

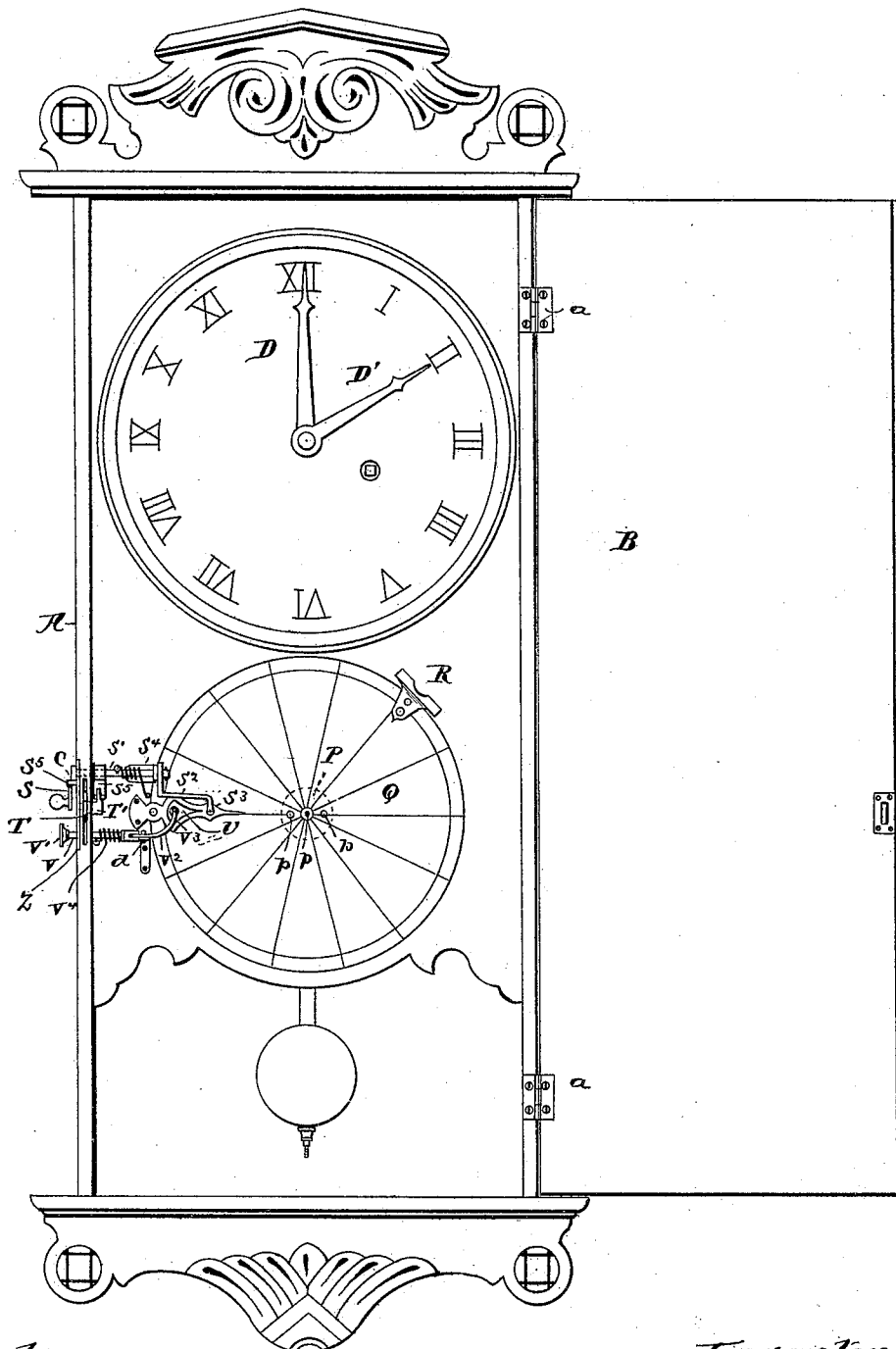
(No Model.)

3 Sheets—Sheet 1.

A. NEWMAN.
WATCHMAN'S TIME RECORDER.

No. 530,446.

