable glass panes 23 which if desired may  
25 be colored. The indications denoting the controlling positions of the control member may be applied directly to these window panes; as shown in Fig. 2, the words "Off", "High", "Medium", and "Low" have been applied.

30 The contact members 18 may be so arranged that the lamp 14 will be energized in each one of the controlling positions of the knob 12 including the "off" position, but in order to economize current, it is preferable that they be arranged so  
35 that the lamp is deenergized when the lamp is in the "off" position.

Current may also be economized by providing a suitable glimmer lamp instead of the lamp 14, and may be further economized by introducing

a resistance 24 in the electrical circuit between one terminal of the lamp 14 and one of the contacts 17, as clearly shown in Figs. 1 and 2.

It will be understood, of course, that the contacts 17 and 18 may be interchanged. That is, the contacts 17 may be supported upon the fixed plate 20, while the contacts 18 may be supported on the movable plate 15.

While I have shown a particular embodiment of my invention, it will be understood, of course, that I do not wish to be limited thereto since many modifications may be made, and I, therefore, contemplate by the appended claim to cover any such modifications as fall within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

Switching means for electric ranges and the like comprising a control shaft movable to a plurality of controlling positions, a knob for operating said shaft, a fixed support, a switching mechanism on said support connected to said shaft to be operated thereby, an insulating support adjacent said fixed support mounted on said shaft so as to move with it as the position of said shaft is changed to move to a new controlling position, an incandescent lamp on said insulating support movable with it to indicating positions corresponding to the controlling positions of said shaft, a cover for said switch provided with windows opposite the indicating positions of said lamp, contacts for said lamp secured to said movable support, contacts of arc shape on said fixed support engaging said contacts on said movable support and arranged so that said last-named contacts engage them continuously to continuously energize said lamp when said control member is removed from its off position.

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