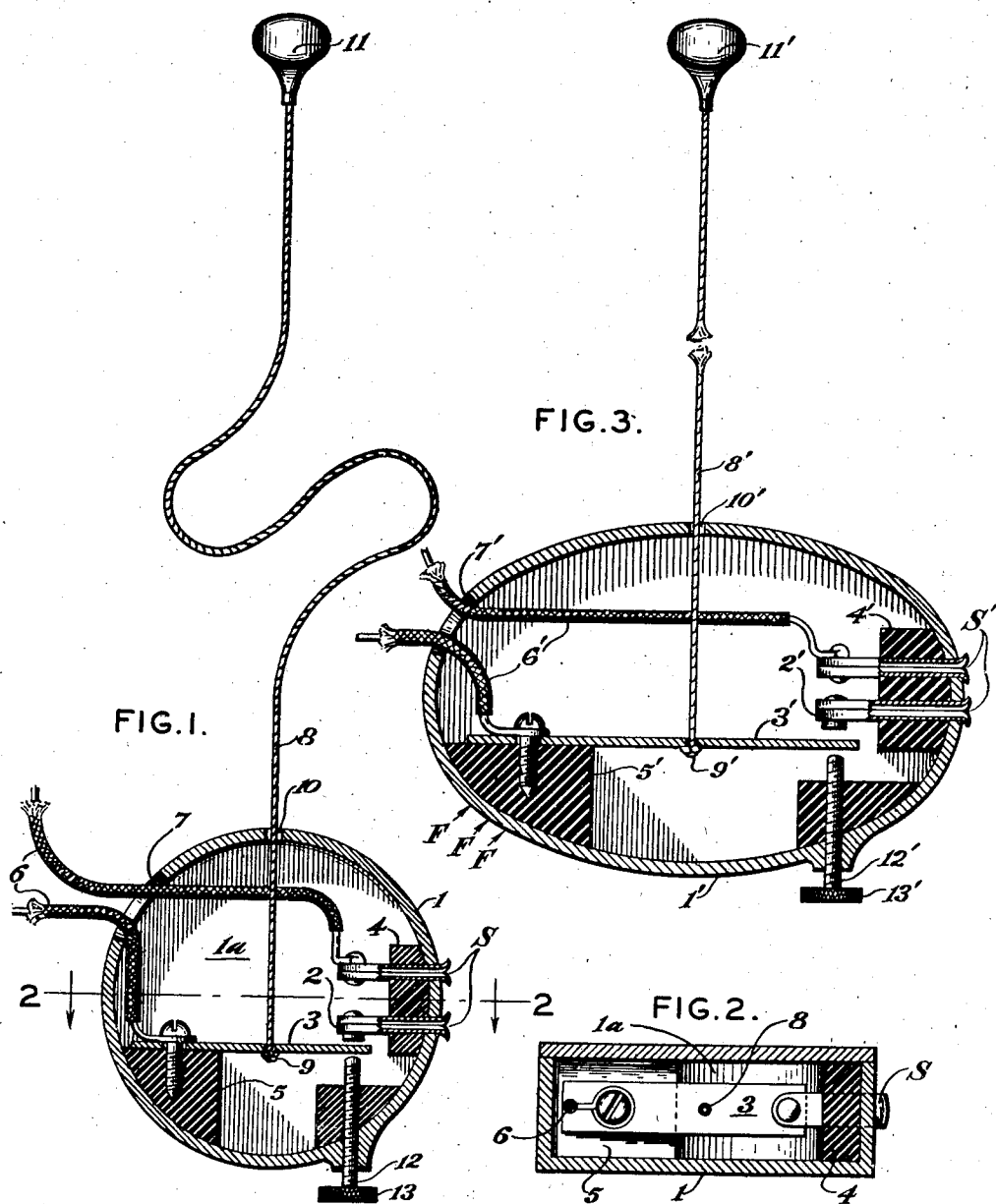


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N. B. BIRGE
SUSPENSION SWITCH
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SUSPENSION SWITCH

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This invention relates to switches, and more particularly to switches actuatable in response to physical relaxation of an operator.

