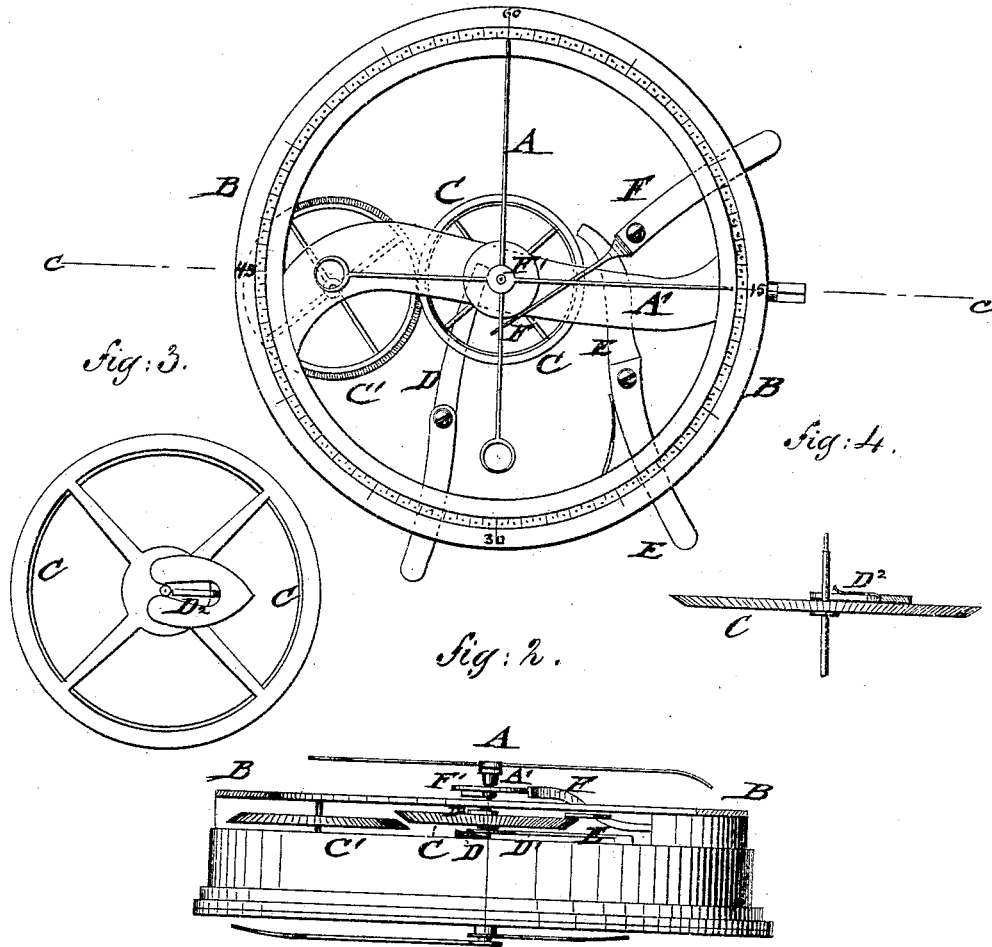


H. A. LUGRIN.  
STOP-WATCHES.

No. 182,836.

Patented Oct. 3, 1876.

*Fig: 1*



WITNESSES:

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# UNITED STATES PATENT OFFICE

HENRI A. LUGRIN, OF NEW YORK, N. Y.

## IMPROVEMENT IN STOP-WATCHES.

Specification forming part of Letters Patent No. **182,836**, dated October 3, 1876; application filed August 7, 1876.

*To all whom it may concern:*

Be it known that I, HENRI A. LUGRIN, of the city, county, and State of New York, have invented a new and Improved Stop-Watch, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a plan view of the top of a watch-movement with my improved stop device or timing attachment applied thereto. Fig. 2 is a vertical central section of the same, on line *c c*, Fig. 1; and Figs. 3 and 4 are a detail top view and vertical central section of the sliding bevel-wheel.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved timing attachment to watches, by which one or more observations can be made by a very simple mechanism, and the timing device, after use, thrown entirely out of connection with the watch-movement, giving thereby no friction to the same.

My invention consists in a wedge-shaped lever and spring, arranged so that it will, when used, raise the center beveled wheel, and so throwing it out of gear, will interrupt the connection with watch train and stop the quarter-second and split the quarter-second hands. When the lever is brought back to its former position, the beveled center-wheel, with the aid of a small spring attached to it, and pressing against the bridge, is made to gear again with the other beveled wheel, and so with the train of the watch.

In the drawing, A represents a quarter-second hand, and A' a split quarter-second hand, of the usual construction, which are arranged on the top of the watch-movement, on the side opposite to the face side on which the hour and minute hands are arranged. B is the dial of the quarter-second hand that is graduated in suitable manner.

The quarter-second hand A is revolved by means of a beveled and minutely-toothed wheel, C, which is applied to the center post and revolved by gearing with a similarly beveled and toothed wheel, C', attached to the

watch-train, which wheel is arranged with teeth beveled with downward inclination, while the center wheel C is beveled with upward inclination. This produces the parallelism of the intermeshing teeth of the wheels, and admits the separating of the wheels by a wedge-shaped or beveled lever, D, and lifting-spring D<sup>1</sup>, so that the center wheel is brought into a position parallel to, and slightly above the wheel C', and thereby thrown out of gear from the other bevel-wheel.

A spring, D<sup>2</sup>, attached to the center wheel C, bears on the bridge of the movement, and lowers the wheel to gear with wheel C' as soon as the lever is withdrawn. The motion of the timing device is in this manner established or interrupted by a simple and reliable mechanism.

The quarter-second hand is returned or shifted back to the point of starting by a spring-lever, E, in connection with the usual heart-shaped cam of the center post.

The split quarter-second hand may be stopped or retained by a fulcrumed lever, F, that is pressed on a disk, F', of the center post, and stops thereby the split hand by the friction on the disk, while the quarter-second hand continues to travel until interrupted by the action of the wheel raising lever D. The release of the friction-lever from the disk carries the split quarter-second hand back to the quarter-second hand by the usual cam and spring mechanism, being then ready for the next timing.

By disconnecting the center beveled wheel C from the beveled wheel C', the quarter-second and split quarter-second hands are set to rest, and separated from the watch-movement so that no friction or strain is exerted on the same when the watch is not used for timing purposes.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a beveled and toothed wheel attached to the watch-movement, of a timing attachment having a similarly beveled and toothed, but inverted, cen-

ter wheel, that is thrown in or out of gear with the watch - movement by suitable lever and spring devices, substantially in the manner and for the purpose set forth.

2. The combination of bevel-wheel C', inverted beveled wheel C, lever D, lifting-spring D<sup>1</sup>, and lowering-spring D<sup>2</sup>, to estab-

lish or interrupt connection of watch-movement and timing attachment, substantially as specified.

HENRI A. LUGRIN.

Witnesses:

PAUL GOEPEL,  
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