Patented Dec. 4, 1894.



Attest
C. W. Benjamin.
Matthew Lowry.

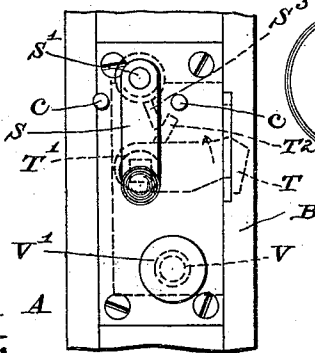
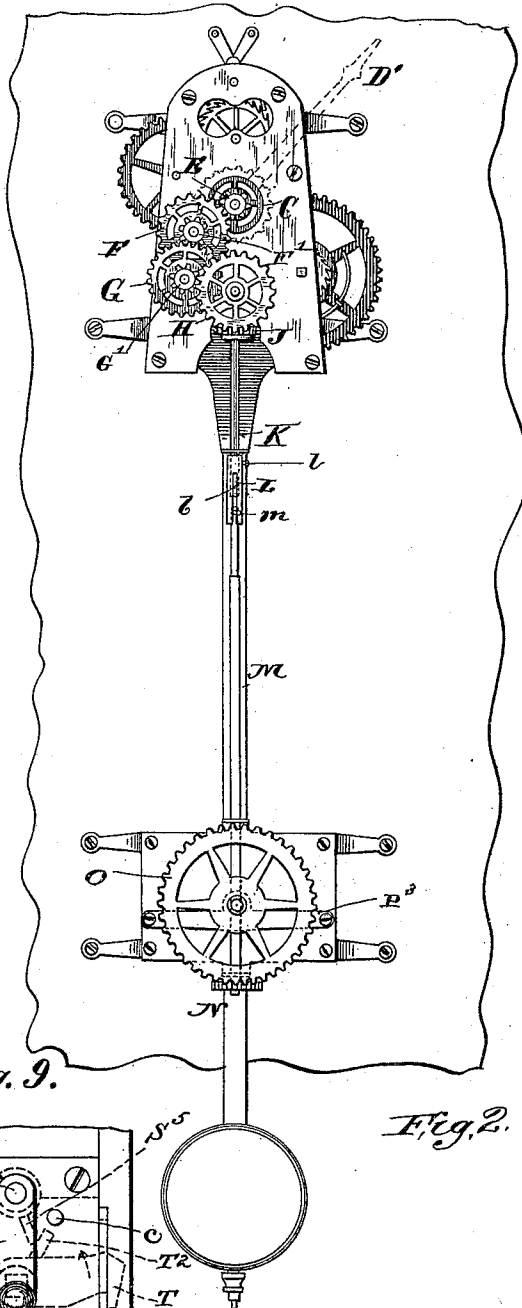
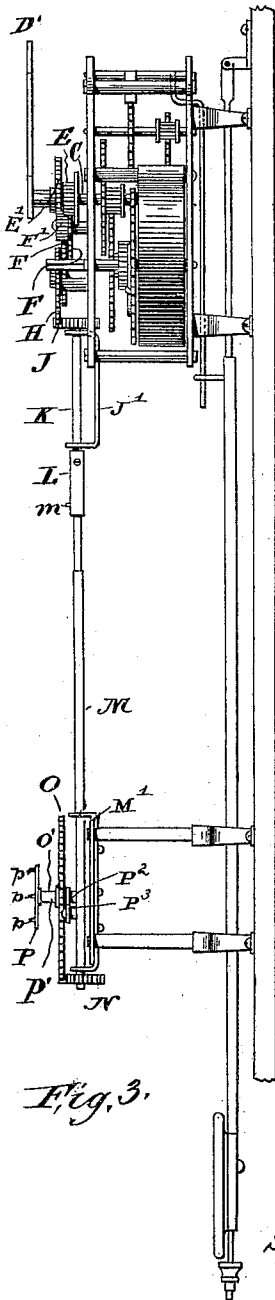
Fig 1

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3 Sheets—Sheet 2.

