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SAFETY SWITCH

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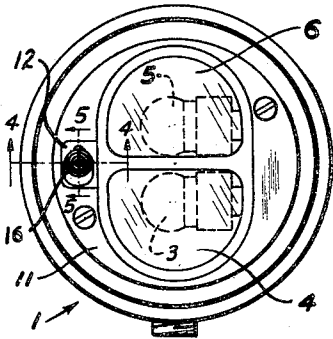


Fig. 1

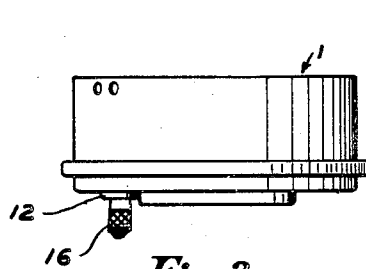


Fig. 2

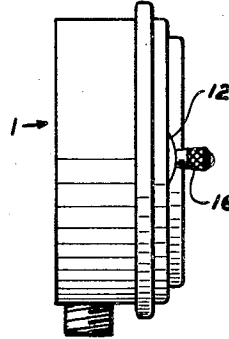


Fig. 3

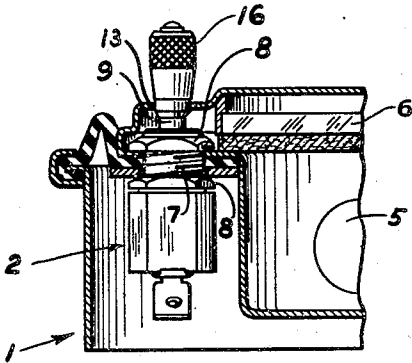


Fig. 4

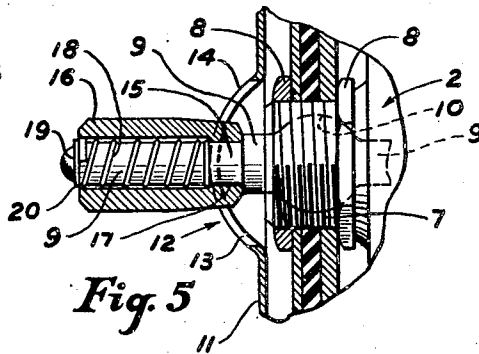


Fig. 5

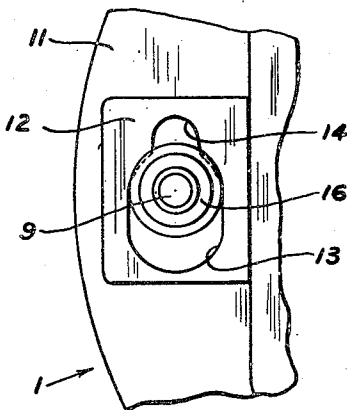


Fig. 6

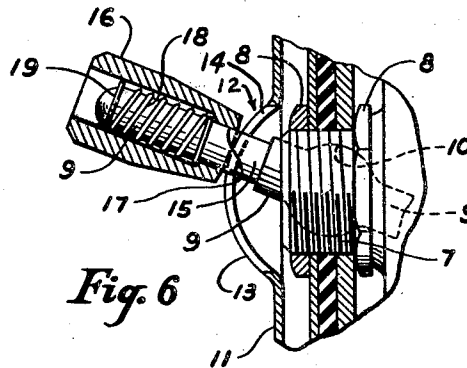


Fig. 7

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2,409,022

SAFETY SWITCH

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2 Claims. (Cl. 200-172)

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The present invention pertains to a novel switch designed for use in a situation where great caution must be exercised in effecting one of the switch positions. Such a situation occurs, for example, in the operation of a military vehicle at night, where the flashing of a white light however faint is liable to reveal a hidden location to the enemy. The same switch may operate a red or blackout light and also have an off position. The latter positions are determined by easy movements of the switch, but the adjustment to the white light position must not be easy.

The object of the invention is to provide a switch operating in this manner. The switch includes an operating stem passing through a slot in a face plate. The slot has a wide end and a narrow end, while the stem carries a spring-loaded slidable knob readily received in the wider part of the slot. The knob is receivable in any part of the wider portion, where it represents a safe position of the switch. The white position requires movement of the stem into the narrow part of the slot which, however, is too narrow to receive the knob. Thus, the operator is first required to pull the knob against the action of the spring to expose or uncover a portion of the stem which is only then receivable in the narrow portion.

An illustrative embodiment of the invention is disclosed in the following description and in the accompanying drawing in which:

Figure 1 is a front elevation of a lamp having a switch embodying the present invention installed therein;

Figure 2 is a plan view of the construction shown in Figure 1;

Figure 3 is a side elevation thereof;

Figure 4 is a cross section taken substantially on the plane indicated by the line 4-4 of Figure 1;

Figure 5 is a cross section taken substantially on the plane indicated by the line 5-5 of Figure 1;

Figure 6 is a cross section similar to Figure 5, but showing the switch handle in another position, and

Figure 7 is an enlarged elevational view of a portion of Figure 1.

