(No Model.)

# W. H. HOLLAR & H. W. PIDGEON.

## STOP MECHANISM FOR TIME LOCKS.

No. 571,319. Patented Nov. 10, 1896.

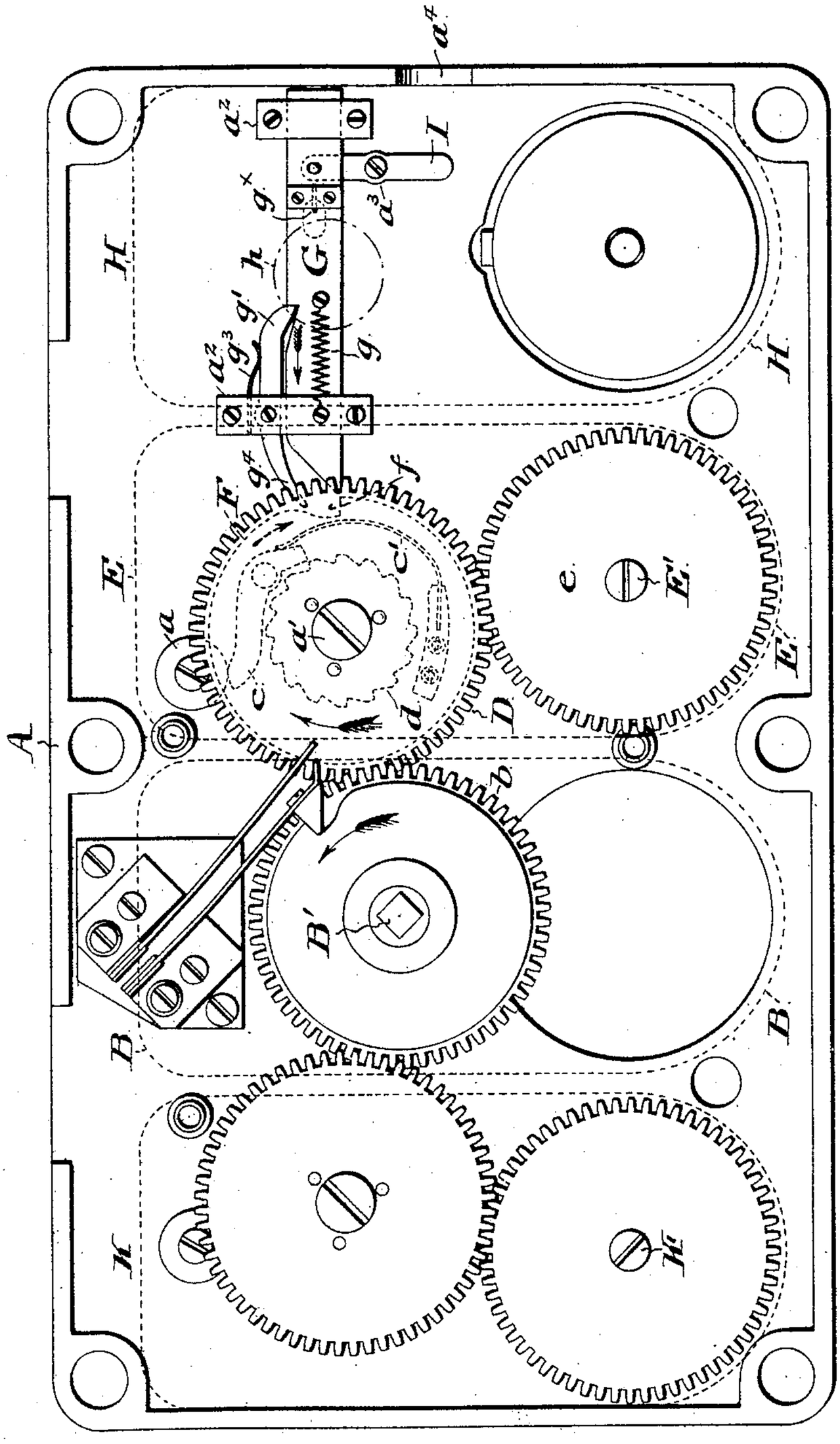


FIG. 1.

