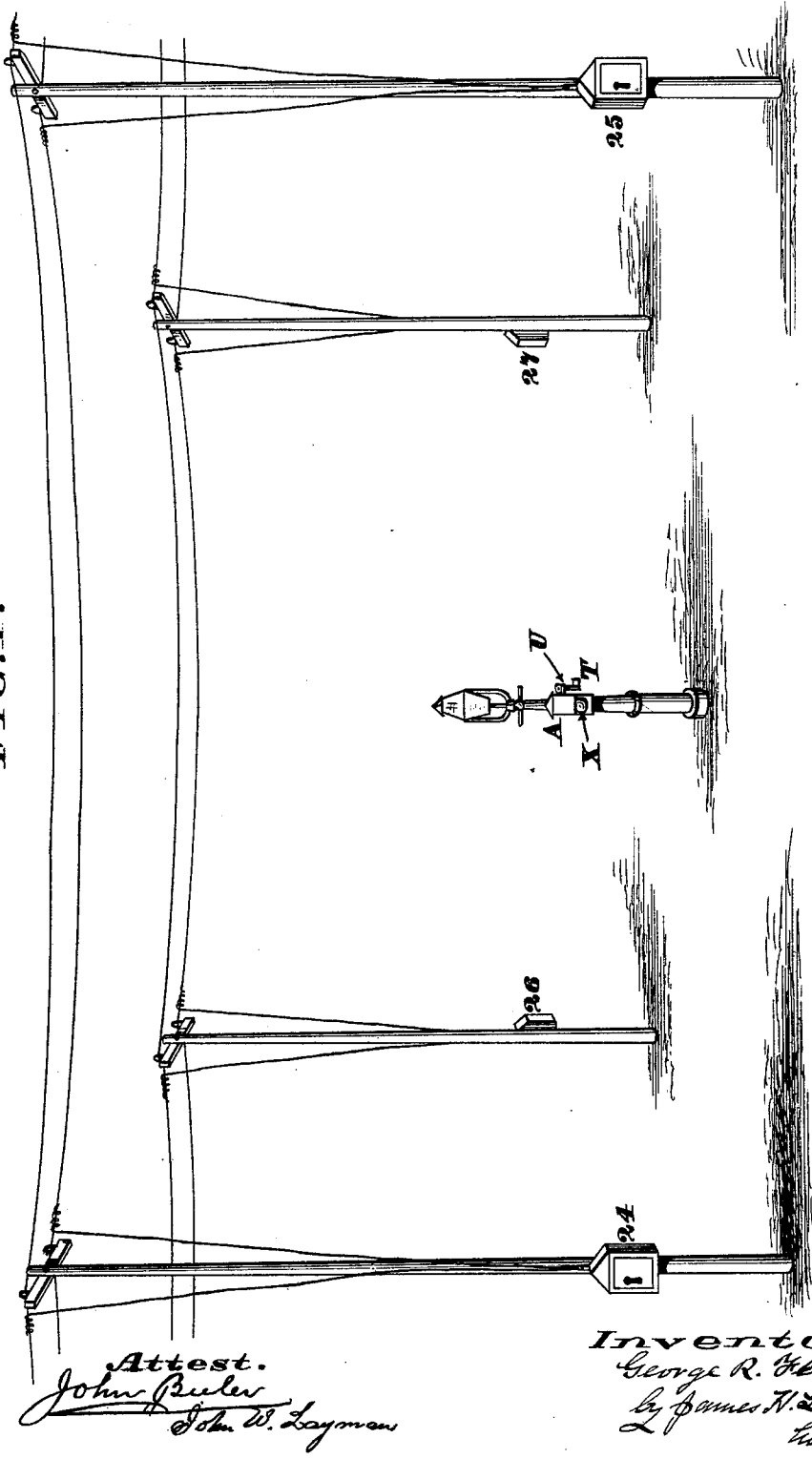


G. R. FLOYD.
Fire Alarm Telegraph.

No. 233,223.

Patented Oct. 12, 1880.

FIG. 1.



Attest.

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Inventor.

George R. Floyd
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FIG. 2.

