

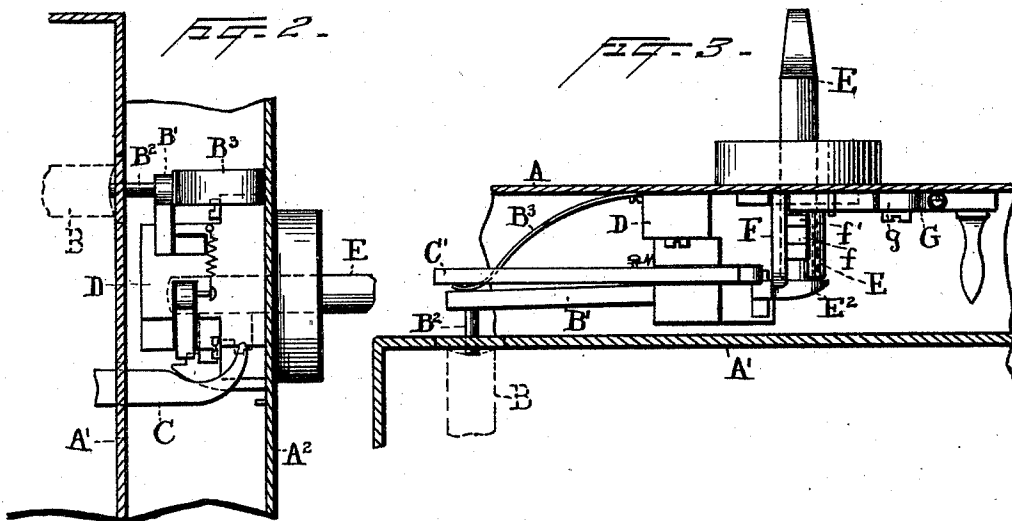
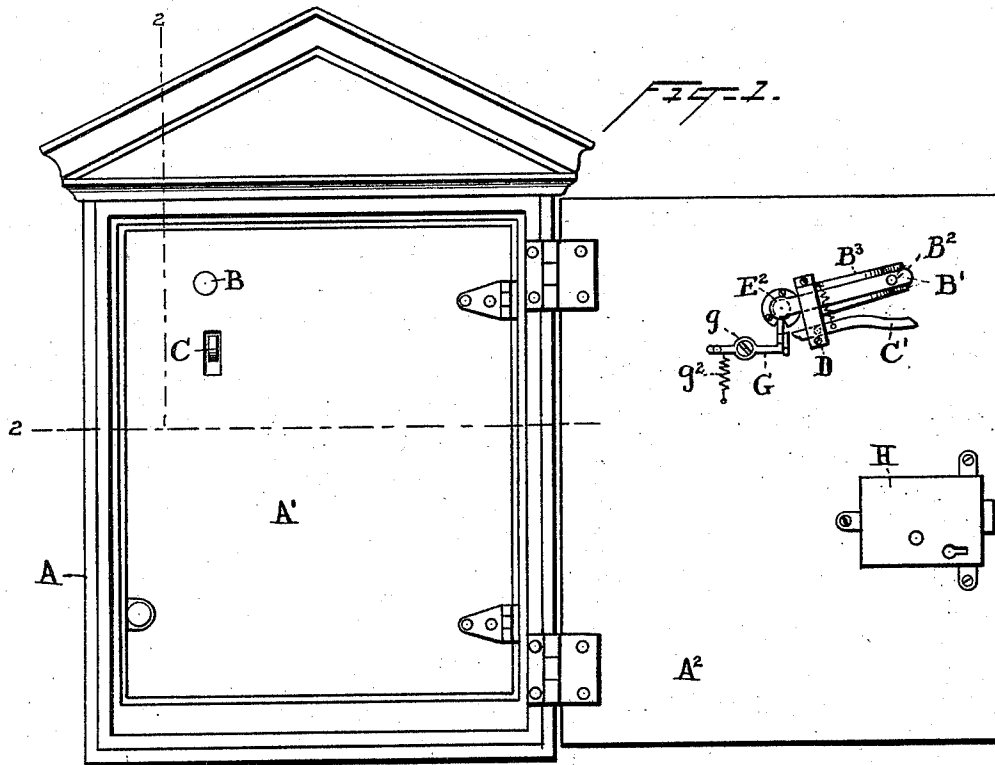
(No Model.)

2 Sheets—Sheet 1.

W. H. KIRNAN.  
FIRE ALARM BOX.

No. 518,722.

Patented Apr. 24, 1894.



Witnesses  
Lewis A. Clark.  
Geo. B. Clark.

