Jan. 30, 1940. J. RIGGS 2,188,725

SWITCH

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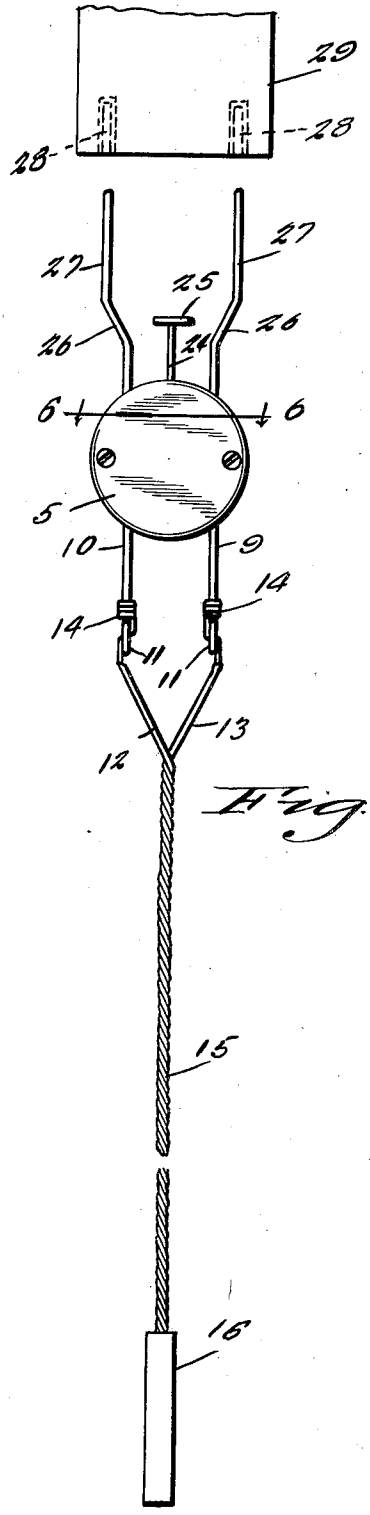


Fig. 1.

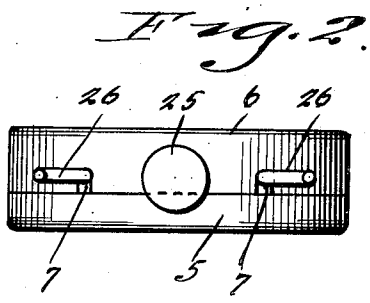


Fig. 2.

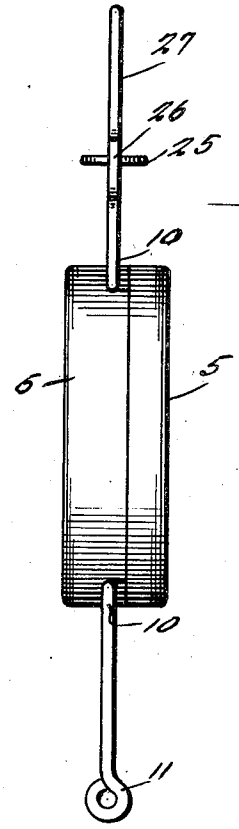


Fig. 3.

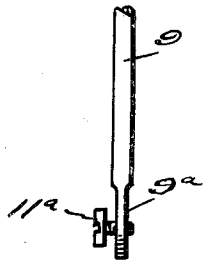


Fig. 8.

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Fig. 4.

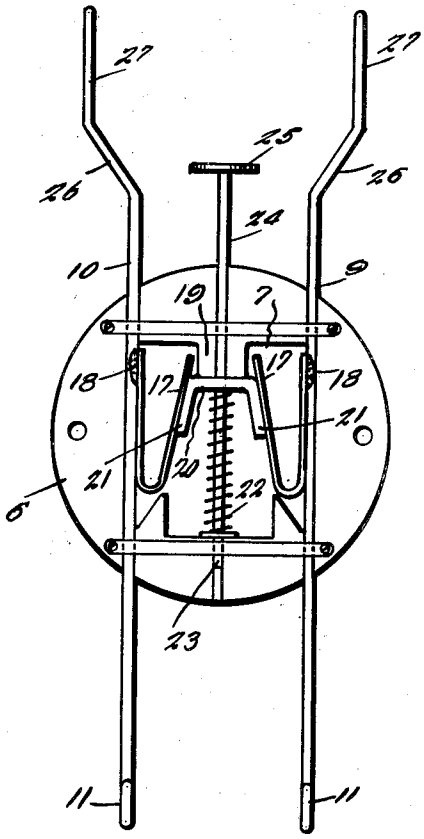


Fig. 5.

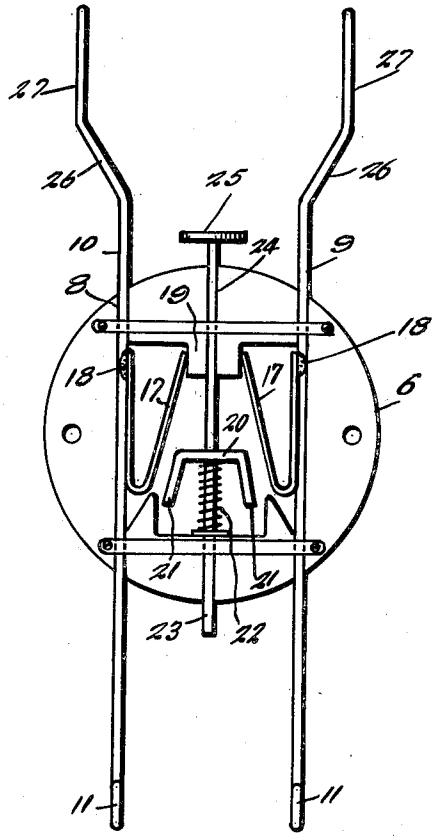


Fig. 7.

