

G. P. REED.
Main-Spring Indicators for Watches.
No. 151,243. Patented May 26, 1874.

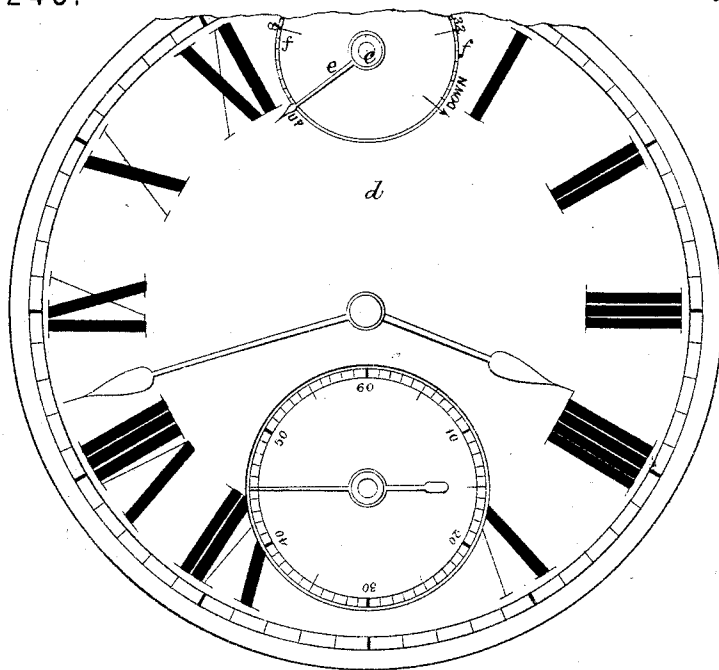
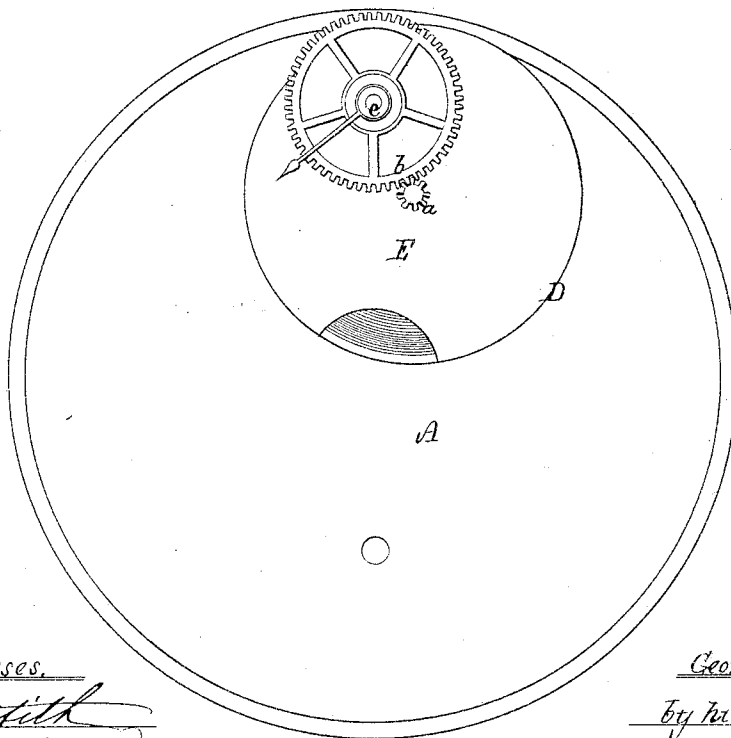
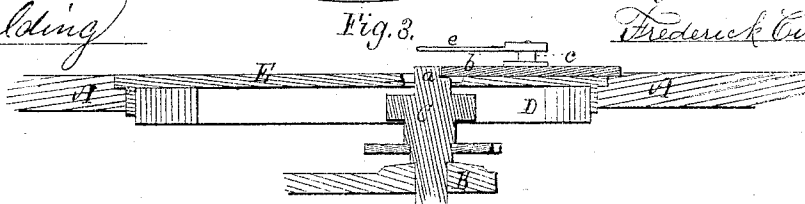


Fig. 1.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE P. REED, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MAINSPRING-INDICATORS FOR WATCHES.

Specification forming part of Letters Patent No. **151,243**, dated May 26, 1874; application filed August 29, 1871.

