Nov. 12, 1929. J. W. LAYMAN 1,735,614

HEAT CONTROLLED ELECTRIC SWITCH

Filed April 2, 1927

Fig. 1.

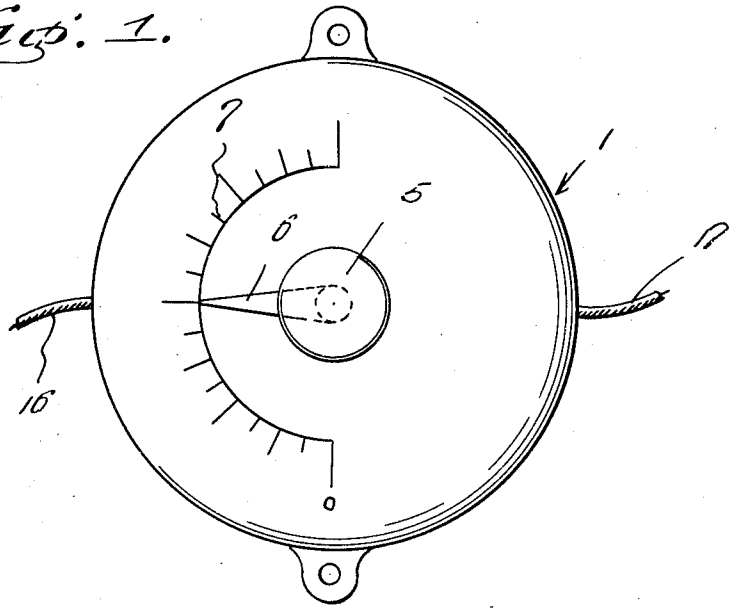
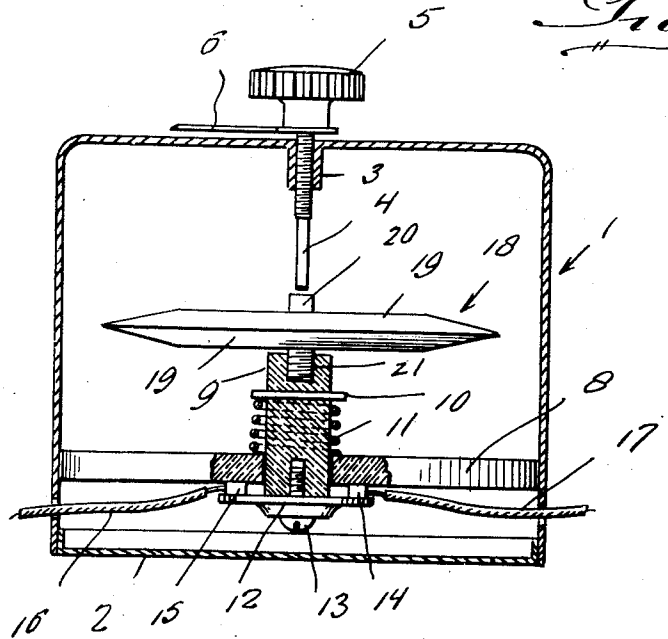


Fig. 2.



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HEAT-CONTROLLED ELECTRIC SWITCH

Application filed April 2, 1927. Serial No. 180,487.

The present invention relates to a structure which may be appropriately and broadly defined as a heat-controlled electric switch, and it has more particular reference to a device of this character which is such in construction as to permit it to be employed in conjunction with electric appliances such as for example, electric irons, cook stoves, and heaters.

More specifically, the invention has reference to a manually adjustable automatically operable switch such as may be properly associated with appliances of the character referred to for regulating the temperature of such appliances. For example, it may be employed to advantage in an electric iron to prevent scorching of certain kinds of materials. It may be employed in a cook stove, principally in the oven to prevent burning of food, such as bread, cake, pies, etc.

It may be employed in a domestic heater maintaining a desirable temperature.

In carrying out the invention I have produced a novel structural arrangement of parts which is believed to be capable of accomplishing the desired result in an efficient and expeditious manner, and the particular organization of these, as well as their meritorious cooperation, will become more readily apparent from the following description and drawings.

In the accompanying drawings:

Fig. 1 is a top plan view of the device.

Fig. 2 is a vertical section through the same with parts shown in elevation.