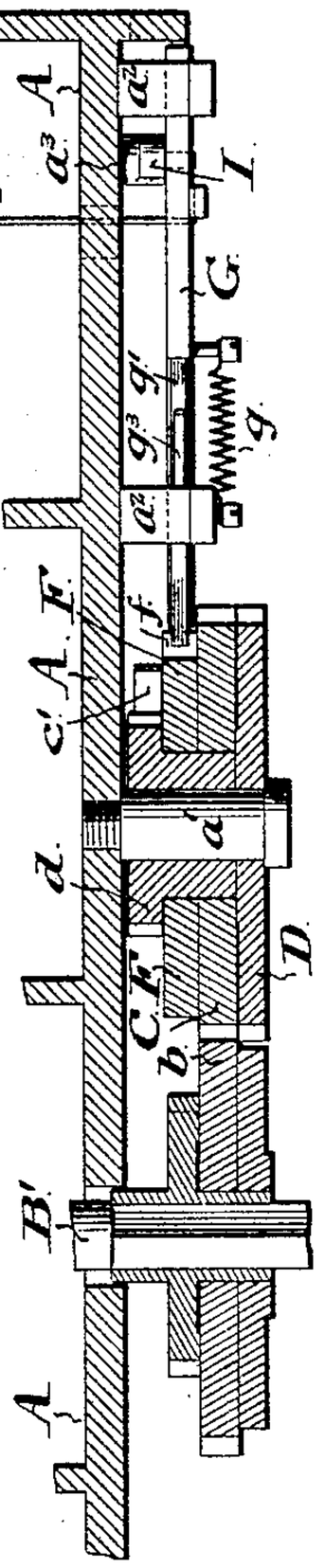


FIG. 2.

WITNESSES:
James H. Bell.
Henry N. Paul Jr.

INVENTORS
W. H. Hollar and
H. W. Pidgeon —
By J. J. & C. Maley Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM H. HOLLAR, OF PHILADELPHIA, PENNSYLVANIA, AND HARRY W. PIDGEON, OF BOSTON, MASSACHUSETTS; SAID PIDGEON ASSIGNOR TO SAID HOLLAR.

## STOP MECHANISM FOR TIME-LOCKS.

SPECIFICATION forming part of Letters Patent No. 571,319, dated November 10, 1896.

Application filed December 27, 1895. Serial No. 573,453. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM H. HOLLAR, of Philadelphia, in the State of Pennsylvania, and HARRY W. PIDGEON, of Boston, in the State of Massachusetts, have invented certain new and useful Improvements in Stop Mechanisms for Time-Locks, whereof the following is a specification, reference being had to the accompanying drawings.

Our present invention is particularly applicable to rewinding devices of the general character set forth in Letters Patent of the United States No. 545,020, issued August 20, 1895, to the herein-named William H. Hollar, together with George L. Weaver and A. Kennedy, the said Weaver and Kennedy assignors to said Hollar. The invention of said patent comprises means whereby the clock mechanism of a time-lock may be rewound without manual access to its inclosure and the operating moment of the time-lock be thus postponed. The ordinary time-lock described in connection with the invention in said patent comprises a plurality of clock-movements. Any single one of said clock-movements, when in a proper condition, is capable of occasioning the complete operation of the time-lock, viz., releasing the locking devices proper after a predetermined interval, said release being effected through suitable connective parts. As is well known, such plurality of independent clock-movements is employed in order to lessen the risk of failure of the time-lock mechanism as a whole from the disability of any one actuating clock-movement. Where such rewinding devices are to be employed, it is desirable for convenience of construction to apply the rewinding mechanism to less than the whole number of said clock-movements. It is therefore necessary to provide means for stopping the remaining individual clock-movements (which are not to be rewound) in order to prevent the premature release of the locking devices. In said patent such stop mechanism is provided. It is, however, so related to the rewinding mechanism of the movement selected for rewinding as to stop the other movements at the beginning of the rewinding action. If, therefore, said rewinding mechanism should fail of proper operation, it is possible that by said arrangement the time-lock mechanism as a whole might be rendered inoperative, owing to the stoppage of all its actuating clock-movements. To avoid this contingency is the object of our present invention, which, broadly speaking, consists in combining with the rewinding mechanism for a selected movement stop mechanism for the remaining movements in such relation as that it shall only become operative after the rewinding mechanism has completed a definite cycle of operation.

