T. HAINES.

FIRE ALARM BOX.

APPLICATION FILED JUNE 17, 1909.

961,440. Patented June 14, 1910.

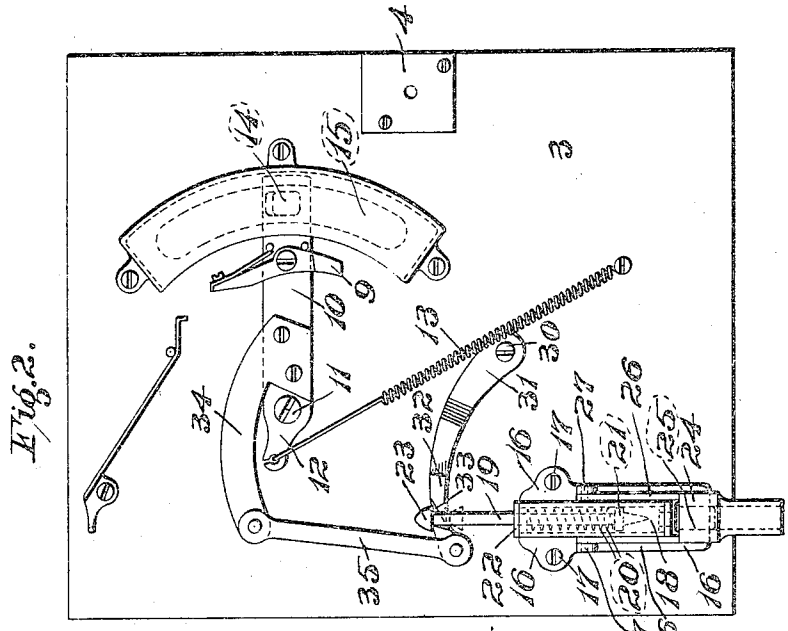

Fig. 2.

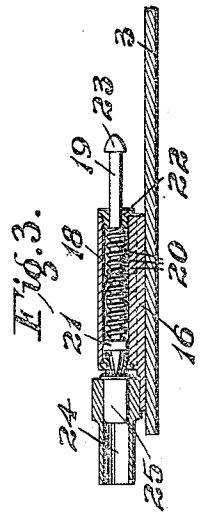

Fig. 3.

