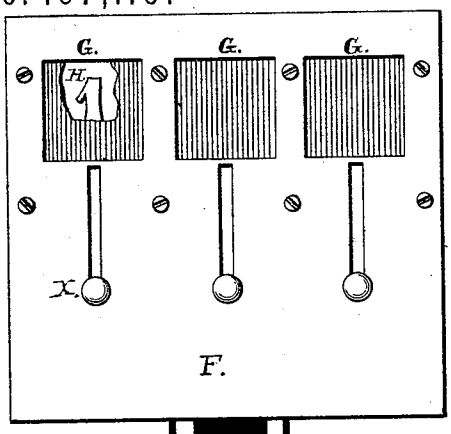
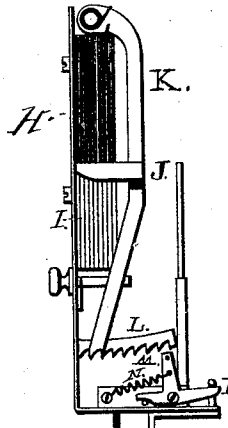
D. L. PIERCE & F. W. GRISWOLD.

Fire-Alarm Regsister.

No. 167,116. Patented Aug. 24, 1875.





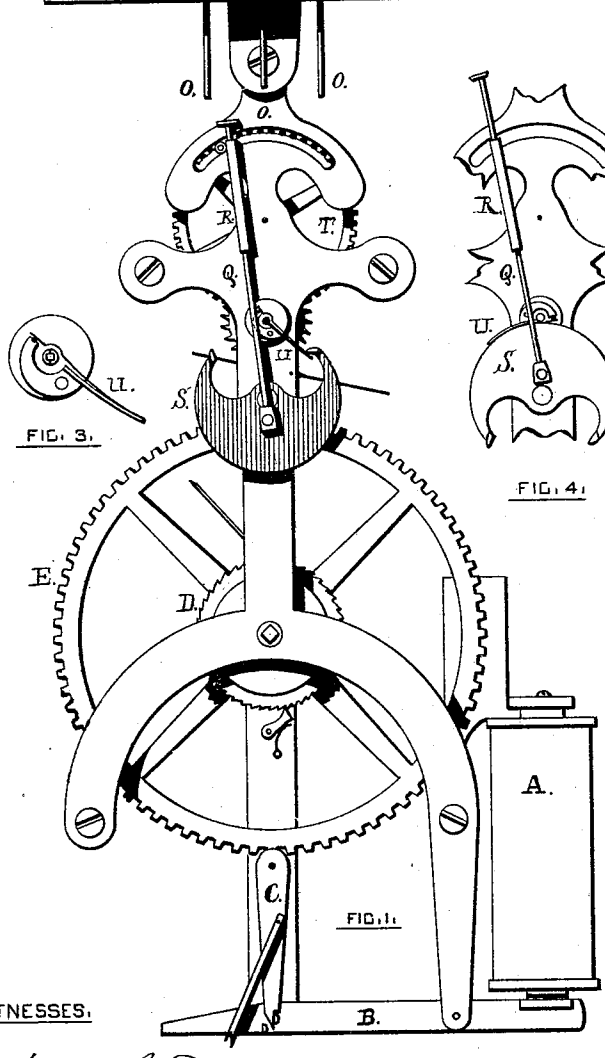


FIG. 3.

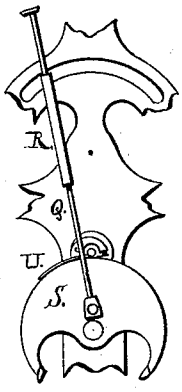


FIG. 4.

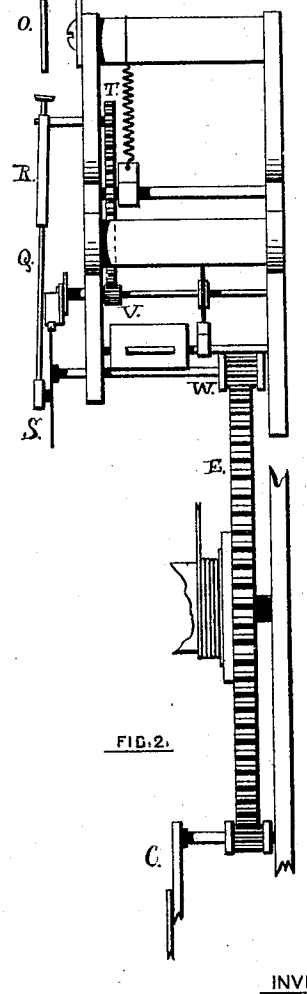


FIG. 2.

WITNESSES.

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DEXTER L. PIERCE AND FRANK W. GRISWOLD, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN FIRE-ALARM REGISTERS.

Specification forming part of Letters Patent No. **167,116**, dated August 24, 1875; application filed July 22, 1875.