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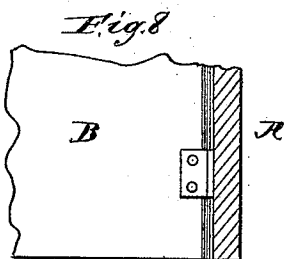
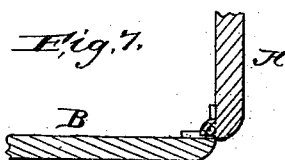
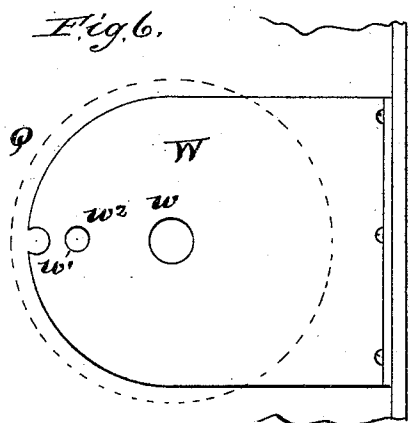
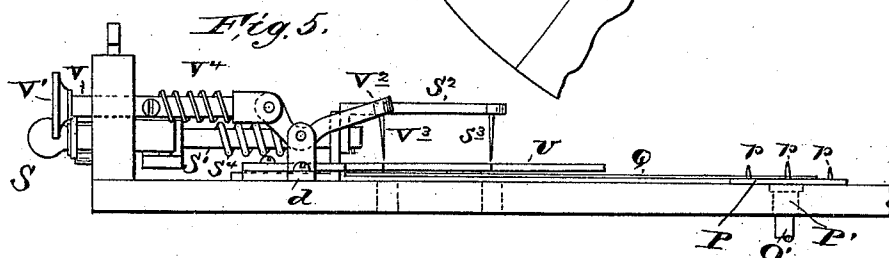
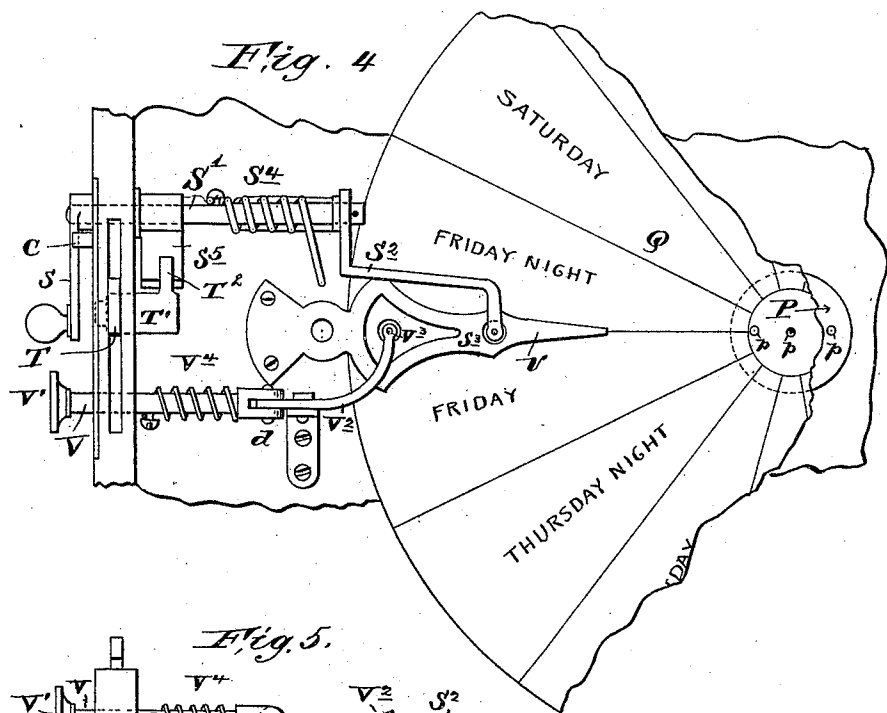
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UNITED STATES PATENT OFFICE.

ABRAHAM NEWMAN, OF CHICAGO, ILLINOIS.

