June 9, 1942. P. M. FARMER 2,286,077

ELECTRIC SWITCH

Filed March 24, 1938

FIG. 1

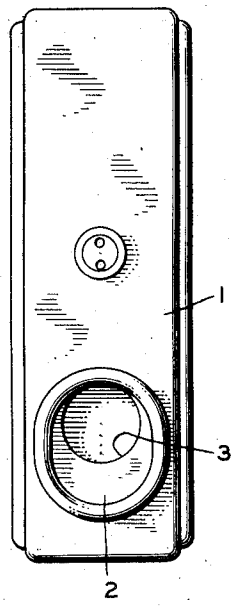


FIG. 2

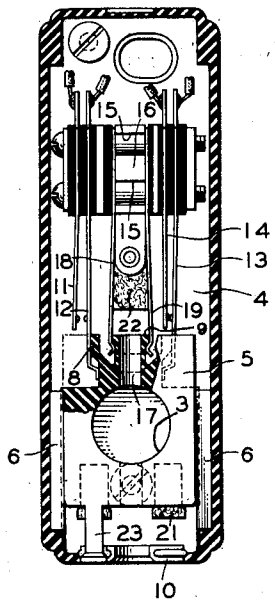


FIG. 3

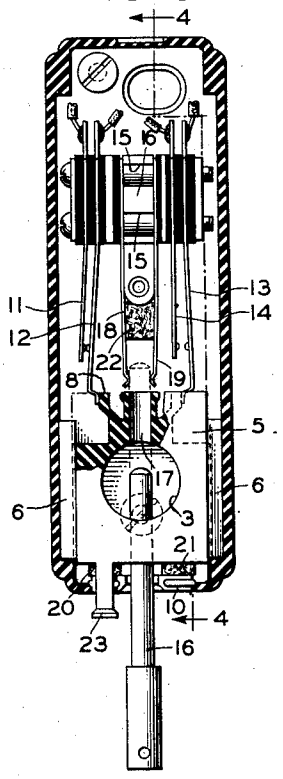


FIG. 4

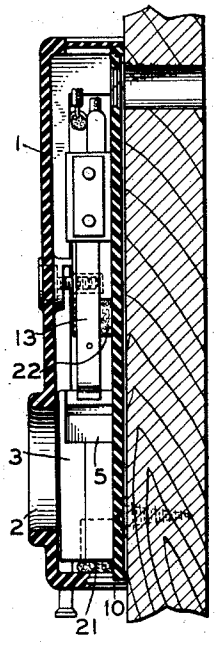


FIG. 6

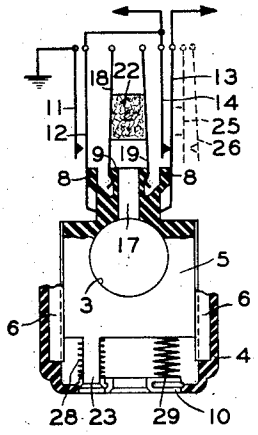
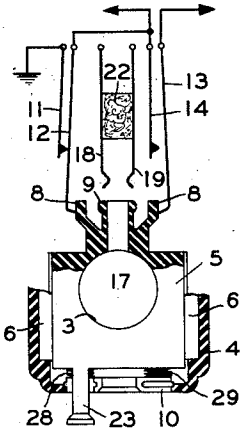


FIG. 7



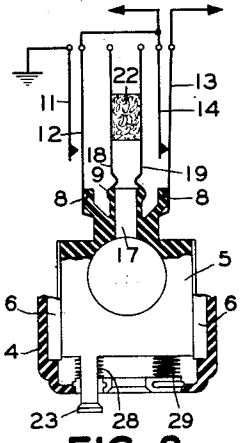
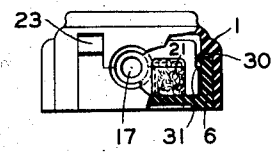


FIG. 8

FIG. 5



INVENTOR
P. M. FARMER
BY A. A. Smith
ATTORNEY

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ELECTRIC SWITCH

Paul M. Farmer, Maplewood, N. J., assignor to American District Telegraph Company, New York, N. Y., a corporation of New Jersey

Application March 24, 1938, Serial No. 197,783

9 Claims. (Cl. 200—1)

This invention relates to manually operated switches for initiating holdup alarm signals of the type which can be silently operated by a substantially invisible movement of the holdup victim and can be easily concealed in a desk or the like. It also relates to a switch having an indicating means therein for indicating operation of the switch so that if a person inadventently sends a holdup signal he cannot later allege that a fault in the alarm system itself has caused a false alarm. Therefore, a switch is provided which will be locked in the operated position and which has an indicator that is also locked in position to indicate switch operation.

