

**F. H. PIAGET**  
**Watchman's Time-Recorders.**

No. 149,333.

Patented April 7, 1874.

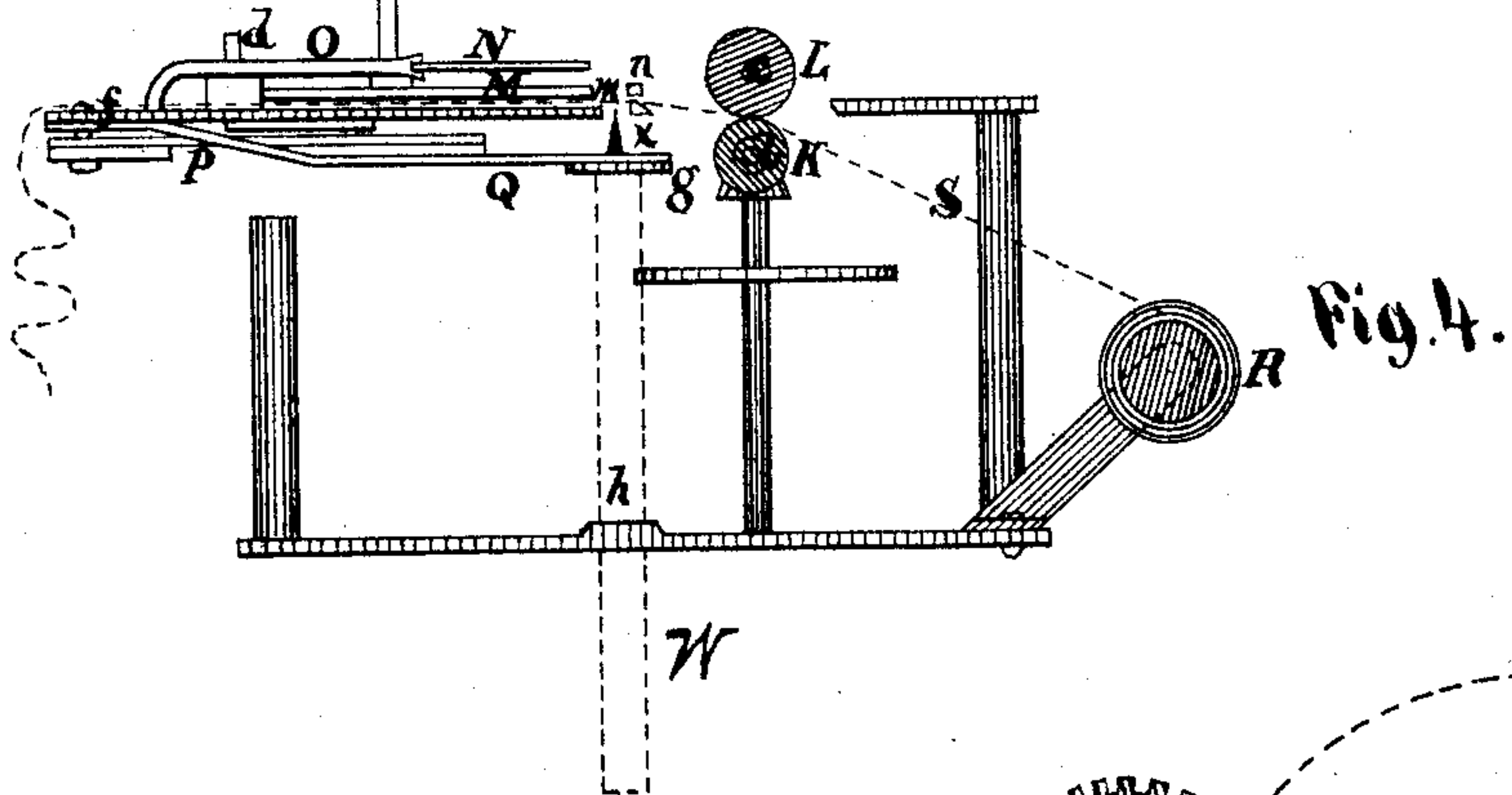