In the drawings, Figure 1 is a rear elevation of a portion of a time-lock provided with a winding mechanism of the character described in the said patent and combining therewith a convenient embodiment of our present invention. Fig. 2 is an irregular longitudinal section through certain parts shown in Fig. 1.

In said figures, A is a recessed block, being the portion of a time-lock to which the clock mechanism is directly secured. B is the winding-motor, whose character may be such as set forth in said patent. Upon the main arbor B′ of said motor is secured a gear *b*, which engages with an intermediate gear C, and said gear C is provided with a pawl *c* and a spring *c′*. Said pawl is adapted to engage with a ratchet *d* upon the intermediate gear D. Said gear D engages directly with the gear *e*, secured upon the main arbor E′ of a clock-movement E, which is in this instance one of those selected for rewinding by the motor B, as above described. Similar operative connections may be provided for engagement with the arbor K′ of another clock-movement K, so as to rewind this also, but to avoid prolixity of description only the former group is referred to in detail.

During the ordinary operation of the time-lock the pawl *c* is kept from engagement with the ratchet *d* by a roller *a*, secured upon the block A, as indicated by the dotted lines of Fig. 1. The motor B and the intermediate gear C remain stationary, while the main arbor E′ of the clock-movement E rotates freely in either direction, respectively, as its spring runs down or is manually wound. The said

free rotation of the clock-arbor E′ and its gear *e* incidentally occasions the idle rotation of the intermediate gear D and ratchet *d* within the stationary gear C upon the stud *a′*, secured to the block A. When, however, the motor-arbor B′ and gear *b* are caused to rotate in the direction to wind the clock-movement E, as indicated by the arrow in Fig. 1, the gear C, engaged with the gear *b*, rotates, and the pawl *c*, secured to said gear C, being thus freed from the roller *a*, engages with the ratchet *d*, secured to the gear D. The gears C and D are thus coupled, and further rotation thereof causes the rotation of the gear *e* by reason of its engagement with said gear D. The clock-movement E is thus rewound by the rotation of its gear *e* and main arbor E′ until the various parts reach the normal position of disengagement of said pawl *c* and ratchet *d*.

The above-described arrangement and operation of parts are utilized to occasion the operation of our present invention, as follows: Secured to the normally stationary gear C is the disk F, having a notch *f*. Suitably mounted upon the block A in bearings $a^2$ $a^2$ is a slide-bar G. The slide-bar G is provided with a spring *g*, tending to press the slide G against the periphery of the disk F. The slide G is, however, normally withdrawn from contact with the disk F and detained by the engagement of the tripping-lever *g′* with the notch $g^2$ upon said slide. The said tripping-lever *g′* is pivoted in the bracket $a^2$ upon the block A and provided with the spring $g^3$. The opposite end $g^4$ of said lever *g′* lies in the notch *f* of the disk F. Secured upon the slide-bar G is a stopping-pin $g^\times$, which is conveniently opposed to a toothed wheel *h* of the clock-movement H, which it is desired to stop. When, therefore, the operation of the rewinding-motor causes the intermediate gear C and the disk F to rotate, as indicated by the dotted arrow of Fig. 1, the lever *g′* is tripped by its engagement in the notch *f* of the disk F, and the slide-bar G thus released is pressed against the periphery of the disk F by the spring *g*. This preliminary movement of the slide G is not, however, sufficient to bring the stop-pin $g^\times$ into engagement with the toothed wheel *h* of the clock-movement H. The normal running of the clock-movement H therefore continues until the gear C and the disk F have completely rotated into the position of disengagement of the pawl *c* and ratchet *d*, whereupon, slide G being pressed into the open notch *f* thus presented by the disk F, the stop-pin $g^\times$ is brought into engagement with the wheel *h*, and the clock-movement H instantly stops.