In the event of a holdup it is desirable to initiate an alarm signal thereby bringing aid to the victim and catching the holdup man. However, this must be done without the knowledge of the bandit since it is possible that he will harm the victim and also be able to escape if he realizes that an alarm signal has been initiated. Therefore the victim must be able to initiate an alarm by means of an invisible switch while he is making some perfectly normal motion and the switch must be noiseless in operation so that the bandit will not be alarmed by any clicks or the like. It is also desirable to have some means of identifying the switch which initiates the holdup alarm since it frequently occurs that in stores, banks, offices or the like a clerk will become unduly alarmed by some suspicious movement of an innocent person and send in a holdup alarm thereby bringing guards or police or both. When they arrive, to absolve himself, the clerk will frequently allege that the alarm system was at fault and initiated a false alarm, but when the holdup alarm switches are locked in operated position and have indicators to show which switch has been operated, it quickly becomes evident to the guards or police whether or not the alarm system was at fault.

Therefore, it is an object of this invention to provide a switch which can be easily concealed and which is noiseless in operation.

Another object of this invention is to provide a switch which can be operated during a normal motion executed by the holdup victim during a holdup.

A further object of this invention is to provide an improved indicating device which will indicate an operated condition of a holdup alarm switch.

Another object of this invention is to provide a holdup alarm switch which will not be operated readily by accidental pressure thereon or any other accidental contact therewith.

Another object of this invention is to provide a switch having an indicator therein which will be locked in its operated position to indicate that it has been operated and which can only be restored to normal position by a person having the proper key.

A further object of this invention is to provide a holdup alarm switch which can be silently operated by a slight motion of one finger and which can be easily concealed about a desk, counter or the like.

Another object of this invention is to provide a holdup alarm switch which, after being operated to initiate a holdup alarm, will be locked in such a position that its operation will be indicated and which can repeatedly be operated to initiate a holdup alarm without first being unlocked and restored to its normal position.

Other objects of the invention will appear from the following description of the preferred embodiments thereof shown in the accompanying drawing wherein:

Fig. 1 shows a plan view of the holdup alarm switch.

Fig. 2 shows a plan view partly in section of the alarm switch in its normal position.

Fig. 3 shows the alarm switch in its operated position and the key for restoring the switch.

Fig. 4 shows a section of Fig. 3 on the line 4—4.

Fig. 5 shows an end view partly in section.

Fig. 6 shows a modification of the alarm switch in diagrammatic form.

Fig. 7 shows the same modification in the operated position.

Fig. 8 shows the same modification in an intermediate position.

The holdup alarm switch is shown in the drawing in substantially its actual size. By referring to Figs. 1 and 4 it is evident that the switch is small and inconspicuous and therefore can be easily mounted in a concealed position such as on a desk or other piece of furniture. In Fig. 1, numeral 1 indicates the cover of the switch, while 2 indicates a fingerhole therein. In Fig. 2 the numeral 5 indicates a finger operated block for the purpose of controlling the springs 11, 12, 13, 14, 18 and 19 which are operated as shown in the drawing by the cam surfaces 8 and 9, finger block 5 being slidable between the lugs 6 at the side of the block. It should be noted here that the finger block 5 is completely enclosed within the cover 1 thereby preventing any

accidental operation of the switch by pressure thereon or any other inadvertent contact with the switch. The operator of the switch must intentionally insert his finger in the finger block before operation is possible and therefore false alarms due to accidental operation are prevented. The spring pile-up is conveniently fastened together by screw members and the whole assembly inserted in the slots **15** of the lug **16**. The purpose of assembling the spring pile-up in this fashion is to enable its mounting and removal on the base **4** without disassembling the whole spring pile-up as this is found to be very convenient both in manufacture and for the purpose of repair. In order to insure silent operation of the switch, the felt or other resilient members **20** and **21** are inserted between the finger block **5** and the end projection **10** mounted on the base **4**, and the locking springs **18** and **19** are silenced by the felt member **22**. Thus when the finger block is pulled to the operated position there will be no clicks or other tell-tale sounds.

The hold-up alarm switch is adapted to be easily operated without attracting attention; for instance in the case of a person sitting behind a desk, he will ordinarily rise to a standing position if threatened by a hold-up man and will usually grasp the desk in his hand. While grasping the desk in this manner it is very easy to hook one's finger in the finger hole **3** of the finger block **5** where the switch is mounted underneath the desk to operate the switch inconspicuously and silently while he is rising to a standing position. In this particular application of the switch, the hold-up victim will have initiated a burglar alarm without any warning whatever to the hold-up man. Operation of the finger block **5** closes the spring contacts **11** and **12** to ground the alarm circuit and opens the spring contacts **13** and **14** to break the alarm circuit as shown in Fig. 6. Therefore the switch is adapted for insertion in the usual types of burglar alarm systems wherein ground and break operation are used. Operation of the switch allows the springs **18** and **19** to approach each other, thereby preventing resetting of the switch as shown in Fig. 3. This particular feature is very desirable since it often happens that clerks in banks or stores will send in false alarms due to suspicious actions of innocent persons. When guards or police respond to these alarms the person responsible will often reset the ordinary hold-up alarm switch and blame the alarm system for the false alarm in order to vindicate himself, whereas the present invention avoids any misapprehension as to the operation of the alarm system by providing the indicator **23** and the locking mechanism mentioned above which prevents the switch being reset. The guards or police responding to an alarm will find an operated switch and being equipped with a key such as the key **16** shown in Fig. 3, will insert it through hole **17** of the finger block **5** to spread springs **18** and **19** thereby resetting the switch to its normal position.