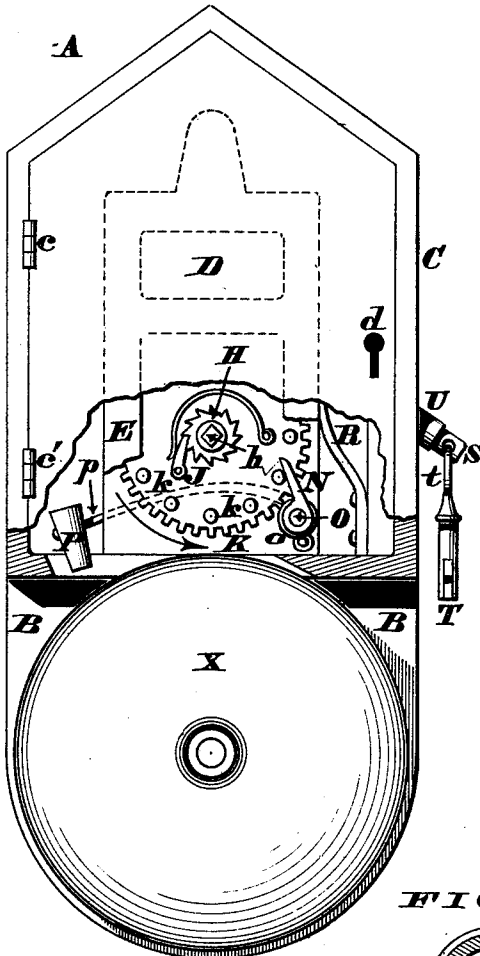


FIG. 3.

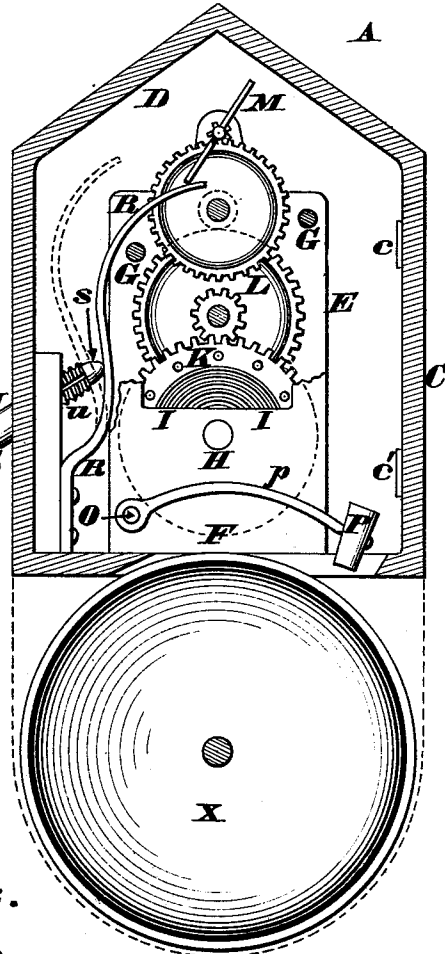


FIG. 6.

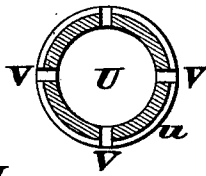


FIG. 4.

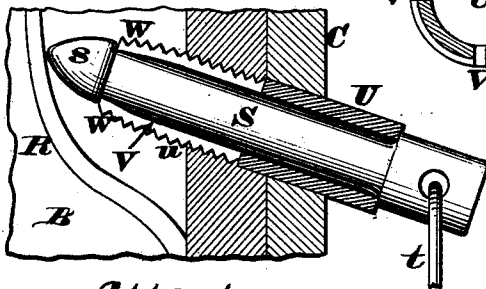


FIG. 5.



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Inventor.
George R. Floyd
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his Attorney.

UNITED STATES PATENT OFFICE.

GEORGE R. FLOYD, OF CINCINNATI, ASSIGNOR OF TWO-THIRDS OF HIS
RIGHT TO GEORGE L. PHILLIPS, OF DAYTON, OHIO.

FIRE-ALARM TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 233,223, dated October 12, 1880.

Application filed January 19, 1880.

To all whom it may concern:

Be it known that I, GEORGE R. FLOYD, of Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Fire-Alarm Telegraphs, of which the following is a specification.

In fire-alarm telegraphs as usually constructed a system of signal-boxes is employed either for transmitting notice of a fire to the central station or for striking an alarm directly on the fire-bells; and in order to prevent the signaling mechanism of such boxes being tampered with it is necessary to lock the outer doors of the same and place the keys in charge of some responsible persons residing or doing business in the immediate neighborhood of the boxes; but it frequently happens that the custodians of the keys are away from home, or else the keys are misplaced at the very moment when their use is most urgent. These and other similar causes frequently occasion delays of from five to ten minutes in turning in an alarm, which serious loss of time allows the fire to obtain such headway as to render its extinguishment a very difficult matter. This well-known objection to the ordinary system of fire-telegraphs has suggested the idea of allowing the keys to remain in the locks at all times, and making suitable provision whereby the mere act of opening a signal-box will cause a local alarm to be sounded, so as to notify all of the neighbors, and thus prevent, as far as possible, the giving of false alarms. This system is not especially objectionable in day-time when the streets are more or less thronged; but during the night, or where the signal-boxes are located in the outskirts of a city, such a system is merely the substitution of one difficulty for another, as experience has proven that it induces a great number of false alarms. These frequent false alarms are due to the fact that any malicious person can open a box, turn in an alarm, and then run off before the neighbors can be aroused or a policeman appear on the spot. Such being the defects incidental to the ordinary fire-alarm telegraph and to the proposed method of overcoming the same, I have, after much study, devised a system which insures prompt alarms, and at the same time renders

it an easy matter to detect any person in the act of tampering with the apparatus.