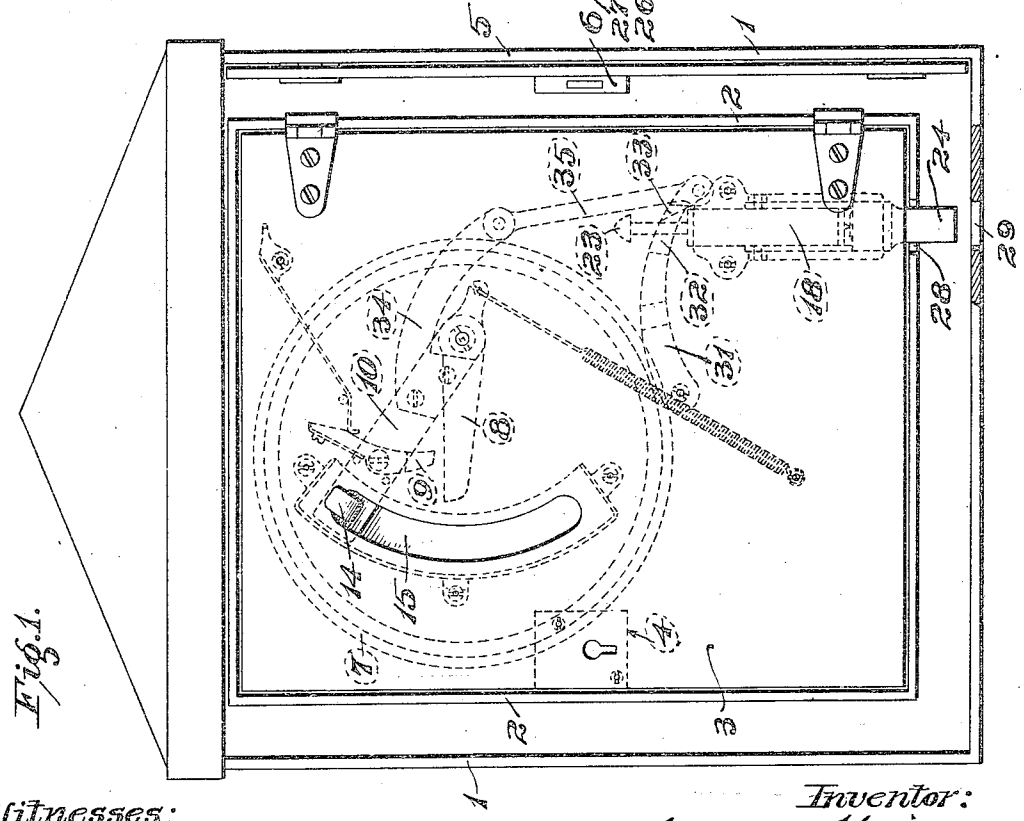

Fig. 1.

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UNITED STATES PATENT OFFICE.

THOMAS HAINES, OF ST. LOUIS, MISSOURI.

FIRE-ALARM BOX.

961,440. Specification of Letters Patent. Patented June 14, 1910.

Application filed June 17, 1909. Serial No. 502,693.

To all whom it may concern:

Be it known that I, THOMAS HAINES, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Fire-Alarm Boxes, of which the following is a specification.

This invention relates to fire-alarm boxes and has for its principal objects to facilitate the detection and apprehension of a person operating the call mechanism to give a false alarm, and to attain certain advantages hereinafter more fully appearing.

The invention consists in a detonating device which is readily attachable to the inside of the box and adapted to be operated by a part of the regular call mechanism which is installed within the box.

The invention further consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawing forming part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a front elevation of an ordinary fire-alarm box with the door of the outer casing opened; Fig. 2 is an elevation of the inner side of the door of the inner casing detached and showing the trigger mechanism partially actuated just prior to the release of the firing-pin; and, Fig. 3 is a longitudinal section of the detonating device detached.

The fire-alarm box shown in the drawing is of the ordinary outdoor type. It comprises an outer shell or casing 1 and an inner shell 2. The inner shell is spaced all around from the outer shell for the purposes of insulation and protection of the inclosed mechanism from the elements. The inner shell is provided with a door 3 having a lock 4 and is opened only by an officer of the fire department or some person authorized to inspect or repair the mechanism contained within. The outer casing has a door 5 which is provided with a lock 6. The key for this lock is kept in some convenient and readily accessible place, usually in a small box or compartment on the outer side of the door and having a side of glass or other frangible material which may be readily broken to obtain the key.

Within the inner shell 2 is located the usual electric telegraph call mechanism, not herein set forth in detail but indicated generally by the circular dotted lines 7 in Fig. 1. This mechanism comprises a rock-arm as shown by the dotted lines 8. The rock-arm is located close to the inner face of the door 3 in the path of a pawl 9 on a lever 10 which is mounted on a pivot stud 11 on the inner side of the door. The lever 10 is provided with an extension 12 which is connected with a spring 13 whereby it is resiliently held in normally raised position. On the outer face of the lever near the end thereof is a lateral projection or hook 14 which extends through an arcuate slot 15 in the door 3 whereby the lever may be conveniently manipulated.

To give an alarm the hook 14 is grasped and the lever 10 is depressed. The pawl 9 on said lever engaging the rock-arm 8 will in turn depress the same. When the lever 10 has been depressed to its lowermost limit, it is released and the spring 13 quickly restores it to normal or raised position. The rock-arm 8 is restored to normal position by the motor spring for the call mechanism which it wound while being depressed.

The foregoing description relates to a common type of fire-alarm box and is herein set forth to afford a better understanding of the present invention.

As shown in the drawing, the detonating device comprises a base 16 which is secured by screws 17 to the inner face of the door 3. On this base, preferably integral therewith, is a firing-pin holder or cylinder 18 in which is slidably fitted a firing-pin 19. The firing-pin is normally held with its pointed end projecting beyond the end of the cylinder 18 by a spring 20 which is coiled about the pin inside of the cylinder between a collar 21 on the pin and a plug 22 secured in the opposite end of the cylinder. The end of the firing-pin opposite to the pointed end projects outside of the cylinder and has a head 23 thereon which is

pointed or rounded on its outer side and provides an annular shoulder adapted to be engaged by a trigger device to be presently described.