WATCHMAN'S TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 530,446, dated December 4, 1894.

Application filed October 17, 1893. Serial No. 488,442. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM NEWMAN, of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Watchmen's Time-Detectors, of which the following is a specification.

I will describe the improvement in detail and then point out the novel features in the claims.

Referring to the drawings:—Figure 1 is a front elevation of a time-detector embodying my improvements, the same being shown open. Fig. 2 is a front elevation of the internal mechanism. Fig. 3 is a side elevation of said mechanism. Figs. 4 and 5 are detail views of the mechanism for recording the opening and closing of the casing or cabinet. Figs. 6, 7 and 8 are views showing modifications of parts of the detector. Fig. 9 is a side elevation of a portion of the casing or cabinet.

Like letters of reference indicate like parts in all the figures of the drawings.

A designates the casing or cabinet, in which the mechanism is arranged; and B designates the door which is hinged at one side as indicated at *a*.

Within the case is arranged an ordinary clock movement, to whose shaft C the usual minute hand is affixed. Mounted upon this shaft is a small pinion E and a spur-gear E', and the pinion E meshes with and drives a spur-gear F arranged upon a stub-shaft, and the spur-gear E' meshes with a pinion F' also arranged upon said stub-shaft. The pinion F' engages with and drives a spur-gear G, and the latter is arranged upon a stub-shaft which also carries a pinion G', said pinion G' engaging with and driving a final spur-gear H of the series of speed-decreasing gears. Supported in a yoke J' or other suitable bearing below the clock mechanism is a short vertical shaft K, at whose upper end there is secured a spur-gear J that meshes with the final pinion H of the series of speed decreasing gears, and is therefore driven by the aforesaid clock mechanism at a proper relative speed.

Below the rod K and coupled therewith by a coupling-sleeve L is an extension M of said rod K, the same at its lower end being suitably journaled, in the present instance in a

bearing yoke M'. The coupling-sleeve L is longitudinally slotted and is fastened at its upper end to the rod K by a binding screw 55 *l*. The upper end of the rod M enters the sleeve L, and a pin *m* passes through the rod M and the slot in the sleeve L.

The lower end of the rod M has secured to and designed to rotate therewith a spur-gear 60 N which spur-gear is arranged in a horizontal plane and engages with and drives a larger spur-gear O, the latter being arranged upon a stub-shaft P² that extends from a horizontal yoke P³.

A sleeve P' projects from the gear O and is loosely mounted on the shaft, and has affixed to its outer end a disk P which carries a series of engaging-points or spurs *p*. These spurs are designed to engage with a paper or other disk or dial Q, which is to be removably and temporarily seated upon the disk P.

R designates a guide or retainer for the dial Q, the said retainer extending over the dial so that the latter is freely movable thereunder. 75

S designates an escutcheon plate projecting rigidly from the outer end of a horizontal rock-shaft S', which is journaled in the side wall of the casing A opposite the dial Q. An arm S² extends from the inner end of the rock-shaft S' and said arm carries a pricking point S³ at its inner end. A coiled spring S⁴ is arranged upon the rock-shaft S' and exerts a tendency to normally hold the escutcheon-plate over the key-hole. The swinging movement of the said escutcheon-plate is limited in the present instance by stop-pins *c c*. 85

T designates a hasp of ordinary construction that is seated for movement within and projects from a slot formed in the edge of the side wall of the casing A below the rock-shaft S'. The hasp is rigidly mounted upon and projects from a horizontally disposed oscillating key-shaft T', the said shaft being capable of being operated by means of a properly formed key. This key-shaft T' has an angularly disposed arm T² at the inner end thereof extending into the path of the rock-arm S⁵ that projects from the rock-shaft S'. 95

A sheet-metal guide-plate U extends over the dial Q at a point about opposite that occupied by the guide R, and like the latter permits of a free movement of the dial thereunder. 100

A push-rod V is located for reciprocation in the side-wall of the casing immediately below the key-shaft, said push-rod having a head or button V' at its outer end. A bell-cranked lever V² is pivoted at its angle between bearing ears d, and the outer end of this lever is provided with a pricking point V³ located upon its under side. The outer end of the lever V² is pivotally connected to the push-rod V.