It is a well-known fact that many persons have the habit of reading in bed prior to going to sleep. Frequently, such person desires to use an electrical appliance such as a radio, heater pad or electric fan, etc., while thus engaged. In any event, under such circumstances an electric lamp is almost invariably lit for illumination purposes. Further, it is common for persons who have the aforementioned habit to unwittingly drop off to sleep before switching off whatever electric appliance is in use at the time.

Therefore, it is an object of my invention to provide a switch operable upon relaxation of a person in passing into slumber to automatically interrupt current to any or all electrical appliances in use at the particular time.

It is a further object of my invention to provide a switch device of the character described with a simple, rugged and fool-proof construction.

In the attainment of the above objects, my device comprises a body or shell which may be of metal, plastic, or other suitable material, and which has an internal cavity housing a normally open switch means. Current from a line is brought into the cavity and connected to the switch means which is also connected to a conventional type of female socket supported in the cavity and arranged to be engaged externally by a conventional plug from an electric appliance. The switch means normally provides for an open circuit between the line and the female socket. However, one of the elements of the switch means is of resilient material and has a chain or cord secured thereto, which cord passes outwardly of the body through a port formed in a wall thereof, and extends a suitable distance therefrom so that its terminal point may be held, by means of a suitable knob secured thereto, in the hand of a person who may be assumed to be sitting up in bed.

Accordingly, the entire device hangs at the lower end of the string within a few inches of the floor. The weight of the device is such as to cause a displacement of the resilient switch element to which the string is attached and at which point of attachment the weight of the device may be considered concentrated. A displacement of the resilient switch element is thus effected with relation to another switch element secured within the body cavity, the two switch elements effecting a contact juncture for passing current from the line to an appliance so long as

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the device is suspended at the end of the string. Should, however, the person holding the upper end of the string fall asleep, his grip on the string is relaxed and the device falls to the floor. At this time the resilient switch element to which the string is secured resumes its normal open circuit position and interrupts power to the appliance. A detailed description of my invention will now be given in conjunction with the accompanying drawings in which:

Figure 1 shows a vertical section through one embodiment of my invention;

Figure 2 is a section through 2—2 of Figure 1; and,

Figure 3 is a section through another form of my invention.

With reference to Figures 1 and 2 of the drawings, my device comprises a body or shell 1 of substantially spherical shape and having a cavity 1a therein in which are secured switch elements 2 and 3. Switch element 2 is a contact member which is relatively stationary with respect to body 1, being secured thereto in a block 4 of hard rubber or the like fastened in any suitable manner to the interior of body 1. Switch element 3 is a resilient metallic leaf secured within body 1 as by a hard rubber block 5 suitably fastened to the interior of the cavity. Wires 6 of an electric cable which may be assumed to connect with a plug (not shown) for engaging an electric outlet such as a wall socket or the like, lead into the cavity 1a through a port 7. A conventional socket arrangement "S" connects to wires 6 as shown in Figure 1, and it will be understood that owing to the gap between elements 2 and 3 current from the line to the socket is normally interrupted. A flexible chain or string 8 is secured as by a knot 9 to element 3 and passes outwardly through the body through a port 10, terminating in a pear-shaped knob 11. Knob 11 is shaped so as to fit comfortably and conveniently in the human hand and the length of string 8 is such as to provide suspension of housing 1 a short distance from a floor when a person sitting up in bed is holding knob 11 in his hand. Under these conditions, the weight of housing 1 and the attendant parts are suspended entirely at the point of junction between knot 9 and switch element 3, and it will be understood that this switch element is provided with a flexibility whereat such weight will cause sufficient flexure to close contact with element 2 whereby a closed circuit is provided between the line and whatever appliance may be plugged in at "S." However, if the person using the switch should fall asleep, thereby relaxing his

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grip on knob 11, body 1 will fall to the floor. Switch element 3 then returns to its normal unstressed condition (as shown in Figure 1) to open the circuit to the appliance.

