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ALARM ACTUATING DEVICE

Filed Nov. 21, 1928

2 Sheets-Sheet 2

Fig. 5

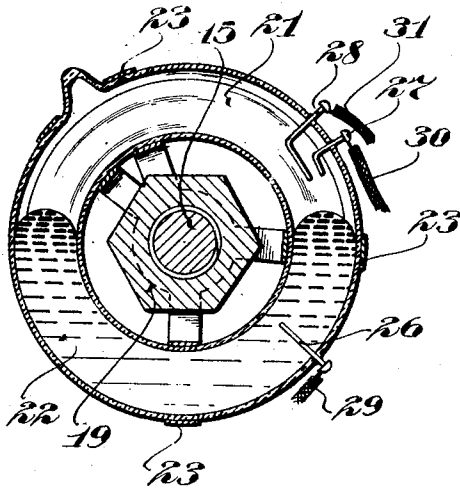


Fig. 6

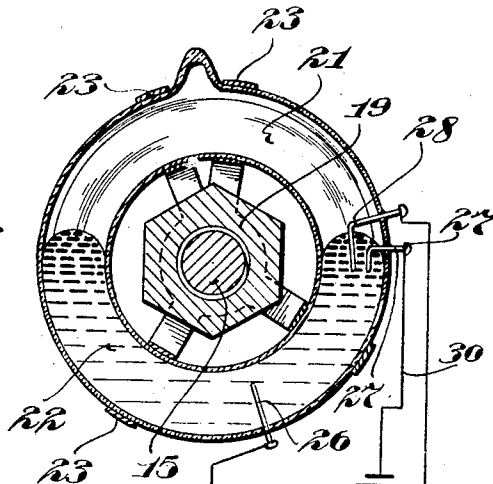


Fig. 4

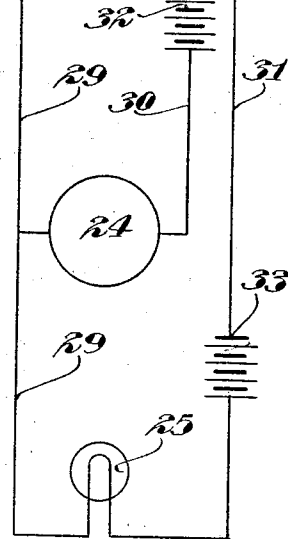
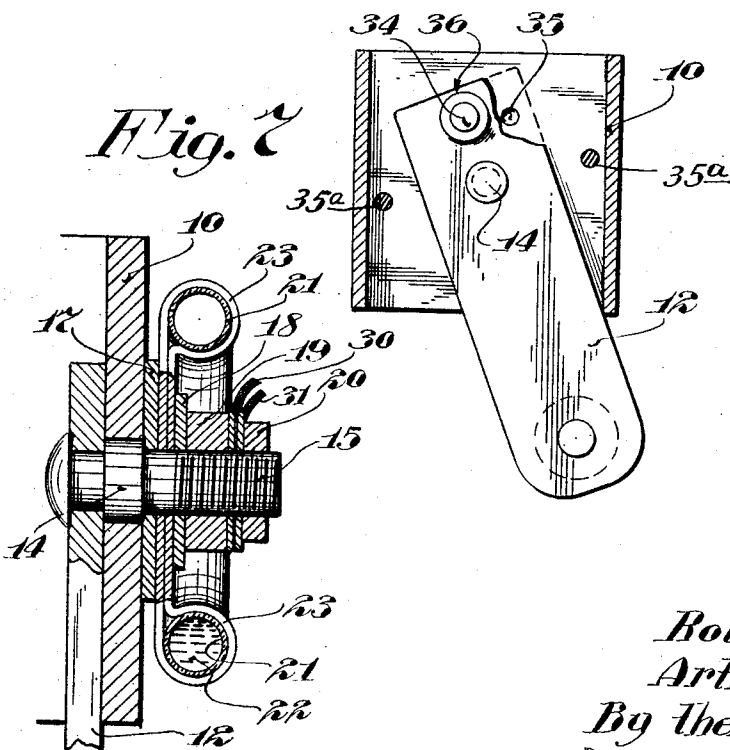


Fig. 2



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ALARM ACTUATING DEVICE

Application filed November 21, 1928. Serial No. 320,930.

Our invention relates to means for actuating alarm systems, more particularly such as burglar alarms applicable in banks where a clerk, unobserved by a robber, may, with his foot, actuate a switch to cause sounding of electrically-actuated alarm devices.

Generally stated, the invention consists of the novel construction, combinations and arrangement of parts hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is an elevation with some parts broken away and some parts sectioned, showing the improved alarm-actuating device;

Fig. 2 is an enlarged transverse section taken on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary longitudinal section taken on the line 3—3 of Fig. 2;

Fig. 4 is a detail in section taken on the line 4—4 of Fig. 1;

Figs. 5 and 6 are sections taken on the line 5—6 of Fig. 3, said Fig. 6 showing also a diagram of the electric alarm circuit; and

Fig. 7 is a fragmentary section on an enlarged scale taken on the line 7—7 of Fig. 3.