A coiled spring V⁴ is arranged upon the push-rod V and has a tendency to force the push-rod outward and thus elevate the outer end of the bell-cranked lever and raise the pricking point V³ thereof from contact with the dial Q.

This completes the construction of my invention, and I will now proceed to describe its operation.

The dial Q having been secured to the disk P in the manner described, or otherwise, and the case or cabinet being closed and locked, the clock movement will through the train of speed-decreasing gearing serve to operate or rotate the dial relatively to the rotations of the minute-hand carrying shaft. In turning the rod K the coupling L will similarly operate the rod M and with it the gears N and O. The rotation of the gear O will cause a turning of the sleeve P' and thereby the disk P and dial Q.

It will be the duty of the watchman for whose benefit the apparatus is employed to press the button of the push-rod at designated intervals, for instance each hour. When he presses this button the opposite or inner end of the push-rod will oscillate the bell cranked lever V² so that the pricking point V³ will descend and passing through a suitable hole left or provided in the guard U will perforate the dial Q. This dial Q it will be understood is suitably subdivided to indicate hours and fractions thereof. Hence the puncturing of the dial at the particular point will record the presence of the watchman at that particular time indicated.

Should the watchman be unfaithful and attempt to unlock the case in order to falsely puncture the dial it will be necessary for him in order to gain access to the key-hole to swing the escutcheon-plate S from over the same. Such movement will rock the shaft S', thereby causing the rock-arm S² to descend and the pricking device S³ carried thereby will after passing through a suitable opening left in the guard-plate U puncture the dial Q. By this means a record of the act of tampering with the apparatus is indicated upon the dial and at a point differing in position and at once recognizable from the legitimate punch made by the pricking device operated through the medium of the push-rod.

If perchance the watchman should gain access to the key-hole without recording his act in the manner stated, and should insert a key designed to operate the lock he would yet find himself unable to succeed or gain access

to the interior of the casing without recording this fact, in that the hasp T which is operated by the key for unlocking purposes, would in its movement and that of the key-shaft oscillate or depress the arm T² against the rock arm S⁵ which lies in its path, and thus cause the rock-shaft S' to oscillate or rock its arm S² to descend and its pricking point S³ to puncture the dial.

The guide U is provided with holes, which as before stated, serve for the passage of the pricking points S³ and V³, and furthermore should said dial when punctured be disposed to adhere to the points the said guide will serve to separate the points from the dial by a retention of the latter in proper position upon its disk during a withdrawal of the pricking points therefrom.

The movement illustrated in the present instance is what is commonly known as a seven-day movement and by reason of the intermediate speed-decreasing gearing therebetween and the dial-shaft, the dial Q will make but one complete revolution in seven days. In this way the dial Q will record accurately the watchman's performance of his work for a week. Of course the movement of the wheel O might be so regulated that it would make a revolution in any desired space of time, as for instance a day. In such instance it would be necessary to subdivide the dial Q in accordance with the fractions of a day.

If thought desirable the plate Z might be made wide enough to project up above the side of the case A, so that it would be impossible to attempt to push back the hasp T with a knife or other thin instrument.

If the post of the watchman covers much territory it will be found desirable to place these detectors at various points on the route to be patrolled by the watchman so that he will be obliged to pass from place to place at stated intervals in order to record his presence. I may, however, accomplish the same result by placing one detector at a central point, and have station boxes at various points on the route to be traversed by the watchman electrically connected to the central station detector. I have shown one method of accomplishing this result in my United States Letters Patent No. 445,410, dated July 7, 1891.

Instead of the guides R and U, I might use a metal plate W (Fig. 6) hinged to the inside of the case and concealing the greater part of the dial Q from observation. This plate W will have a hole w cut in it so that the plate will not drag on the pins p, p, p. It will also have other holes w' and w² cut in it through which the pins S³ and V³ may pass to puncture the dial Q. It is intended that this plate shall be hinged to the side of the case opposite to that on which the registering devices are arranged, so that the plate can be thrown back to obtain access to the dial Q only when the face of the case is open.

