Sept. 14, 1937. L. LUDWIG 2,093,085

ELECTRIC SWITCH

Filed May 20, 1935

Fig 1

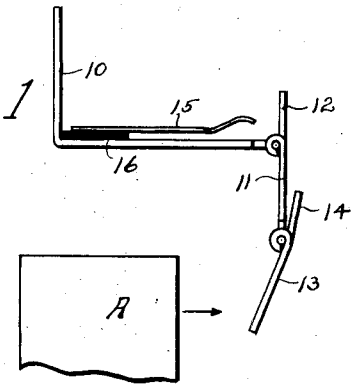


Fig 2

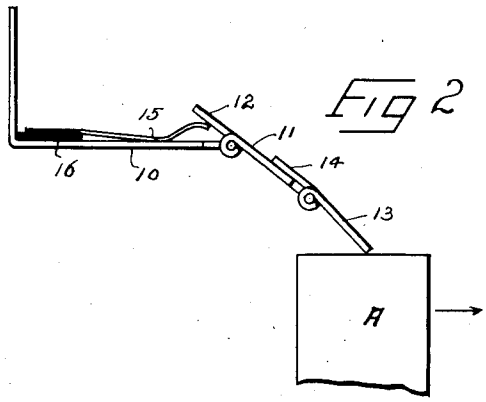


Fig 3

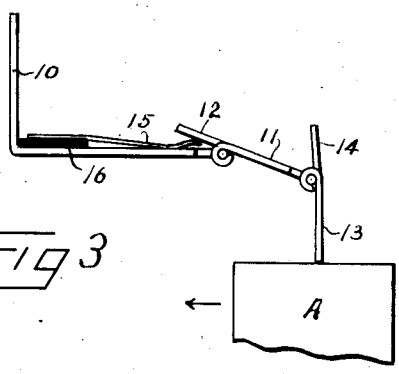


Fig 4

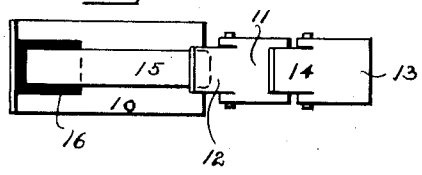
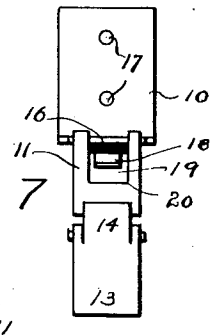


Fig 7



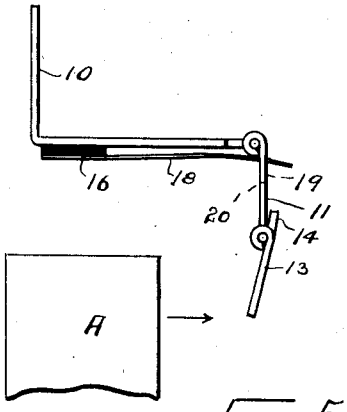


Fig 5

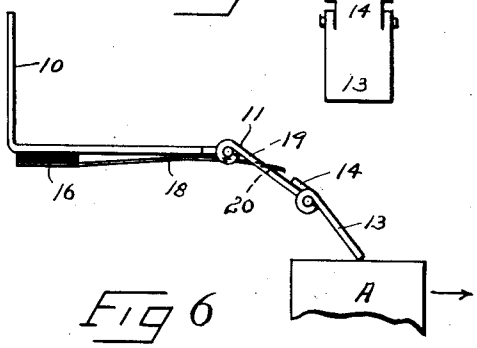


Fig 6

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ELECTRIC SWITCH

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3 Claims. (Cl. 200—54)

This invention relates to electric switches of the type which is used for making contact when a door, drawer or similar object is opened.

I am aware that switches have formerly been made in which a lever, engaged and lifted by a door or drawer, closes the switch. Such switches are objectionable however, in that, it frequently happens that if the object on which they are employed is only partly opened and then closed again, so that the lever does not have an opportunity to go through its whole cycle of movements, the lever is caught by the rearward movement of the object, so that the switch is broken or so bent and distorted as to render it useless.

The main object of the present invention is to overcome this defect. Another object is to provide a switch of this type in which a more perfect contact is made between the switch members. A further object is to provide a switch of simple and strong construction, which can be attached to any object where it may be needed with a minimum expenditure of labor, and which can be manufactured at a comparatively low price.

These and various other objects and advantages will be readily understood from the following description and from the accompanying drawing of preferred embodiments of the invention, in which, however, modifications may be made without departing from the scope of the appended claims. In the drawing

Fig. 1 is a side elevation of the improved switch,

Fig. 2, another side elevation shown with the switch mechanism closed,

Fig. 3, still another side elevation showing the switch mechanism in a different position,

Fig. 4, a plan view,

Fig. 5, a side elevation of a slightly modified switch,

Fig. 6, another side elevation of the switch shown in Fig. 5, and

Fig. 7, a rear view of Fig. 5.