To all whom it may concern:

Be it known that I, GEORGE P. REED, of Boston, in the county of Suffolk and State of Massachusetts, have made an invention of a new and useful Improvement in Watches; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawings, making part of this specification, and in which—

Figure 1 is a face view of the lower or main plate of a watch with my improvements applied thereto, Fig. 2 being a dial-face view, showing the dials and hands impressed thereupon, while Fig. 3 is a vertical section of the same.

The purpose of my present improvement is to apply to a watch of my own production, and containing several inventions patented by myself, an up-and-down hand, so called—that is to say, a hand and dial or scale combined with the dial-face, which, being connected with the barrel or mainspring, shall indicate the extent to which the spring may be wound up, and enables the owner of a watch to ascertain at a glance whether or not it requires winding. This invention is adapted to a system of containing and winding the mainspring of a watch, and the addition thereto of a maintaining power for keeping the watch in motion while the spring is being wound up, such as is shown in Letters Patent of the United States numbered 17,055, and issued to me on the 14th day of April, 1857, the distinguishing feature of which is the employment of a fixed barrel for containing the spring while the main wheel and arbor revolve.

This invention consists in the combination, with the stationary barrel and rotating main-wheel arbor projecting through the cap-plate of said barrel, of a pinion fixed on said projecting end of said arbor, and a spur-gear mounted and revolving on a post or stationary arbor fixed on the cap-plate of said barrel, and carrying an index-hand to operate in connection with an up-and-down dial, as hereinafter specified.

The drawings accompanying this specification represent at A the main plate of a watch; at B, the stop-works plate or bridge; at C,

the barrel-arbor; and at D, the barrel of a watch, substantially as is shown in Letters Patent hereinbefore alluded to, the cap-plate of this barrel, which constitutes part thereof, being shown at E as let into the dial side of the plate A, and with the surfaces of the two flush, or thereabout.

In carrying my present improvement into practice, I extend the arbor C through the cap-plate E, and I affix to it, in close proximity to such cap-plate, a toothed pinion, *a*, while alongside of or above the said pinion, and meshing into it, I dispose a spur-gear, *b*, mounted upon a post, *c*, erected upon the cap-plate E, as represented. The post *c* extends through the dial-plate of the watch, which is shown at *d*, and carries at its extremity, and immediately outside of the dial-plate, a hand or index pointer, *e*, this hand operating in connection with a segmental concentric dial or scale, *f*, impressed or engraved upon the dial-face, and diametrically opposite and above the seconds-hand thereof, this index or scale, as herein shown, being five-sevenths of a circle. The words "Up" and "Down" are impressed or enameled upon the dial-face, one to each end of the index, the latter word being at that end of the scale which the hand approaches while the mainspring is relaxing or running down. As before observed, the number of teeth of the pinion and of the gear are to be so proportioned to the length of the dial *f* and the number of revolutions of the arbor and pinion, that during forty hours' running, or five rotations of the main-wheel arbor, the hand *e* shall travel from the "up" end of the scale, which indicates that the spring is wound up, to the "down" end of such scale, which indicates that the spring is run down to the full extent which the stop-works will allow. For instance, in the present case, the barrel-arbor describes five rotations in forty hours, and the pinion contains eight teeth; consequently, in order that the five rotations of the arbor shall effect a partial rotation of the gear and hand through the five-sevenths of a circle which constitutes the extent of the dial *f*, the number of teeth upon such gear should be fifty-six. In this combination, which is the extreme of simplicity, cheapness, and accuracy, the only elements

additional to the watch proper are the pinion *a*, gear *b*, hand *c*, and post *e*, with the dial *f*, and these occupy no space of value. The gear and its supporting-arbor can, by reason of the stationary barrel, be brought near to the central pinion *a*, being mounted on the cap-plate or head itself of the barrel, an arrangement that conduces materially to the economical results above noted.

I desire to state in conclusion that I do not claim, broadly, combining an up-and-down hand with a watch; but—

What I do claim, and desire to secure by Letters Patent, is—

In a watch having a stationary barrel and a rotating main-wheel arbor, the combination, with the main-wheel arbor projecting through the cap-plate of the barrel, and the pinion *a* fixed to said projecting end of stationary arbor *c* fixed to the cap-plate, and rotating gear *b* mounted thereon so as to engage pinion *a*, and provided with a hand, *e*, to operate in connection with the dial *f* under the arrangement shown and set forth.

GEO. P. REED.

Witnesses:

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