In Figure 1 is shown a housing 1 in which the switch is mounted. The switch is of a conventional design adapted to control two circuits and is designated generally by the numeral 2 in Figure 4. One circuit controls a red or blackout bulb 3 mounted within the housing adjacent the lower pane or lens 4, which may be of glass or other

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suitable light transmitting material such as lucite. The other circuit controls a white light bulb 5 mounted within the housing adjacent the upper pane or lens 6. In the wall of the housing is mounted a threaded ferrule 7 held by a pair of nuts 8. From the switch 2 a switch operating stem 9 passes through the ferrule and is formed intermediate its ends with a ball 10 pivotally mounted in the ferrule 7. The stem also passes through a face plate 11 mounted on the housing. The plate 11 has an arcuate boss 12 projecting outwardly therefrom, the boss having a curvature concentric with the center of the ball 10. Extending longitudinally of the arcuate boss 12 is a slot having a wide end 13 and a narrow end 14.

The external end of the stem 9 is reduced in diameter at 15 and has slidably mounted thereon a knob 16. The latter is formed with an internal shoulder 17 near its inner end for seating one end of a coil spring 18 surrounding the reduced end of the stem. The outer extremity of the stem is grooved at 19 to receive a split ring 20 which forms a seat for the other end of the spring 18.

The switch is designed with three positions controlling the two circuits. In the position shown in Figure 5, in which the knob 16 and stem 9 are located in the center of the slot 13, 14, both circuits are open and both the blackout bulb 3 and the white light bulb 5 are "off." Movement of the knob downward into the wide end 13 of the slot closes the circuit to the blackout bulb 3 and the latter is turned "on."

The third position is shown in Figure 6, in which the knob is swung upward, closing the circuit to the white light bulb 5 and turning the latter "on." It will be noted, however, that the narrow end 14 of the slot is not of sufficient width to receive the knob 16. This last position is one that must be taken only cautiously, since the turning on of a bright white light in a military vehicle, whether it be a head light, white tail light or an interior light, may be seriously revealing to the enemy in night operations.

In order that the last named position may not be obtained carelessly or accidentally, a distinct and deliberate manual operation is made necessary. In this case it consists in pulling the knob 16 outward against the pressure of the spring 18, thus exposing the bare stem 9 at its reduced diameter 15 which is slightly smaller than the width of the narrow end 14 of the slot. With the knob 16 thus withdrawn, the stem can be swung into the narrow end of the slot.

It will be apparent that since the arcuate boss

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12 is concentric with the ball 10 the reduced portion 15 of the stem 9 is within the slot 13, 14 in every angular position of the stem.

While a specific embodiment of the invention has been shown and been described, it will be understood that various alterations may be made without departure from the spirit of the invention as indicated by the appended claims.

What I claim is:

1. In a switch, an operating stem pivotally mounted for angular movement between a pair of spaced operative positions closing separate circuits and an intermediate inoperative position, a plate having a slot through which said stem passes, a knob slidably mounted on said stem at said slot and adapted to move axially of the stem to uncover the stem in the slot, a spring acting on said knob to normally hold it in a position covering said stem in the slot, said slot having a wide portion of sufficient width to receive said knob and a narrow portion of sufficient width to receive the exposed part of said stem but of insufficient width to receive said knob, the wide portion of said slot extending over the inoperative position of said stem and one of its operative positions, and the narrow portion of said slot extending over the other of the operative positions of said stem so that unobstructed movement of said stem is permitted between its inoperative position and one of said operative positions and movement to the other of said operative positions is possible only when said knob is moved axially on said stem against the action of said spring to uncover said

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stem in the slot and permit entrance of said stem into the narrow portion of the slot.

2. In a switch, an operating stem pivotally mounted for angular movement between a pair of spaced operative positions closing separate circuits and an intermediate inoperative position and having a portion of reduced diameter forming a shoulder on said stem, a plate having a slot through which the reduced portion of said stem passes, a knob slidably mounted on the reduced portion of said stem, a spring acting on said knob to normally hold it against said shoulder in which position the knob covers the stem in the slot, said slot having a wide portion of sufficient width to receive said knob and a narrow portion of sufficient width to receive the exposed part of said stem but of insufficient width to receive said knob; the wide portion of said slot extending over the inoperative position of said stem and one of its operative positions, and the narrow portion of said slot extending over the other of the operative positions of said stem so that with said knob against said shoulder unobstructed movement of said stem and knob is permitted between the inoperative position of said stem and one of its operative positions without contact being made between said knob and said plate and movement to the other of said operative positions is possible only when said knob is moved axially on said stem against the action of said spring to uncover said stem in the slot and permit entrance of said stem into the narrow portion of the slot.

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