Inventor  
William H. Kirnan  
By *His* Attorneys *J. S. Long*

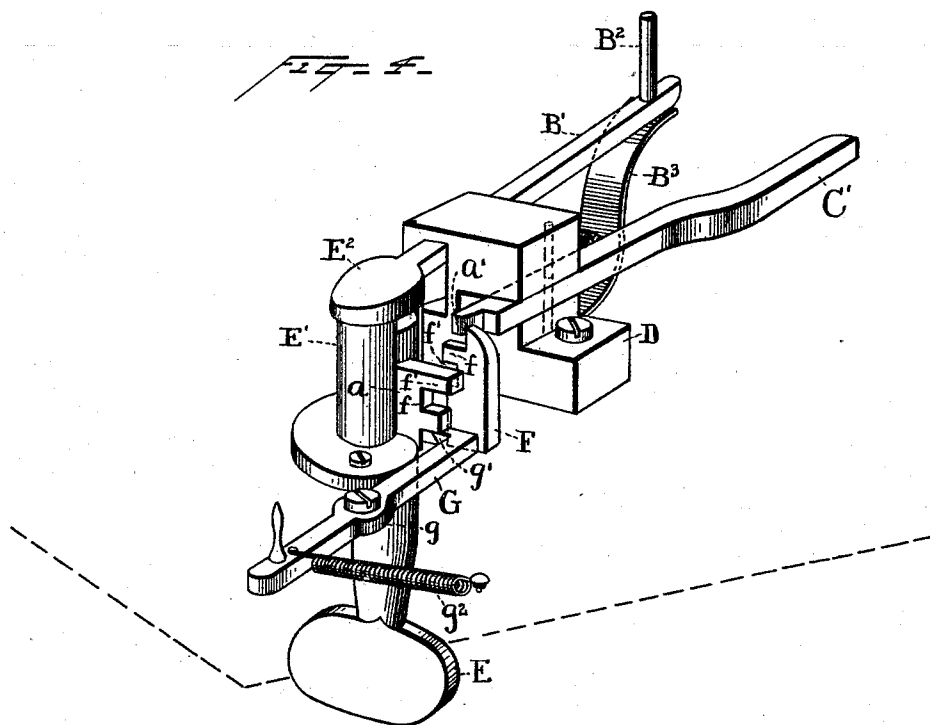
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Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. KIRNAN, OF BAYONNE, NEW JERSEY, ASSIGNOR TO THE GAMEWELL FIRE ALARM TELEGRAPH COMPANY, OF NEW YORK, N. Y.

## FIRE-ALARM BOX.

SPECIFICATION forming part of Letters Patent No. 518,722, dated April 24, 1894.

Application filed January 31, 1894. Serial No. 498,570. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. KIRNAN, a citizen of the United States, residing at Bayonne, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in Fire-Alarm Boxes, of which the following is a specification.

The object of my invention is to provide fire-alarm or police-signal boxes with a simple and efficient mechanism, through which the signal mechanism within the box can be operated by a "citizen's key" that is, to send in an alarm without the necessity of opening the outer door of the box, and my invention is more especially designed for use with non-interfering boxes which are disabled upon opening the outer door if any other box on the line is sending in a signal.

To accomplish the objects of my invention I provide a pivoted lever (called hereinafter for convenience of reference, the disabling lever), which engages the disabling device or a pin or projection co-operating therewith. I provide another pivoted lever (called hereinafter for convenience of reference the signal lever) which engages with the usual pull or hook for starting the signal mechanism. The key-hole for the citizen's key is placed in such position that upon inserting the key the end thereof will strike the disabling lever and remove same from engagement with the disabling device. The movement of this lever is equivalent to opening or closing the door as heretofore. When the key is inserted to the proper point, it is turned, whereupon the bit of the key engages with the signal lever, tilting the same and pulling the hook which starts the signal mechanism. If it is attempted to operate the box while a signal is passing over the line and such box is disabled by tilting the disabling lever, the tilting of the signal lever and pulling of the hook will have no effect since the box is temporarily disabled as is well understood. The inward pressure on the key is then relaxed so that the disabling lever will again place the box in its normal condition, whereupon the key can be pressed inward again, disengaging the disabling lever as before, and should there then be no signal passing over

the line the box will not be disabled, and upon turning the key and tilting the signal lever the hook is pulled and the signal transmitted. To prevent the removal of the citizen's key, I provide a locking or trapping lever the end of which or a finger thereon stands in the path of the bit of the key. The end or finger of this lever is beveled on one side so that the lever will be tilted by the key when it is inserted and when the bit of the key has cleared the lever it is returned to its normal position by a spring, thus placing the lever in the path of the bit of the key and preventing its removal, since the lever can only be tilted by the key while being inserted. To release the key the box is opened by the proper person and the lever tilted by hand. In order to permit the operation of a box with a certain key only, I provide a suitable guard in the turning path of the bit of the key.

