A. W. GRAY.

Non-Interfering Fire-Alarm Telegraph-Box.

No. 220,754. Patented Oct. 21, 1879.

Fig. 1.

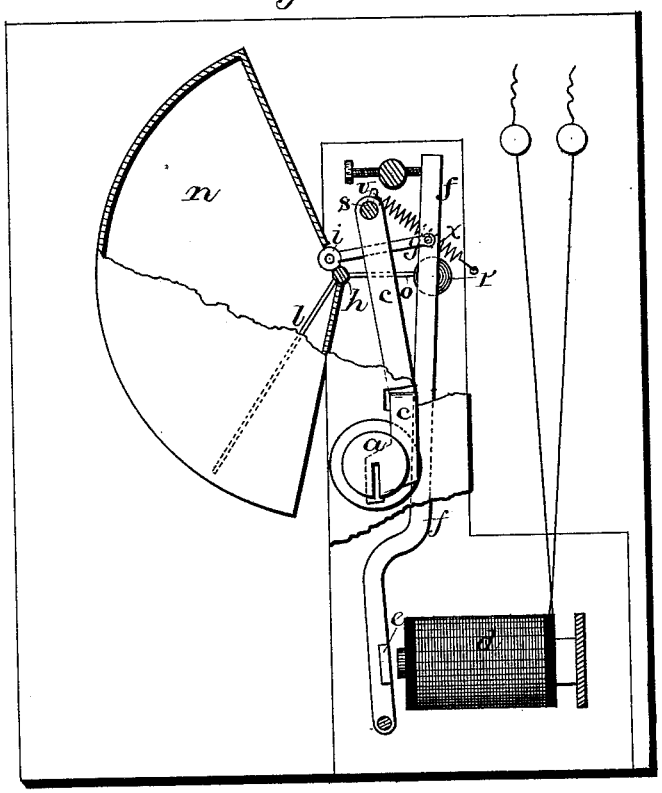
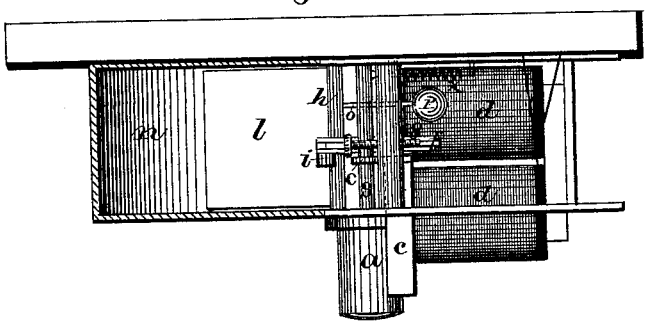


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

ADELBERT W. GRAY, OF CARDINGTON, OHIO.

IMPROVEMENT IN NON-INTERFERING FIRE-ALARM-TELEGRAPH BOXES.

Specification forming part of Letters Patent No. **220,754**, dated October 21, 1879; application filed August 20, 1879.

To all whom it may concern:

Be it known that I, ADELBERT W. GRAY, of Cardington, in the county of Morrow and State of Ohio, have invented certain new and useful Improvements in Fire-Alarm-Telegraph Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in fire-alarm and district telegraphs; and it consists in the combination of a weight or fan that is operated by a lever fastened to an armature, and a device for closing the lock for turning in a signal, so that no key can be inserted into the lock for the purpose of turning in a signal while a signal is being given from some other box in the circuit, as will be more fully described hereinafter.

Figure 1 is a front elevation of my invention, partly in section. Fig. 2 is a plan view of the same, also partly in section.

This invention is intended as an improvement upon my application for a fire-alarm signal-box now pending before the office; and as all of the mechanism for turning in an alarm, the contact-breaker, and the clock mechanism for operating the contact-breaker are to be the same as is there shown, I only show in this application those parts that constitute my present invention.

a represents the lock through which the signal is turned in; *c*, the lever or plate which closes the lock, so that no signal can be turned in while a signal is being given from some other box in the circuit; *d*, a magnet, and *e* its armature, having secured to it the lever *f*, all of which are the same as shown in my pending application, and in which no invention is here claimed. Near the upper end of this lever *f* is fastened a connecting-rod, *g*, which has its other end fastened to the arm *i* on the rocking shaft *h*, so that each time the armature *e* is attracted toward the magnet *d* the lever *f* will cause the shaft to turn partially around in its bearings. Secured to the outer side of this shaft is a fan, *l*, which, as the shaft is turned partially around, rises upward, so as to form a resistance to the movement of the lever *f*, and thus cause it to move so slowly that the lever will not have time to operate the plate *c*, and thus unclose the lock between the strokes of the alarm that has been turned in. As here shown, this fan *l* is made to move in an inclosing-case, *n*, which should be made almost air-tight, so that as the fan is raised upward it will compress the air in the case, and thus cause the air to form an elastic resisting medium, so as to more perfectly control the movements of the fan. While this case is very desirable it is not absolutely necessary, and therefore may be entirely dispensed with, if so desired. Instead of the fan a weighted lever may be used, if so preferred, as it can be made to answer the same purpose.

To the inner side of the rocking shaft *h* is secured an arm, *o*, upon which is secured a movable weight, *r*, for the purpose of counterbalancing the fan or weight, and thus adjusting their movements to any desired power of battery. As the fan or lever *l* rises upward to a certain point an arm on the shaft *h*, the head of the pivot which fastens the connecting-rod *g* to the arm *i*, or any other suitable device, strikes against the plate or lever *c*, and moves it far enough to one side to leave the lock entirely free for the entrance of a key to turn in an alarm. This plate or lever *c* is fastened at its upper end to the rocking shaft *s*, which is provided with an arm, *v*, to which is fastened the spring *x*, for the purpose of keeping the plate or lever *c* forced into the slit in the side of the lock as soon as the plate is left free to move, and thus keep the lock closed all the time a signal is being given.

The operation is as follows: As long as the circuit is closed the armature is held in contact with the helix of the magnet, and the plate or lever *c* pushed to one side, so as to not close the lock, and thus every box in the circuit is ready to have a signal turned in through it. As soon as a signal is turned in from any box in the circuit the circuit is at once broken, and immediately all the armatures *e* are drawn away from their magnets by the weight or gravity of their fans or levers, when the plate or lever *c* in every box in the circuit at once closes the lock, so that no other signal can be turned in, and thus interfere with the one be-

ing given. At each stroke of the alarm the armature is attracted toward the helix of its magnet in every box in the circuit; but, owing to the resistance of the fan or lever, the lever *f* has not time to reach the plate *c* and open the lock before the contact is again broken. In this manner the locks are kept closed in all of the boxes until the signal being given is completed, when the armatures return to their magnets in all of the boxes, and thus force the levers or plates *c* to one side, so as to leave the locks free to have another signal turned in through them.

Having thus described my invention, I claim—

1. The combination of a lock, a plate or lever for closing the lock, a magnet, an armature operated by the magnet and having a lever, *f*, connected thereto, with a fan or weighted lever for forming a resistance to the movement of the lever, substantially as shown.

2. In a fire-alarm signal-box, a fan or weighted lever, *l*, in combination with a plate for closing the lock and a mechanism for moving the plate, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 20th day of August, 1879.

A. W. GRAY.

Witnesses:
W. S. D. HAINES,
J. W. GARNER.