To all whom it may concern:

Be it known that we, DEXTER L. PIERCE and FRANK W. GRISWOLD, both of Providence, in the State of Rhode Island, have invented a new and Improved Fire-Alarm Register; and we do hereby declare that the following specification, taken in connection with the drawing, making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is a front elevation of our invention. Fig. 2 is a side view of the same. Figs. 3 and 4 are detached parts of the same.

The object of our invention is to produce a fire-alarm register, which shall record the number of the box from which the alarm proceeds, in figures; and consists in the mechanism for that purpose hereinafter described, combined with and operated by the fire-alarm mechanism now in use.

The parts of the fire-alarm mechanism now in use, and shown in Figs. 1 and 2 of the drawing, are the coil A, the arm B, catch-lever C, ratchet-wheel D, and cog-wheel E. The opening of the circuit causes the vibration of the arm B and releases the catch-lever C, which revolves through the action of the weighted cog-wheel E, and communicates motion to the hammer, which delivers its blow upon the gong.

Our recording mechanism, which we will now proceed to describe, is connected with the alarm mechanism, from which it receives its motive power.

F is a face-plate, having three rectangular apertures, G, in the rear of each of which is a series of rectangular plates, H, held in perpendicular guides I, and numbered upon their face from one to nine consecutively, the front plate being a blank, and the rear one stationary. Each series of numbered plates H is held in a position covering its respective aperture G by a cross-bar, J, attached to and at right angles with a lever, K, the latter being secured to the face-plate and held in a perpendicular position by a spring. The levers K are each provided with a rack, L, attached to their lower extremity and at right angles thereto, upon which works a pin, M, upon the double-armed lever N, the latter being actuated by the rod O, to which an upward motion is imparted in the manner hereinafter described. One arm of the lever N is held under the rod P, which causes the other arm and pin M to throw back the rack L, and, consequently, the lever K and cross-bar J, with each upward movement of the rod O, a distance equal to the thickness of one of the plates H, which, being thus released, slides downward in its guides, and exposes the number upon the next plate. The rod O is actuated by the rod Q, which works through a sleeve, R, and is attached to the catch-hook S. The rod Q is carried forward so as to strike either of the rods O by a spring upon the wheel T, the latter being connected with the sleeve R, the movement of the wheel T being controlled by the action of the catch-hook S upon the lever U through the pinion V. Upon the same shaft with the catch-hook S is a pinion, W, into which works the cog-wheel E of the alarm mechanism.

Having described the different parts of the alarm and registering mechanisms, and shown their connections with each other, it remains for us to show the operation of our invention, which is as follows:

As the cog-wheel E moves forward, as described, it rotates through the pinion W the catch-hook S, which raises the rod Q, as shown in Fig. 4, until it strikes the rod O and releases one of the first series of plates, H, in the manner already set forth, when it stops. Supposing, for the sake of illustration, the number of the box from which the alarm proceeds to be 327. The hook S, after a short pause, rotates again in time to catch and turn back the lever U, which carries back the rod Q to its former position, and causes it again to strike and raise the same rod O, which exposes Fig. 2; the same operation being repeated to present Fig. 3. The hook S, at each of the last two rotations described, moves back the lever U, and, consequently, the wheel T and rod Q, a distance equal to that which it moves forward during the time the lever U is free, thus compelling the rod Q to strike and raise three times in succession the rod O. At the completion of the third stroke the hook S pauses double the time and arrests the lever U upon its second revolution instead of the first, as

before. During this pause the rod Q will be carried forward as the wheel T revolves a sufficient distance to place the rod Q in a position to strike and raise the next rod, which it does twice in the same manner as before described, thus exposing number two of the second series of numbered plates. The hook S is then left in the same position as before, and during the second interval the rod Q is brought to bear in the same manner upon the third rod, and rotating seven times, as before, exposes the number 7, thus completing the number of the box, viz, 327, after which the rod Q continues to move forward a sufficient distance to clear the third rod during the repetition of the alarm. The speed of the wheel T is regulated by a suitable escapement and fan.

The mechanism having now performed its work, it remains to set it for the next alarm. The plates are again placed in their former position by raising the bar X, which carries them above the cross-bar J, which again drops into place. The rod Q is moved back to its original position, the lever U being constructed so as to snap by the points of the hook S.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The three series of numbered plates G, sliding in suitable guides, and so operated as to designate the number of the box struck.

2. The levers K, having a cross-bar, J, and rack L, in combination with the lever N and rod O, the whole combined and operating together, in the manner substantially as described, for the purposes specified.

3. The hook S, actuated by the wheel E, in combination with the rod Q, for the purpose of raising the rod O, in the manner and for the purposes described.

4. The combination of the hook S, the rod Q, the wheel T, and the lever U, the whole arranged and operating together in the manner substantially as described.

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Witnesses:
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