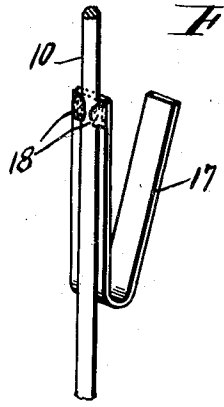
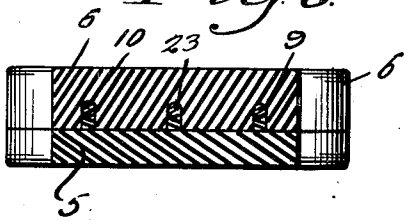


Fig. 6.



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UNITED STATES PATENT OFFICE

2,188,725

SWITCH

Joseph Riggs, Pound, Va., assignor of fifty per cent to Thurman M. Perry, Jenkins, Ky.

Application January 10, 1939, Serial No. 250,201

1 Claim. (Cl. 200—51)

This invention appertains to new and useful improvements in safety switches for shot firing cables.

The principal object of the present invention is to provide a safety switch for shot firing cables which will serve in a fool-proof manner to prevent premature discharging of the shot.

Another important object of the invention is to provide a safety switch which will be of simple construction and easy and convenient to operate.

These and other objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a top plan view of the switch, shown in conjunction with a blasting battery and shot cable.

Figure 2 is a side elevational view.

Figure 3 is an edge elevational view of the switch.

Figure 4 is a top plan view of the switch with one body section removed.

Figure 5 is a top plan view of the switch with one bottom section removed and showing the switch in open oposition.

Figure 6 is a section on the line 6—6 of Figure 1.

Figure 7 is a fragmentary perspective view showing one of the switch springs.

Figure 8 is a fragmentary side elevational view showing one of the cable attaching prongs modified to provide a binding screw.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the switch is made up of the lower section 5 and the upper section 6. These sections make up the body of the switch and are preferably of insulation. The upper section is recessed as at 7 and has a pair of longitudinally extending grooves 7—8 for receiving the intermediate portions of the elongated stiff members 9 and 10, respectively. One end of each of the members 9—10 is formed with an eye 11 through which the conductors 12 and 13 are disposed. These conductors are further wound as at 14 about the adjacent portions of the elongated members 9 and 10 to properly secure the same in place. The cable 15 is twisted as shown in Figure 1 and leads to the shot 16.

The intermediate portion of each of the elongated members 9—10 has a substantially V-shaped contact spring 17 secured thereto by one of its ends, by solder or welding 18. The free ends of the springs 17—17 bear against the boss 19 which projects into the pocket 7, when the contactor 20 is disengaged therefrom. This contactor 20 has a pair of diverged leg members 21—21 which engage the free end portions of the springs 17—17 flatly as shown in Figure 4 when the contactor 20 is allowed to become positioned against the boss 19 in response to the tension of the spring 22, this spring 22 being convoluted on the stem 23 and interposed between one end of the pocket 7 and the said contactor 20, the latter being fixed to the stem 23. The stem extends longitudinally in the groove 24 and is slidable therein and at one end, that is, exteriorly of the body, is provided with the finger engageable head 25.

The remaining ends of the elongated rigid conductor members 9—10 diverge as at 26 and then extend as at 27 so as to avoid ample clearance for manipulation of the stem 23 by the head 25.

The portions 27—27 serve as contact prongs for engagement into the contact socket 28 of the blasting battery 29.

It can now be seen, that normally the spring 22 maintains the contactor 20 bridging the springs 17—17 and thus the battery is grounded and no current can reach the shot 16.

However, when it is desired to discharge the shot 16, all that is required is to force the head 25 of the stem 23 inwardly and this disengages the contactor 20 from the spring 17—17, thus permitting the current from the battery to pass through the cable 15 to set off the charge 16.

A modified form of elongated conductor member 9 or 10 is shown in Figure 8 wherein the cable end is flattened as at 9a and has a binding screw 11a threadedly disposed therein.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

A safety switch of the character described comprising a body having a pair of elongated substantially rigid conductor members extending therethrough, said body being provided with an internal pocket, a pair of substantially V-shaped spring contact fingers, each of these said spring contact fingers having one leg portion secured to a corresponding rigid conductor, the remaining leg portions of the fingers converging toward each other, a push rod, a spreader of insulation between the rigid conductors through which the push rod is slidable, said spreader provided with a boss thereon against opposite side portions of which the free ends of the spring fingers can engage and normally be separated, a tapered contactor carried by the push rod, a second spreader between the rigid conductors and a compression spring interposed between the second-mentioned spreader and the contactor for normally urging the rod and contactor to a position with the contactor normally bridging the free end portions of the spring contact members.

JOSEPH RIGGS.