An adjusting knob comprising a threaded shank 12 and a knurled head 13 may be provided in housing 1, so that if desired permanent contact between switch elements 2 and 3 may be obtained in an obvious manner.

With reference to Figure 3, all the elements hereinabove described for the form shown in Figure 1 are illustrated with primed reference characters, and accordingly such elements will not be repetitiously described herein. The distinction between the form shown in Figure 1 and that shown in Figure 3 resides in the shape of housing 1' which is seen to be of oval configuration and may be provided with flat sides as in Figure 2, or have a shape resembling an egg or a football. The purpose of the oval configuration is to relieve the person using the switch of the necessity of supporting the total weight of the device in his hand. As will be clearly understood from the drawing, the device may be partially suspended from the hand while receiving some support from the floor at points indicated by the arrows F. It will be appreciated that the long axis of the body 1' will then be disposed at a slant with respect to the floor; and it is contemplated that the weight of the masses comprising the right-hand side of the body and the elements 4', 5', etc., will be such as to provide sufficient flexure to close contact with element 2'.

I believe that my invention is subject to considerable change in design and variation in detail without departing from the spirit thereof. For example, the body 1 (or 1') may be formed of suitable plastic material and have integrally formed therewith the various elements supporting projections 4, 5, etc. Further, a plurality of sockets S in body 1 could be provided if desired. Suitable fuse devices for protecting against short circuit or overload could be incorporated within the body cavity as a matter of design, if desired.

Accordingly, I do not wish to be limited by the specific embodiments of my invention hereinabove illustrated except as set forth in the appended claims.

Having thus described my invention, I claim:

1. A gravity, suspension, switch comprising a body having a cavity, electrical conductors arranged to conduct current to and from said cavity, electrical conductors in said cavity including electrical contact members, one of said contact members being resilient and normally biased to open position, said body formed with a port in its wall on that side of the resilient contact toward the other contact and a flexible suspension cord connected to the resilient contact and passing through said port, said body with the enclosed switch elements being of sufficient weight to flex the supporting contact member when the device is suspended by the cord.

2. Device of claim 1 with means mounted on the body for flexing and holding the resilient contact in closed contact position.

3. A gravity, suspension, switch comprising a body having a cavity, electrical conductors ar-

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ranged to conduct current to the cavity, a plug-in connection in the wall of the body for connection with other conductors to carry current from the cavity, electrical conductors within the cavity arranged to bridge the electrical conductors first mentioned and the plug-in connection and including contact members forming a normally open gap, one of said contact members being resilient, the body formed with a port arranged in its wall opposed to said resilient contact and a flexible suspension cord secured to the resilient contact and passing through the port, said body with the enclosed switch elements being of sufficient weight to flex the supporting contact member when the device is suspended by the cord.

4. A gravity, suspension, switch comprising a body having a cavity, electrical conductors arranged to conduct current to the cavity, a plug-in connection in the wall of the body for connection with other conductors to carry current from the cavity, electrical conductors within the cavity arranged to bridge the electrical conductors first mentioned and the plug-in connection and including contact members forming a normally open gap, one of said contact members being resilient, the body formed with a port arranged in its wall opposed to said resilient contact and a flexible suspension cord secured to the resilient contact and passing through the port, with means carried by the body operable from the exterior thereof for mechanically flexing the contacts to closed position, said body with the enclosed switch elements being of sufficient weight to flex the supporting contact member when the device is suspended by the cord.

5. A suspension switch comprising a housing for the switch formed with a port, switch means mounted in the housing including a fixed contact and a resilient contact, the fixed contact positioned between the resilient contact and the port, a suspension cord extending through the port and connected to the resilient contact intermediate the mounting of said resilient contact on the housing and the portion adapted to contact the fixed contact, said housing and associated switch mechanism being of sufficient weight to flex the resilient contact into circuit completing contact with the fixed contact when the device is suspended by the cord.

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