Dec. 22, 1936. W. M. GARDNER 2,064,827

AUTOMATIC SAFETY SWITCH

Filed March 5, 1935

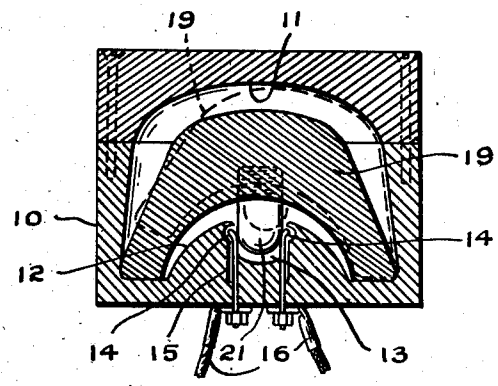


Fig. 1.

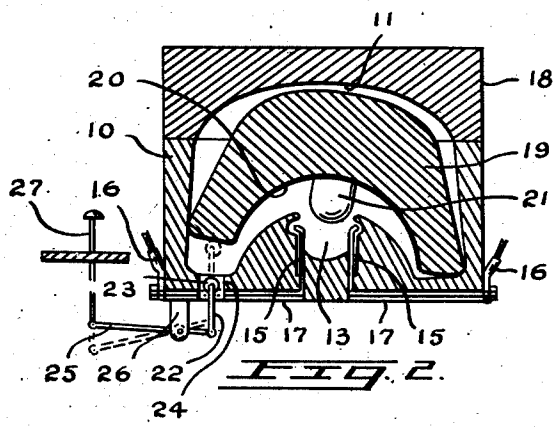


Fig. 2.

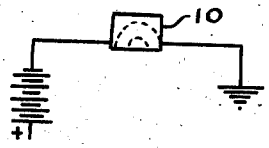


Fig. 3.

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AUTOMATIC SAFETY SWITCH

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Application March 5, 1935, Serial No. 9,482

3 Claims. (Cl. 200—52)

This invention relates to improvements in an automatic safety switch for use in the electrical circuit of an automobile. The object of the invention is to eliminate the possibility of fire caused through broken "live wires" and ruptured gas lines or gas tanks should an automobile be in a collision or turn over.

A further object is to provide a device to automatically break the electrical circuit of an automobile should the said automobile turn over, thereby stopping the engine and preventing fire or further damage to either the automobile or the occupants thereof.

A still further object of the invention is to provide such a device that will require no attention, is absolutely fool proof and will not wear out.

With these and other objects in view that may appear while the description proceeds, the invention consists in the novel construction and arrangement of parts as hereinafter more specifically set forth, claimed, and shown in the accompanying drawing forming part of this application and in which—

Fig. 1 is a sectional view through my improved automatic safety switch showing the position of the weight member in normal position and dotted in the position when car is tipped.

Fig. 2 is a partial sectional view showing a modification thereof having foot operating means added thereto.

Fig. 3 is a wiring diagram showing where the switch is inserted in the circuit.

Referring more in detail to the drawing in which similar reference characters designate corresponding parts throughout the several views it will be seen the invention comprises a casing 10 of suitable insulation material having a circular interior and being rounded in the top 11 and having a convex bottom 12 with a recess 13 in the center thereof. Extending upward into this central recess 13 are two spring contact prongs 14 positioned in grooves 15 in a manner to permit slight movement to the upper ends thereof. The lower ends are rigidly secured and extend through the case to receive the terminals 16 of the circuit connections. In the alternate view of Fig. 2, the ends of the prongs are shown in grooves 17 along the bottom of the casing to the circuit terminal 16.

The casing 10 may be made in sections or constructed with a top 18 for assembly purposes. A lead weight 19 having a concave recess 20 in the bottom thereof is positioned freely within the interior of the casing. Said weight is designed to fit within the inner bottom of the casing in a manner to be retained in position by the sides thereof. As will be seen the weight is of greater dimension at the bottom, the side being tapered into conical formation with the top rounded off, or it may be constructed as a half sphere with a partially concave bottom. Secured in the center of the said concave recess 20 and depending therefrom is a copper contact plug 21 which may be threaded and screwed into the weight or it may be moulded therein. The said plug 21 is designed to contact the prongs 14 when the device is in its normal resting position and thereby complete the circuit through the device. In operation the device is mounted out of the way on the chassis of the automobile, the bottom thereof being in alignment with the chassis when on the level. Should the automobile become off the level at an acute angle the weight will immediately tip over and the plug will be withdrawn from the contact prongs thereby breaking the circuit. Due to the circular construction of the weight the device will operate no matter which way the automobile tilts, whether sideways or longitudinally.

Manual operation is likewise provided for the device and comprises a plunger 22 having an insulated contact roller 23 in the end thereof arranged to move vertically in a slot 24 in the bottom of the casing. Said plunger is pivotally connected to a lever arm 25 pivoted in a bracket 26, and said lever arm is in turn pivoted to a rod 27 to be operated by hand or foot from the interior of the automobile. This device provides means to quickly disconnect the battery circuit should any trouble such as short circuits occur while the automobile is on the level.

It is believed that the operation, construction and advantages of the invention will be apparent from the foregoing description in conjunction with the accompanying drawing.

While the preferred embodiment of the structure has been disclosed it is understood that minor changes in the detail of construction combination and arrangement of co-operating parts may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

I claim:—

1. In a safety switch as described comprising an insulating casing having a convex mound in its inner bottom and a centrally disposed recess therein, electrical contact elements in said recess, a weight positioned in said casing, said weight having its sides tapering centrally toward

the top and having a concave bottom to register with the said convex mound of the casing, a plug of conductable metal depending centrally from the concave bottom of the said weight adapted to enter said recess to contact both electrical contact elements and complete the circuit therebetween when the device is level, and means whereby the said weight may be tipped upward manually and thereby break the circuit at will.

2. In a safety switch as described comprising an insulating casing having a convex mound in its inner bottom and a centrally disposed recess therein, electrical contact elements in said recess, a weight positioned in said casing, said weight having its sides tapering centrally toward the top and having a concave bottom to register with the said convex mound of the casing, a plug of conductable metal depending centrally from the concave bottom of the said weight adapted to enter said recess to contact both electrical contact elements and complete the circuit therebetween when the device is level, a plunger reciprocally mounted through the bottom of said casing to engage the bottom of said weight and lever means actuating the plunger to raise said weight and break the circuit.

3. In a safety switch as described comprising an insulating casing having formed in its inner bottom a convex mound having a centrally disposed recess therein, electrical contact elements in said recess, a freely tiltable weight disposed in said casing in straddling relation to said mound and an electrical contact plug depending from the center of said weight adapted to enter said recess and engage the electrical elements therein when said casing and weight are level.

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