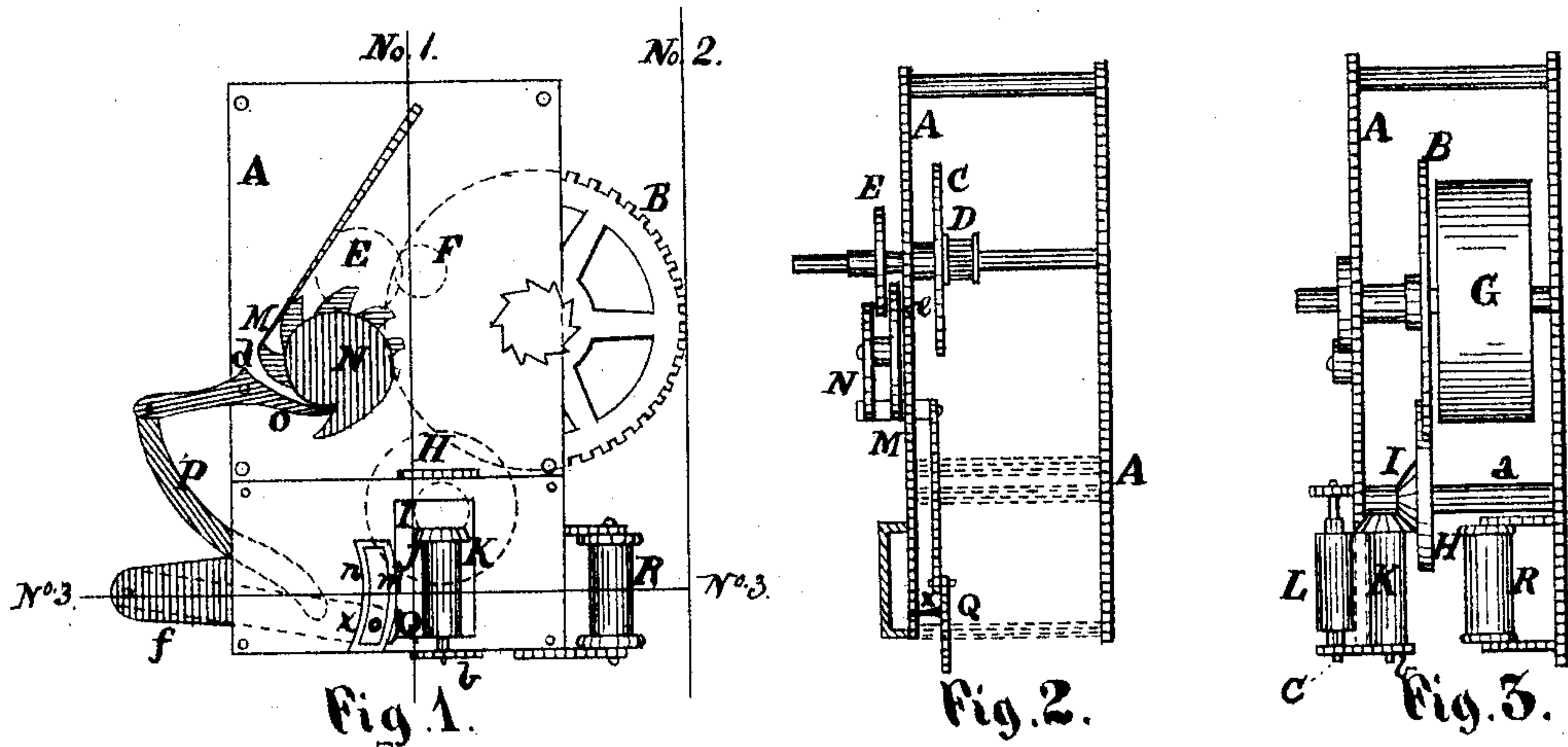
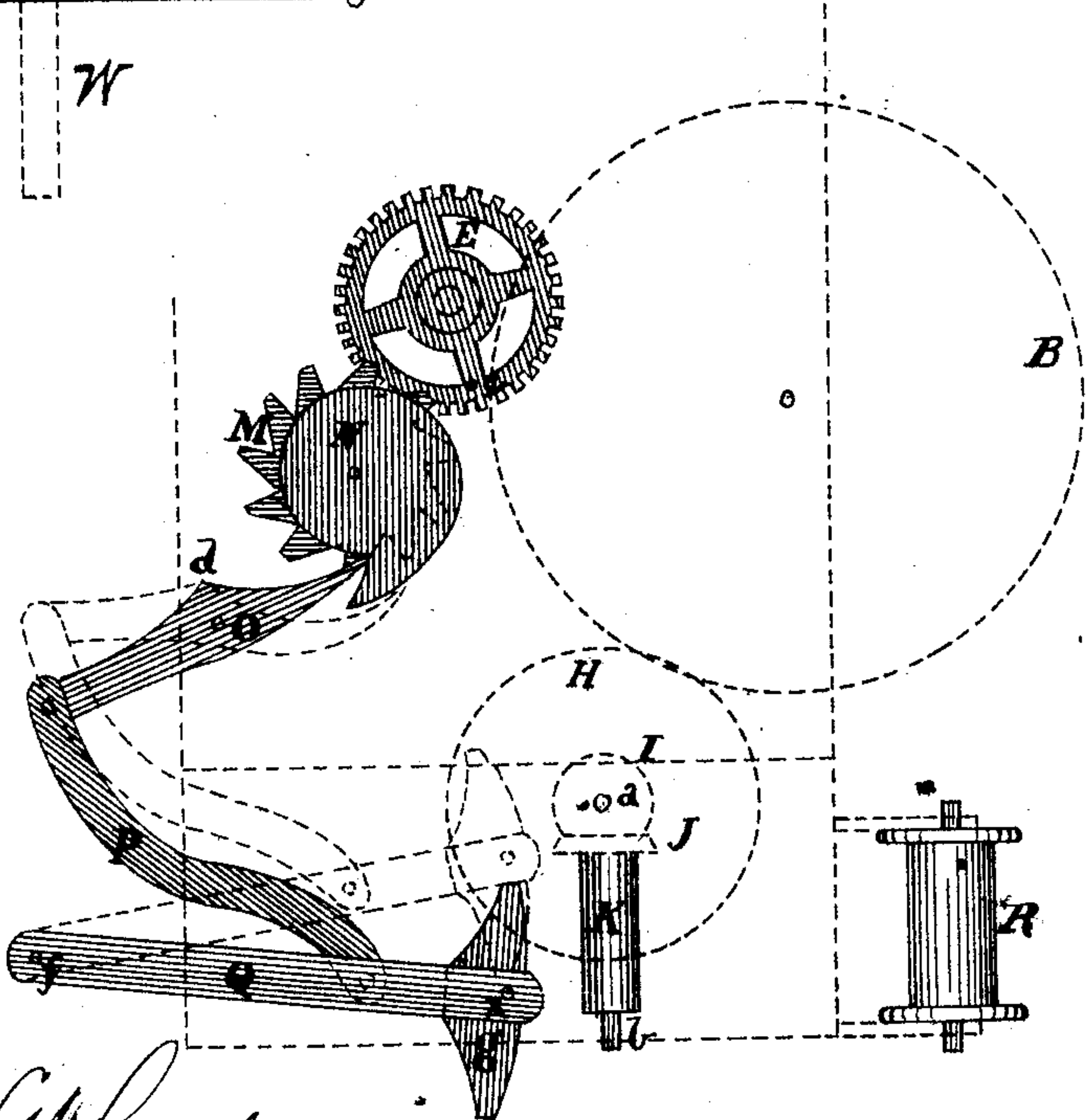