As a support with a foot-operated switch-actuating mechanism, there is provided end plates 8 shown as covered and connected by a hood-like cover 9 that covers and protects the switch-actuated mechanism and upon which, if desired, the feet of the operator may be rested under ordinary conditions. Vertically extended channel plates 10 are rigidly secured to the inner sides of the end plates 8 near the tops thereof, and to these bearing plates 10 a bail-like foot-piece is pivotally connected. This bail-like foot-piece preferably comprises a cross bar 11 and lever-like arms 12 which elements are connected by pivot joints 13 that make accurate spacing of the arms 12 unnecessary and give flexibility to the operative bail. One of the arms 12, at its upper end, is riveted or otherwise rigidly secured to a trunnion 14 that is loosely journaled in the inner wall of the adjacent bearing plate 10 and has a threaded inwardly extended end 15. The other arm 12 is directly

pivoted to the inner wall of the other bearing plate 10 by a nut-equipped bolt 16. On the inwardly projecting end 15 of the trunnion 14 are placed two washers 17 and 18 and two nuts 19 and 20.

As a circuit-controlling element, we preferably employ a glass mercury bulb shown as in the form of an annular tube 21, preferably about half filled with mercury 22. This annular bulb 21 is held by light metallic keeper straps 23, the ends of which are clamped between the washers 17 and 18 when nut 19 is tightened so as to force washer 17 against the adjacent shoulder of trunnion 14.

In the diagram view, Fig. 6, we have illustrated two types of alarm devices, to wit: an audible alarm device in the form of an electrically-actuated gong, and a visible alarm device in the nature of an electric lamp, and hence we have illustrated a three-wire circuit normally open but arranged to be closed by oscillation of the mercury bulb. The electrically-actuated gong is indicated by the numeral 24 and the electrically-actuated lamp is indicated by the numeral 25. The numeral 26 indicates a metallic wire terminal that is extended through the glass mercury bulb 21 and is always submerged in the mercury 22, while the numerals 27 and 28 indicate wire terminals that are extended into the glass bulb 21, but are both normally above the mercury 22. The terminal 26 is connected by a wire 29 to one side of the gong 24 and to one side of the lamp 25, and the other sides of said gong and lamp are connected, respectively, by wires 30 and 31 to the terminals 27 and 28. Batteries 32 and 33 are indicated as interposed in the lead wires 30 and 31.

The forward and rearward oscillatory movements of the arms 10 of the foot-operated bail are limited by engagement thereof with the lower front and rear edges of the adjacent bearing plates 10. Normally, the arms 12 will stand as shown in Fig. 4, that is, they will be set away from the operator. Preferably, the bail is normally held in its inoperative positions shown in Figs. 2, 3 and 4, but under such light restraint as to be quite easily moved by foot application, by means of a spring-pressed plunger 34, the rounded

end of which then engages a slight depression 35 formed in the adjacent bearing plate 10. This spring-pressed plunger 33, as shown, is mounted in a small casing 36 carried by the upper portion of the right-hand arm 12, see particularly Fig. 3.

Fig. 5 indicates the normally open condition of the alarm circuits wherein the lead terminals 27 and 28 are above the mercury 22 so that both of the alarm circuits are open and the alarm devices are dormant. In the device described, the foot of the operator can be pressed forward against the bar 11 without causing the alarm to be sounded. When, however, occasion arises, as when a bank robber appears on the scene, the operator seated in front of the device simply slips his toe under the bar 11 and pulls the same back, thereby oscillating the mercury bulb and carrying the terminals 27 and 28 down into the mercury 22, thus closing both of the alarm circuits. This action, it will be noted, is accomplished by a simple oscillatory movement of the actuating bail to which the mercury bulb is directly connected without the intervention of any relatively movable part whatsoever. This is not only simple construction, but furnishes a device that is thoroughly reliable. Of course, the double alarm device is not a necessity, but a matter of preference. It should be noted further that the arrangement is such that a circuit should be closed and the alarm sounded even if the arms 12 are not moved toward the left in respect to Figs. 2 and 3 as far as they will go, but the circuits will be closed even if the said arms are turned straight downward or into positions in which they will naturally hang under the action of gravity. Hence when the circuit is once closed, the alarms will continue to operate until the bail is purposely restored to its normal position shown in Figs. 2 and 4.

In the drawings, we have illustrated and have above specifically described a preferred form of the invention, but it will be understood that the same may be modified in respect to details of construction and arrangement of parts, all within the scope of the invention herein disclosed and defined in the claim.

Surrounding the circuit-closing elements is a cap-like cover 34^a that is detachably held in place against the plate 10 by nut-equipped bolts 35^a. The cap-like cover 8 is cut away at its lower portion to receive a terminal block 36 of insulating material that is suitably secured to the lower portion of the plate 10.

What we claim is:

An alarm device comprising a pivoted arm having a limited oscillatory movement, an annular tube of a material that is a non-conductor of electricity applied around the pivot of said arm and movable with said arm, a fluid electric conductor gravity suspended in the lower portion of said annular tube leaving an

air space in the upper portion of said tube, electrodes projected through and into said tube, and means for oscillating said arm far enough in one direction to carry one of said electrodes into said fluid conductor to thereby close the alarm circuit and far enough in the other direction to open the alarm circuit, the said opening and closing actions due to oscillating of said arm and tube serving to alternate the opening and closing of the alarm circuit.

In testimony whereof we affix our signatures.

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