A tube or barrel 24 adapted to receive a blank cartridge 25 is provided with a pair of arms 26 which are arranged to straddle a firing-pin holder 18. The ends of the arms 26 are pivotally secured to lugs 27 on the base 16 on opposite sides of the holder, whereby the barrel may be swung away from the end of the holder for convenience in placing and removing the cartridge.

In mounting the detonating device, it is preferably secured to the door in such position that the end of the barrel will project below the bottom of the inner shell 2; and to permit the door to be readily opened and closed without interference, the bottom of the shell is provided with a notch 28 to accommodate the barrel. Below the barrel the bottom of the outer shell 1 is provided with a hole 29 to permit the escape of the wad and gases when the cartridge is exploded.

Pivotally mounted on a stud 30 on the inner side of the door 3 is a trigger-arm 31 whose free end portion is offset away from the face of the door and is resilient so as to yield laterally. On the outer face of the trigger-arm 31 is a lug 32 having a beveled outer end portion 33. This lug is arranged to engage under the shoulder provided by the head 23 on the firing-pin when the trigger-arm is swung upwardly and thereby draw the firing-pin against the tension of the spring 20. As the trigger-arm moves upwardly the lug 32 passes across the shoulder until its beveled portion 33 reaches the same, whereupon the arm will spring inwardly and the firing-pin will suddenly be retracted by its spring 20 with such force that the cartridge will be exploded.

The actuating device for the trigger-arm preferably comprises an arm 34 which is secured to the lever-arm 10 and a link 35 which is pivotally connected to the respective ends of said arm 34 and said trigger-arm 31. By this arrangement, the trigger mechanism of the detonating device is actuated simultaneously with the actuation of the lever arm 10, and the device can be readily applied to any ordinary fire-alarm box with but slight alteration thereof.

It is not probable that any person would maliciously ring in a false alarm if he knew the alarm box contained a device of the character herein set forth. On the other hand, it is probable that a person ignorant of the existence of such device would be so taken by suprise and startled at the detonation resulting from the actuation of the mechanism that his actions would excite suspicion and lead to his apprehension. The detonation, not being readily distinguished from the report of an ordinary fire-arm, is likely to occasion an immediate investigation of its cause by police officers and others. Thus, my invention is calculated to minimize the annoyance, inconvenience, expense and danger occasioned by false alarms.

The device admits of considerable modification without departing from my invention, and, therefore, I do not wish to be limited to the specific construction and arrangement shown.

What I claim is:

1. A fire-alarm box containing telegraphic call mechanism, and a detonating device arranged to be actuated by a part of said telegraphic call mechanism.

2. A fire-alarm box containing a telegraphic call mechanism comprising an operating lever, and a detonating device operatively associated with said operating lever and adapted to be actuated thereby.

3. A fire-alarm box containing a telegraphic call mechanism comprising an operating lever, and a detonating device comprising a barrel adapted to receive an explosive cartridge, a spring-pressed firing-pin, and a trigger device arranged to engage and actuate said firing-pin and operatively connected to said operating lever of the call mechanism so as to be actuated simultaneously therewith.

4. A fire-alarm box containing a telegraphic call mechanism comprising an operating lever, and a detonating device comprising a barrel adapted to receive an explosive cartridge, a spring-pressed firing-pin having an annular shoulder thereon, and a trigger device comprising a lever-arm having a lateral projection thereon adapted to engage said annular shoulder when the lever-arm is raised and thereby raise the firing-pin, said projection having a beveled portion and said lever arm being adapted to yield laterally when the beveled portion of said projection reaches said annular shoulder, whereby the firing-pin is suddenly released and forcibly impacted against the cartridge, and a connection between said lever-arm and said operating lever of the call mechanism whereby the same are actuated simultaneously.

5. A fire-alarm box containing a telegraphic call mechanism comprising an operating lever, a detonating device comprising a firing-pin holder, a barrel hingedly mounted on said holder and adapted to receive an explosive cartridge, a spring-pressed firing-pin

slidably mounted in said holder and normally bearing upon the cartridge in said barrel, and a trigger device comprising a lever-arm adapted to engage said firing-pin and retract the same against the tension of its spring, means for suddenly releasing said firing-pin from engagement with said lever-arm, and a connection between said lever-arm and said operating lever of the call mechanism whereby the same are actuated simultaneously.

Signed at St. Louis, Missouri, this 15th day of June, 1909.

THOMAS HAINES.

Witnesses:
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