In Figs. 7 and 8 I have shown methods of

hinging the face of the case, different from that illustrated in Fig. 1. In Fig. 7 the edges of the case and face are rounded off where they are hinged to each other and the hinges are arranged inside of the case. In Fig. 8 the face of the case is fitted into the case and the hinges are also inside the case. These arrangements will prevent the attendant from tampering with the hinges, although the hinges shown in Fig. 1 might be made proof against tampering by merely heading the pins which connect the two sections of the hinge together.

Having described my invention, what I claim is—

1. The combination with a casing and a clock movement of upper and lower vertically opposite bearing yokes J' and M', the vertical shaft M arranged in said bearing yokes, the gears J and N arranged on the upper and lower ends of said shaft M the former gear being mechanically connected with the clock movement whereby said shaft M is operated, the horizontally disposed bearing yoke P³, the stub shaft extending from the same, the hollow shaft arranged on the stub-shaft, the spur-gear O arranged on the hollow shaft, and the dial-carrying disk P arranged on the end of the hollow shaft, substantially as specified.

2. The combination with the dial-carrying shaft and its dial, of the overlapping guards, the casing to which the guards are secured, the rock-shaft journaled adjacent to the dial and one of the guards, and having a pricking-point carrying rock-arm a spring for normally holding the rock shaft and a pricking-point carrying rock-arm normally out of contact with the dial and above an opening formed in the guard, substantially as specified.

3. The combination with a casing, a dial-shaft, its dial and a perforated guard overlapping the dial and provided with an opening above said dial, of a reciprocating push-rod arranged in the wall of the casing, a spring for normally maintaining the rod outward from the casing, a bell-cranked lever fulcrumed at its angle and pivoted at one end to the inner end of the rod and extending over the opening in the guard, and a pricking-point arranged on the inner end of the bell-cranked lever over said opening, substantially as specified.

4. The combination with a casing, a dial-shaft, means for operating the same, and a dial, of a push rod yieldingly mounted in the

wall of the casing, a bell-cranked lever fulcrumed at its angle in the casing and pivoted at one end to that of the push-rod, and a recording device arranged at the inner end of said lever and over the dial, substantially as specified.

5. The combination with a casing, a dial-shaft, means for operating the same, and a dial arranged upon the shaft, of a rock-shaft journaled in the wall of the casing and adapted to be oscillated, a spring coiled upon the shaft for yieldingly holding the same, and a rock-arm secured to the shaft and extending over the dial and provided with a recording device normally supported by said spring out of contact with the dial and means for rocking the rock-shaft, substantially as specified.

6. The combination with a cabinet having a door, a dial-shaft arranged in the cabinet, mechanism for operating the shaft, a dial carried by the shaft, of a key-shaft journaled in the wall of the casing adjacent to the edge thereof, a hasp carried by the key-shaft and adapted to engage and lock the door, an arm extending from the key-shaft at an angle thereto and within the casing, a rock-shaft journaled in the wall of the casing adjacent to the key-shaft, an escutcheon-plate on the outer end of the rock-shaft, a recording arm at the inner end of the rock-shaft, a spring for normally supporting the escutcheon over the outer end of the key-shaft and elevating the recording-arm from contact with the dial, and a second arm extending from said rock-shaft and lying in the path of the arm of the key-shaft substantially as specified.

7. The combination with a casing having a door, a movable dial arranged in the casing and means for operating the dial, of a rotatable key-shaft, a hasp connected therewith for engaging the door and locking the same, a rock-shaft journaled in the casing adjacent to the key-shaft, an escutcheon carried by the outer end of the rock shaft, a recording-arm carried by the inner end of the rock-shaft and normally supported out of contact with the dial and devices between the key-shaft and rock-shaft whereby a movement of either will cause an operation of said recording arm, substantially as specified.

ABRAHAM NEWMAN.

Witnesses:

J. R. BOWEN,
MATTHEW BOWEN.