If the intermediate gears C and D and disk F are subsequently rotated by the winding-motor B, the slide G is thrust back by the inclined side of the notch *f*, and the clock-movement H is temporarily released and runs until the notch *f* is again presented to the end of the slide G by the rotation of the disk F. This reverse movement of the slide G is not, however, sufficient to cause its engagement by the tripping-lever *g′*.

The slide G may be manually reset in its normal position by the lever I, which is pivoted to the block A at $a^3$ and is conveniently accessible through an opening $a^4$ in the block A.

It will be observed that the various parts just described are so related that the clock-movement H, which is not to be rewound, continues to run in condition to actuate the time-lock while the selected movements E and K are being rewound, and that the clock-movement H is only stopped when the said other movements E and K are freed from engagement with the winding mechanism and have resumed a condition proper to continue the normal running of the time-lock.

We do not desire to limit ourselves to the precise form and arrangement of our invention which we have described, nor is it essential that any particular number of movements should be selected for rewinding. While, therefore, in our claims we have found it convenient to use the singular number as applied to such selection, it must be understood that we do so without restrictive intention.

We claim—

1. In a time-lock, the combination of a plurality of clock-movements; a motor adapted to rewind a selected movement; stop mechanism for the remainder of said clock-movements; actuating devices for said stop mechanism positively related to the motor; and means substantially as set forth whereby said stop mechanism is inoperative during the period of winding action of said motor, but permitted to act as a stop, only after an effective winding action thereof, substantially as set forth.

2. In a time-lock, the combination of a plurality of clock-movements; a motor; means connective of said motor and a selected clock-movement; stop mechanism for the remainder of said clock-movements; actuating devices for said stop mechanism operatively related to said motor; and a disk operatively connected with said motor and engaging with said stop mechanism, whereby said stop mechanism is prevented from operating during the winding action of said motor upon said selected clock-movement, substantially as described.

3. In a time-lock, the combination of a plurality of clock-movements; a motor; means connective of said motor and a selected clock-movement; stop mechanism for the remainder of said clock-movements; actuating devices for said stop mechanism operatively related to said motor; and a notched disk operatively connected with said motor and engaging with said stop mechanism, whereby a complete winding action of said motor upon the selected clock-movement permits said

stop mechanism to act upon the remainder of said clock-movements, substantially as set forth.

4. In a time-lock, the combination of a plurality of clock-movements; a motor; means connective of said motor and a selected clock-movement; stop mechanism for the remainder of said clock-movements; actuating devices for said stop mechanism operatively related to said motor; a tripping-lever by which said stop mechanism may be normally detained; a disk operatively connected with said motor and engaging said tripping-lever, said disk also temporarily engaging said stop mechanism itself, whereby the winding action of said motor trips said lever to initiate the action of said stop mechanism, but immediately engages and restrains said stop mechanism until a complete winding action has been effected, substantially as set forth.

WILLIAM H. HOLLAR.
HARRY W. PIDGEON.

Witnesses as to W. H. Hollar:
RICHD. CADBURY,
ANTHONY KENNEDY.
Witnesses as to H. W. Pidgeon:
GEO. W. ADAMS,
HENRY H. ROSE.