Referring now to the drawings in detail, it will be seen that the reference character 1 designates a substantially cup-shaped casing which is open at its bottom to receive a suitable closing plate 2. Formed at the center of the top of this casing is an internal screw-threaded neck 3 through which the screw-threaded portion of an adjustable stop element 4 is threaded. On the upwardly extending end of this element is a finger knob 5 of suitable construction. Associated with this and carried by the element 4 is a pointer 6 adapted to cooperate with graduations 7 on a dial formed on top of the casing.

Noting now the interior of the casing, it will be seen that a disk-like partition 8, of insulation material is suitably supported therein at a point spaced above the closure 2. This partition is formed with a central opening. A plunger 9, also of insulation, extends upwardly through this opening and carries a suitable stop flange 10 at its top. In the upper end of this plunger is a screw-threaded socket. Surrounding the plunger between the flanged end and the upper side of the disk 8 is a comparatively light coiled spring 11. It will be noticed that this plunger extends through and beyond the opening in the partition 8. This extending portion carries a copper washer 12 held in place by retaining screw 13. The washer is of a diameter to bridge the space between a pair of contact elements 14 and 15 carried by the under side of the partition. Electricity conductor wires 16 and 17 are fastened to the contacts 15 and 14 respectively. This forms the electric switch.

The reference character 18 designates generally a thermostat, sometimes referred to in the trade as a wafer. Incidently, this is a marketed product and comprises a pair of cupped sections 19 fastened together in a manner to form an air space therebetween. The thermostat may be of any appropriate configuration in outline. Also the portion may be of suitable expansible heat actuated metal. On the upper side and at the center is a stud 20 while on the lower side is a screw threaded connector 21 threaded into the socket on the upper end of plunger 9. The stud 20 is of course, located for cooperation with the adjustable stem or stop element 4.

It is plainly obvious from the foregoing description and drawings that the purpose

of the adjustable stem 4 is to regulate the degree of expansion of the thermostat in order that the switch may be more or less sensitive as occasion demands. For example, by decreasing the space existing between the stud 20 and the lower end of the stem 4, the switch may be made to open comparatively quick. Obviously, when the stud 20 comes into engagement with the stop stem 4, further expansion of the thermostat will move the plunger 9 downwardly against the action of the comparatively light weight spring 11, thus moving the contact washer 12 away from the contact element 14 and 15. This will break the circuit temporarily until the thermostat contracts again whereupon the circuit will be closed. The action of the device can be accurately regulated through the medium of the cooperating pointer 6 and dial 7. Thus, the device can be set to operate at a predetermined temperature.

It is thought that by considering the detailed description in connection with the accompanying drawings, a clear understanding of the construction, association of parts, and method of operation will be had. Therefore, more lengthly description is thought unnecessary.

Minor changes in shape, size and reorganization of parts coming within the field of invention claimed, may be resorted to if desired.

I claim:

1. In a structure of the class described, a hollow casing, a partition mounted in said casing and formed with an opening, electrical contacts mounted on said partition on opposite sides of said opening, a plunger slidable through said opening, a relatively movable contact member carried by said plunger and adapted to bridge said first named contacts, spring means associated with the plunger and partition for maintaining said movable member normally in engagement with said contacts, a thermostat carried by said plunger, a manually adjustable stop member carried by said casing and cooperable with said thermostat, and indicating means carried by said device and located on the exterior of said casing.

2. As a new product of manufacture, a domestic heat controlled switch of the class described comprising a cup shaped casing provided on its closed end with a central opening and an internally screw threaded neck extending inwardly therefrom, a closing plate fitted into the open end of the casing, a manually adjustable stop screw threaded through said neck and provided on its outer end with a finger knob and an indicating pointer, a scale on the exterior of the casing with which said pointer is cooperable, a disc-like partition located in said casing and having a central opening, stationary electric contacts carried by the partition and located on opposite sides of the opening, a spring pressed plunger slidable through the opening in the partition, a removable contact washer carried by the plunger and cooperable with said first named contacts, and an expansible and contractible thermostat interposed between said stop screw and plunger and preferably mounted on the plunger and located for cooperation with said stop screw.

In testimony whereof I affix my signature.

JACKSON W. LAYMAN.