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN WATCHMEN'S TIME-RECORDERS.

Specification forming part of Letters Patent No. **149,333**, dated April 7, 1874; application filed February 17, 1873.

*To all whom it may concern:*

Be it known that I, FRANCIS H. PIAGET, of the city and county of Albany, State of New York, have invented certain new and useful Improvements in Watchman's Time-Recorders; and I do hereby declare that the following is a description thereof, reference being had to the accompanying drawings forming a part of this specification, in which—

Figure 1 represents a view of an ordinary clock (parts of the work not shown) with the improvements in this invention applied. Fig. 2 is a view of the same taken at line No. 1 in Fig. 1. Fig. 3 is an edge view taken at line No. 2 in Fig. 1. Fig. 4 is a cross-sectional view, on an enlarged scale, taken at line No. 3, in Fig. 1. Fig. 5 is a plan, on the same scale, of the several parts of the invention.

My invention relates to a watchman's time-recorder; and consists in the combination of feed-rollers, spool, and gear-wheels with the great wheel of a clock, in such a manner as to be capable of feeding the paper over a perforating-pin in proper set times; also, in the combination of a lever carrying a perforating-pin, connecting-bar, and a second lever with a cam and ratchet-wheel, in such a manner as to be capable of changing the position of the perforating-pin opposite the paper in a lateral direction; and also the combination of the above-mentioned elements, in such a manner that, while the paper will be fed longitudinally over the perforating-pin, the said pin will be moved, with intervals of stoppage, in a lateral direction opposite the paper strip intended to receive the perforations.

To enable others skilled in the art to make and use my invention, I will proceed to describe it in reference to the drawings and the letters of reference marked thereon, the same letters indicating like parts.

In the drawings, A represents the frame of the clock. B, C, D, E, and F are some of the usual wheels and pinions of the train-work of the clock. G is the usual spring employed to give motion to the said train-work. Geared in the great wheel B is the wheel H, attached to the shaft *a*, Figs. 1, 3, 4, and 5, which wheel H is made with any suitable number of teeth that will cause it to revolve once in six, twelve, or twenty-four hours, as may be desired or de-

manded by the length of the strip of paper required to be moved daily, yet preference is had for a proper number of teeth that will cause it to revolve once in each twelve hours. On the shaft *a* is fixed a miter-gear wheel, I, making its revolutions simultaneously with the wheel H, which actuates the miter-gear J, secured to the shaft *b*, carrying the roller K. L is a friction-roller revolving on the shaft *c*, and supported by proper bearings, in such a manner as to permit its face to contact slightly with the face of the roller K, as shown in Fig. 4. M is a ratchet-wheel, properly pivoted to the frame-work, as shown in Figs. 1, 2, 4, and 5, and is made with seven, fourteen, or any other proper number of teeth, according to the number of intermittent movements the wheel is to make in each revolution. The said ratchet-wheel is actuated by the pin *e*, secured in the center wheel E, Figs. 1, 2, and 5, which revolves once in twelve hours. If a greater number of teeth be made in the said ratchet-wheel M, and its number of intermittent movements in each of its revolutions is desired to be made in shorter periods of time, two or more pins, *e*, according to the number of teeth and the time of each complete revolution of the wheel, may be secured to the said center wheel, equidistant from each other. Attached to the ratchet-wheel M is the cam N, which revolves once at each revolution of its attached ratchet-wheel. O is a lever pivoted at *d*, one end of which lever contacts with the periphery of the cam N, as shown in Figs. 1, 4, and 5, while the opposite end is pivoted to the connecting-bar P, which connecting-bar is pivoted to the spring-lever Q, carrying the perforating-pin *x*, which spring-lever is pivoted at its rear end to any suitable bracket, *f*, or part of the frame of the clock. The end of the lever Q carrying the pin *x* is provided with the cross-head *g*, so arranged that some portion of the said cross-head will be over the key-hole, *h*, Fig. 4, in all the several positions which the lever Q may assume. R is a spool, intended to receive a roll of strip paper, *s*, which is to receive the perforations to be made by the pin *x*, when the watchman shall operate the key.