In illustrating my invention I have shown it applied to a non-interfering box having a non-interfering magnet whose armature is held in the field of the magnet by a spring-stud or projection co-operating therewith. This stud or projection passes through the door of the inner case and heretofore was pushed inward by a rigid projection on the inside of the door of the outer case to place the armature in the field of the magnet. By applying my invention, this stud is pushed inward by the disabling lever so that by tilting this lever and removing it from engagement with the stud the box is disabled should a signal be passing over the line. It will therefore be seen that the box can be disabled or restored without opening the door of the outer case.

In the drawings, Figure 1 is a view of the fire-alarm box provided with my invention, the outer door being open. Fig. 2 is an enlarged sectional view on the line 2-2 of Fig. 1, the outer door being closed. Fig. 3 is a similar view on the line 2-3, looking upward; and Fig. 4 is an enlarged perspective view of the mechanism through which the box is operated by a citizen's key.

A is a fire-alarm box having an inner door A' and an outer door A<sup>2</sup>.

B is the spring stud or projection which co-

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operates with the armature of the non-interfering magnet, and C is the pull or hook which releases the signal mechanism.

Secured to the inside of the outer door is a block or standard D, upon which is pivoted the lever B', having a pin or projection B<sup>2</sup> adapted to engage with stud B to push it inward and hold the armature of the non-interfering magnet in the magnetic field of said magnet. Lever B' is pressed forward against stud B by a spring B<sup>3</sup> secured to door A<sup>2</sup>. As before stated, the armature of the non-interfering magnet was heretofore held within the field of said magnet, by a rigid projection from the door A<sup>2</sup>. A lever C' is also pivoted upon standard D and adapted to engage with the pull C to start the signal mechanism.

E is a citizen's key. A key-way E' is secured upon the inside of door A<sup>2</sup> and directly in line with the key-way is an enlarged part E<sup>2</sup> of lever B'.

Upon inserting a citizen's key to send an alarm, the end of the key engages with enlargement E<sup>2</sup>, and lever B' is tilted, thus removing projection B<sup>2</sup> from engagement with stud B, and permitting the armature of the non-interfering magnet to fall out of the magnetic field of said magnet, should any other box in the system be in operation. If, however, no box in the system is in operation, the armature will not fall away from the non-interfering magnet and the box can be operated by turning the key so that bit a of same will engage with the end a' of lever C' and tilt the same. The end of lever C' being in proximity to pull C, the same will be drawn downward, thereby releasing the signal mechanism which transmits the signal.

F is the guard designed to prevent the pulling of the box with an incorrect or false key. I provide the guard with projections f which are of a size and shape corresponding to depressions f' in the key bit, and the guard has depressions f' corresponding to projections f' on the key bit, so that only a key having projections and depressions corresponding with the projections and depressions of the guard can be employed in operating the box.

To prevent the removal of a key after sending in an alarm I provide a lever G, pivoted at g to the inside of the door A<sup>2</sup> and having a beveled finger g' which is in line with the bit of the key E. Upon inserting the key, the projections on bit a engage the beveled end of finger g' and tilt the lever against the pull of spring g<sup>2</sup>, which returns the lever to its normal position with the finger in the path of the bit when the key is inserted. Upon attempting to remove the key, the bit will strike

the flat side of the finger, and since the bit cannot now force the lever back it will be trapped, and cannot be removed until the door A<sup>2</sup> is opened by the proper person and lever G tilted by hand.

In practice I prefer to make the citizen's key and the key for opening the usual lock H of the outer door of the same shape in order that a citizen's key may be used to either operate the mechanism above described or open the door to permit the pull C to be drawn downward by hand. The object of this is that in case the mechanism above described should become disabled there would be no delay in sending the alarm through failure to open the box, or should a citizen attempt to open the box and fail to accomplish the same either by reason of the door being wedged or secured through accident or frost or any of the conditions usually met with, the citizen may operate the mechanism above referred to.

What I claim is—

1. The combination with a signal box having a non-interfering or disabling device controlled by the movement of the box door, of means operated by a citizen's key for operating the disabling device and pulling the box, without opening the door, substantially as set forth.

2. The combination with a signal box, of a lever engaging the disabling device, and a lever for operating the pull of the box, both levers being operated by a key, substantially as set forth.

3. The combination with a signal box, of a lever engaging the disabling device, and a lever for operating the pull of the box, one of said levers being operated by the act of inserting a key and the other being operated by the act of turning the key, substantially as set forth.

4. The combination with a signal box, of a lever engaging the disabling device, a lever for operating the pull of the box, both said levers being operated by a key, and a lever for trapping said key, substantially as set forth.

5. The combination with a signal box, of a lever engaging the disabling device, a lever for operating the pull of the box, both said levers being operated by a key, and a guard permitting the operation of said levers by a certain key only, substantially as set forth.

This specification signed and witnessed this 30th day of January, 1894.

WILLIAM H. KIRNAN.

Witnesses:

W. PELZER,  
GEO. B. CROUK.