Referring first to Figs. 1 to 4 inclusive, the device consists of a bracket 10, at the outer end of which a link 11 is hinged. This link has an upwardly extending arm 12. Another link 13, having another upwardly extending arm 14, is hinged to the lower end of link 11. A contact blade 15 is secured to a piece of insulating material 16, which is in turn secured to the bracket, so as to insulate it from the contact blade. The edge of a door, drawer or other swinging or sliding objects on which the switch may be used, is indicated at A.

The switch operates in the following manner: The bracket is secured above the door by means of screws or other means passed through the holes 17. If the door A is moved in the direction indicated by the arrow in Fig. 1 until it engages the link 13, the link will be moved until the arm 14 engages on link 11, after which both of the links will be lifted. As the door keeps moving in the direction indicated, the links will be lifted, as shown at Fig. 2, until the arm 12 contacts with the contact blade 15 and thus closes the electric circuit. As the door continues in the direction indicated by the arrow, the links will drop behind the door and thus again break the circuit. When the door is moved in the opposite direction, as when being closed, the links are folded up and allow the door to pass without closing the circuit. Finally after the door is completely closed the links will again assume the normal or inoperative position shown in Fig. 1.

As said in the preamble, switches of this type have formerly been made with one link instead of with two links, as in the present invention. If the door was to be returned to its closed position when occupying the position shown in Fig. 2, and if one link was employed, it will readily be seen that there would be an imminent danger that the lower end of the single link, would "bite" into the top of the door and thus be forced in the direction in which the door is moving, causing the device to be broken or distorted. With the double links this cannot happen. As shown in Fig. 3, when the door is stopped in the position shown in Fig. 2, and moved in the direction of the arrow, the lower link will simply assume a more vertical position, raise the upper link and depress the contact blade still further, until such times as it passes beyond the vertical point and moves with the door in the direction in which the door is moving.

In the modification shown in Figs. 5, 6 and 7, the contact blade 18 has been placed on the bottom of the bracket, and instead of the upper link being provided with an upwardly extending arm it is bifurcated so as to form a deep slot 19 through which the outer end of the blade 18 passes. When the links are lifted, as in Fig. 6, the lower edge 20 of the slot 19 engages the outer end of the contact blade and forces the blade against the bracket, as plainly shown.

From the foregoing it will be seen that this switch overcomes the defects found in former switches of this type. It will also be noted that it is of simple and effective construction, in that, it causes the contact spring to engage directly with the bracket, thus insuring a perfect electric contact.

No binding posts or clips have been shown, as any type of such may be used. In practice, one such binding post or clip is secured to the contact blade and the other to the bracket. The wires from a circuit are connected to such posts or clips.

Having described my invention and its objects, what I claim as new and wish to protect by Letters Patent is:

1. In a switch of the class described; an angular bracket formed from a flat metal strip and having its vertical member attachable to the frame of the object on which used; a link hinged to the end of the horizontal member of the bracket and freely depending therefrom; a second link hinged to and freely depending from the free end of the first link; a contact blade secured to the bracket but insulated therefrom; the second link provided with a detent to cause it and the first link to act as a single lever and to turn upon the bracket hinge, when moved in one direction, and to turn upon one another and upon the bracket, when moved in the opposite direction; and the first link adapted to engage the contact blade when the links are operated as a single lever.

2. In a switch of the class described; an angular bracket formed from a flat metal strip and having its vertical member attachable to the frame of the object on which used; a link hinged to the end of the horizontal member of the bracket and freely depending therefrom; a second link hinged to and freely depending from the free end of the first link; a contact blade secured to the top of the horizontal member of the bracket but insulated therefrom; the second link provided with a detent to cause it and the first link to act as a single lever and to turn upon the bracket hinge, when moved in one direction, and to turn upon one another and upon the bracket, when moved in the opposite direction; and an upwardly extending member provided on the first link for engaging the contact blade when the links are operated as a single lever.

3. In a switch of the class described; an angular bracket formed from a flat metal strip and having its vertical member attachable to the frame of the object on which used; a link hinged to the end of the horizontal member of the bracket and freely depending therefrom; a second link hinged to and freely depending from the free end of the first link; a contact blade secured to the bottom of the horizontal member of the bracket but insulated therefrom; the second link provided with a detent to cause it and the first link to act as a single lever and to turn upon the bracket hinge, when moved in one direction, and to turn upon one another and upon the bracket when moved in the opposite direction; and a slot formed in the first link the bottom of which engages with the contact blade when the links are operated as a single lever.

LOUIS LUDWIG.