To accomplish these results I employ a special appliance, termed the "local-alarm box," which device is separate and distinct from the signal-boxes proper, and has no connection either electrically or otherwise with said signal-boxes or with the telegraph or its accessories. This local-alarm box may be fastened to a wall, or fence, or lamp-post, or building, or any other structure, and has engaged with it, by a suitable keeper or detent, a key capable of opening the doors of the signal-boxes, said key being at all times accessible to any adult. Furthermore, this local-alarm box is provided with a train of clock-work or any other striking apparatus and a gong or bell, said train being liberated, so as to produce a violent ringing of the gong, the instant the key is withdrawn from the aforesaid retaining device.

The local-alarm box is preferably located at a place equidistant between two adjacent signal-boxes, or it may be so situated as to be convenient for three or more of said boxes.

My system being thus arranged, it is evident the local-alarm box acts as the custodian of the key, and serves, also, as a monitor to give notice of the withdrawal of said key, no matter whether it is to be used for giving a true or a false alarm of fire.

Having thus indicated the principal feature of my invention, I will now proceed to give a detailed description of the preferred method of operating the same, reference being made to the annexed drawings, in which—

Figure 1 is a perspective view, showing one of my local-alarm boxes situated so as to be serviceable for four adjacent signal-boxes. Fig. 2 is a front elevation of the preferred form of local-alarm box, the lower portion of the same being broken away and shown in section. Fig. 3 is a vertical section of said box taken in the plane of the gong-hammer, and looking toward the front of the box. Fig. 4 is an axial section, showing the key-plug engaged with the keeper or detent of the box. Fig. 5 is a side elevation, showing said plug disengaged from its keeper; and Fig. 6 is a transverse section of said keeper or retaining device.

Referring to Fig. 1, the numerals 24, 25, 26, and 27 represent four adjacent signal-boxes of any approved construction, which boxes contain circuit-wheels or other devices for transmitting the alarm of fire, and are provided with outer doors secured with a customary lock and key. Furthermore, these boxes are electrically connected with proper registering apparatus at the central station, or else they are adapted to strike the alarm directly on the fire-bells by what is known as the "automatic system."

A represents my local-alarm box, said box being situated so as to be convenient to two or more adjacent signal-boxes, but having no electrical or other connection with the signal-boxes or wires or other attachments of the telegraph. As shown in Fig. 1, this local-alarm box is attached to a lamp-post, so as to render said box conspicuous at night; but it may be secured to a wall, or fence, or house, provided such structures are not situated near one of the signal-boxes proper.

B represents the back plate of the local-alarm box, said plate being slotted or perforated, or provided with ears, or otherwise adapted to be secured to a permanent structure. Attached to said plate, and projecting from the front side of the same, is the box proper, C, to which is hinged, at $c\ c'$, a door, D, that is locked by a key inserted through the hole d . Housed within this box is a front pillar-plate, E, and a rear one, F, these two members E and F being united with posts G, and having journaled in them a train of clock-work. This train consists, essentially, of a driving-shaft, H, whose front end has a square arbor, h , to receive a key, wherewith is wound up the mainspring I, that runs said train. J is the click of this driving-shaft, and K is a master-wheel journaled on the latter, said wheel being adapted to communicate motion to the fly M through a series of gears and pinions, L. Projecting from the face of this wheel K are short stumps or tappets, k , adapted to operate the lever or arm N when said wheel rotates in the direction of the arrow seen in Fig. 2. This lever N is fastened to the front end of a rock-shaft, O, around which latter is coiled a spring, o , that maintains said lever in contact with the appropriate tappet. The inner end of this shaft carries the helve p of hammer P, which latter is thrown forcibly against the bell or gong X every time the lever N escapes from contact with one of the tappets k . Secured within the box is a leaf-spring, R, whose free end is adapted to arrest the rotation of fly M, and thus lock the train while said spring maintains its normal position. This spring is kept in lock with the train by a plug, S, whose inner end has a conical head, s , while its outer end has coupled to it the bow t of a key, T, which key is adapted to open any of the signal-boxes of the telegraph. The key-plug traverses a tubular catch, or keeper, or detent, or other retaining device, U, secured to the

box C by a thread, u , or otherwise, the inner portion of said keeper being provided with a number of longitudinal slots, V, so as to render it comparatively elastic. Furthermore, the extreme inner end of this keeper is sprung inwardly at W, so as to cause said keeper to grasp the plug S immediately behind its head s , as more clearly seen in Fig. 4.