To operate with this invention, the strip of paper *s* is rolled around the spool R, and its



outside end passed between the feed-rollers K and L, and between the guard *n* (surrounding the opening *m*) and the top plate of the frame A, as in Fig. 4. The strip of paper *s* is preferably ruled in spaces, longitudinally, and when the hands of the clock are at twelve o'clock, the cam N and its contacting lever O will be in position shown by full lines in Fig. 5, and will cause the connecting-bar P to throw the perforating-point *x*, carried by the lever Q, to opposite the lower edge of the paper strip.

The movement of the usual train-work of the clock will cause the pin *e* in the center wheel E, at each of its revolutions, to carry the ratchet-wheel M forward to the distance of one tooth, when the cam N will be moved to a corresponding distance, and throw the lever O to a little distance toward the position of lever O', shown by dotted lines, which will affect correspondingly, through the connecting-bar P, the lever Q, carrying the perforating-pin *x'*, which movement will represent one half-day, or twelve hours (a. m. or p. m.) The gear H in the while, being actuated by the great wheel B, will give motion to the rollers K and L, through the miter-gears I and J, and cause the strip of paper *s* to be moved along over the perforating-pin *x*, which movement of the paper will be continuous, though slow, and to a length in each twelve hours to be sufficient to receive any reasonable number of perforations to indicate hours and fractions of hours. When the strip of paper has been fed over a space equal to twelve hours, the cam N will be moved another tooth, which will, by the levers O and Q, carry the perforating-pin *x* to another degree ready for any perforation, thus, *ad finem*, the first, third, fifth, &c., positions of the perforating-pin or puncture will indicate the time a. m., and the second, fourth, sixth, &c., positions of the perforating-pin or its punctures in the paper will indicate time p. m., if the said cam is made to have two revolutions each day.

If desirable, by a slight modification in the time and speed of the movements of the paper on its bed, and the perforating-pin to its several positions, the order of indicated time on the paper can be reversed, so that the perforations across the paper will indicate hours and minutes, while their longitudinal directions will indicate half or whole days.

It is not necessary in every case to use the center wheel E, carrying the pin *e*, to actuate the ratchet-wheel M and its associate cam N, to effect the required changes of the position

of the perforating-pin *x*, as the said ratchet-wheel and its cam can be located elsewhere to be actuated by some other wheel, as the great wheel B, or wheel H, or any other equivalent wheel, which will, by each of its revolutions, effect the proper movements of the said ratchet-wheel and cam, provided the lever O and Q, with their connecting-bar P be modified in their positions and arrangements to correspond. Neither is it necessary to arrange the rollers and spool, and the other part of the invention in the close proximity to the main works of the clock, as shown in the drawings, as the several parts can be located at a distance from the clock when actuated by any suitable train-work of wheels or equivalent elements.

When the several parts of this invention have been arranged substantially as above described, the paper strip will be ready to receive a puncture from the perforating-pin at any time, which can be effected by the watchman thrusting the key W (shown by dotted lines in Fig. 4) through the key-hole *h*, and against the cross-head *g* of the lever Q, and withdrawing the same, when the perforating-pin will be thrust through the paper and be withdrawn, leaving an ineffaceable record, which will in the paper indicate the time of the hour and day such perforation was made.

By the several parts of this invention, a common clock may have associated with it a cheap, simple, and reliable means for recording the times of the several visitations and operations of the watchman upon a single strip of paper, which, according to its length, may serve for a week, month, or longer time, and be preserved for any future reference or comparison.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the lever Q carrying the perforating-pin *x*, connecting-bar P, lever O, with the ratchet-wheel M and cam N, substantially as and for the purpose set forth.

2. The combination of the rollers K L, gears H I J, spool R, and wheel B, by which the paper strip *s* is actuated, with the ratchet M, cam N, and lever O P Q, carrying the pin *x*, by which the said strip *s* is perforated, as and for the purposes set forth.

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Witnesses:

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