A further modification of the switch is shown in Figs. 6, 7 and 8. In some instances it is desirable that even though the switch has been operated it should still be capable of operation without being reset. In this construction, the spring members **28** and **29** allow operation of the finger block **5**, as shown in Fig. 7, but they return the finger block **5** to the position shown in Fig. 8 when released. As described above in connection with Figs. 2 and 3, the spring members **11** and **12** will open and the spring members **13** and **14** will close after operation of the finger block. Contact members **25** and **26**, shown in Fig. 6, are provided for operating an annunciator to indicate an alarm. Referring to Fig. 7, it should be noted that when the finger block is in its operated position there is a spacing between the element **9** of the finger block **5** and springs **19**, whereas in the construction shown in Fig. 3 there is no such spacing. Thus the springs **28** and **29** will return the finger block to the position shown in Fig. 8, thereby restoring the contacts **11**, **12**, **13** and **14** to their normal position. However, the indicator **23** is still in position to show that the switch has been operated and the switch is in an intermediate position where it can still be operated to initiate a burglar alarm.

Fig. 5 shows a detail of the construction of the finger block **5** and the base member **4**. In its usual installation the switch is mounted with the cover downward. Thus when the cover is removed for the purpose of repair or inspection, it is desirable that the finger block **5** will not drop out of the switch. The extension **6** of the base member **4** is provided with a shoulder **30**, while the finger block is also provided with a cooperating shoulder **31**. These shoulders are approximately one thousandth of an inch wide and cooperate to retain the finger in its proper position, but they will allow the finger block to be sprung out of place so that it may be removed with no difficulty.

Various other modifications may be made in the construction and arrangement of parts without departing from the spirit of the invention set forth in the appended claims.

I claim:

1. In combination, a pair of normally closed contact springs, a pair of normally open contact springs, a pair of locking springs, a base for supporting said contacts and springs, a finger pull block mounted on said base, recessed portions in said block for engaging said locking springs, two other recessed portions in said block which engage said contact springs, a keyhole in said block, a key member engaging said locking springs and a tell-tale mounted at one end of said block.

2. In combination, a base member, a lug integral with said base member, slots in said lug, a contact spring pileup, screw members in said pileup and engaging said slots, a finger pull block engaging said spring pileup, a finger hole in said block, a keyhole in said block, ear members on said base member adapted to engage said block, a cover adapted to cover said spring pileup and said block, a finger hole in said cover offset slightly with respect to the finger hole in said block, resilient members between said block and said cover, a tell-tale attached to said block and projecting through said cover and a keyhole in said cover alined with the keyhole in said block.

3. In combination, a base member, a spring pileup mounted thereon, a movable finger block slidably mounted on said base in operative relation with said pileup, a cover on said base for concealing and enclosing said block and having an opening therein, the axis of which is normal to the plane of motion of said block whereby said finger block can be manually operated.

4. In combination, a base member, a spring pileup mounted thereon, a finger block mounted on said base in operative relation with said pileup, a cover on said base for concealing and for protecting said block having an opening therein whereby said finger block can be operated and

an indicator mounted on said finger block and projecting through said cover.

5. In a switch, a base member, a spring pileup thereon, an operating member for operating said pileup, a cover on said base, said pileup and said member being mounted within and concealed by said cover, said cover having a finger hole therein at one side of said operating member for allowing operation of said member transversely of said fingerhole.

6. In a switch, a finger block, a spring pileup adapted to be operated thereby and comprising at least one set of contacts and a set of locking springs for locking said finger block in operated position, means for enclosing and concealing the entire mechanism, an aperture therein for providing access to the block, an indicator for indicating the operated condition of said block and means for maintaining said block in such a position that the indicator shows an operated condition and in such a position that the block can still operate the contacts.

7. In combination, a unitary spring pileup comprising at least one set of contact springs and a set of locking springs, a finger pull block having operating surfaces for engaging and operating said contact springs and other surfaces engaged by the locking springs, a keyhole in said block and a key member for engaging said locking springs for releasing said block.

8. In combination, a unitary spring pileup comprising contact springs and locking springs, a movable finger block having portions in a plane with said pileup for engaging and operating said contact springs and other portions for engaging said locking springs whereby said locking springs prevent restoration of said block to its normal position, a cover for concealing the pileup and block and an indicator attached to the block and movable through the cover whereby operation is indicated.

9. In a switch, a base member, a unitary spring pileup mounted thereon, said pileup comprising contact springs and locking springs, a movable finger block for operating the contact springs and so associated with said pileup that said block may be locked by the locking springs when it is operated, a keyhole in said finger block and in operative relation to the locking springs and a key member for engaging and releasing said locking springs to unlock the block.

PAUL M. FARMER.