My local-alarm box is operated in the following manner: The door D is first opened by a proper officer, and the mainspring I is wound up by means of a key applied to the arbor h of shaft H, after which act plug S is forced into the keeper U. Door D is then closed and locked by the officer. Evidently the stress of said spring has now a tendency to run the clock-work, but the train is securely locked and cannot possibly move as long as the leaf-spring R is kept in contact with the fly M by the pressure of key-plug S. Furthermore, it is evident that while the box is in this normal position said plug is securely grasped by the elastic end of keeper U, which hold of said keeper is sufficient to prevent the plug falling out or being pulled out with a slight jerk. As soon as a fire breaks out any citizen or policeman can, by a sudden jerk, pull the plug out of the keeper U, and then run to the nearest signal-box and open the door of the latter with the key T, after which act the alarm is turned in in the usual manner.

Immediately on the withdrawal of plug S the leaf-spring R flies back to the position indicated by dotted lines in Fig. 3, thus disengaging the upper end of said spring from the fly M and leaving the mainspring I at liberty to exert its full force in driving the train K L M. Consequently, the master-wheel K, through the instrumentality of tappets k , arm N, shaft O o , and hammer P p , causes a violent ringing of gong X, thereby arousing the neighbors and enabling them to detect the person who has abstracted the key from its proper place, and thus prevent him turning in an alarm if there is no cause for one.

It will thus be seen that by placing my local-alarm box at some distance from the signal-box it is an easy matter to detect or arrest a person before he can run to the nearest signal-box and give a false alarm. After the fire is out the officer can again open the door D, wind up the clock-work, reinsert the key-plug S, lock the door, and then leave the box in proper condition for use at any moment.

The above is a description of the preferred form of my system for providing against false alarms of fire; but I do not propose to limit myself to this precise construction, as it is evident the leading features of my invention will be attained by any arrangement of apparatus, whereby a local-alarm box, situated somewhat distant from a signal-box proper, is made to act as the custodian of the key for said signal-box, and is adapted to give audible notice the instant said key is withdrawn for any purpose.

In some cases my local-alarm box may be situated at the extreme upper end of one of the telegraph-poles, or on the chimney of a house, and have a rod or wire carried down and connected to keeper U in such a manner as to insure the descent of said rod and the liberation of the clock-work as soon as the key T is withdrawn.

Other modifications of the details of construction will readily suggest themselves to any person at all conversant with the apparatus to which my invention relates.

One obvious change can be effected by omitting the plate-spring R and prolonging the plug S, so as to cause it to engage with the fly M or other member of the train. By this arrangement said plug will be free from the stress of spring R, and will not be so liable to become disengaged from the keeper U.

I am aware it is not new to apply a local-alarm apparatus directly to a signal-box in order that a preliminary alarm may be sounded as a precautionary measure immediately at the box itself before the operator proceeds to turn in the secondary or effective alarm, as this construction of apparatus is seen in Letters Patent No. 164,406, issued June 15, 1875, to R. N. Tocker. Therefore, I expressly disclaim any local-alarm device when applied directly to a signal-box proper.

I claim as my invention—

1. In combination with a fire-alarm telegraph, a local-alarm box provided with a key

accessible to the public and adapted to unlock the doors of the signal-boxes proper, said local-alarm box being wholly disconnected from the signal-boxes and having a gong or bell sounded by suitable mechanism set in motion by the withdrawal of said key, as herein described and set forth.

2. In combination with a fire-alarm telegraph, a local-alarm box wholly disconnected from the signal-boxes proper, and provided with a gong or bell, which gong is operated by a train of wheels driven by a spring or weight, said train being released and allowed to act as soon as the key is withdrawn from said local-alarm box, as herein specified.

3. In combination with a local-alarm box of a fire-alarm telegraph, the driving-shaft H, mainspring I, click J, master-wheel K, train L, fly M, striking devices N O P p, and spring R, which spring is caused to lock said train when a key is inserted in the local-alarm box, the withdrawal of said key serving to free the spring R from the train, and thereby sound the gong, as herein described.

4. The combination of key-plug S s and keeper or retaining device U V W, as herein described, and for the purpose stated.

In testimony of which invention I hereunto set my hand.

GEORGE R. FLOYD.

Attest:

JAMES H. LAYMAN,
WM. J. T. WILSON.