N. MEYERS.

WATCH ESCAPEMENT.

No. 186,598. Patented Jan. 23, 1877.

Fig. 1.

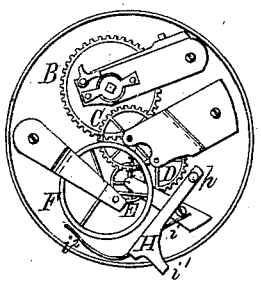


Fig. 2.

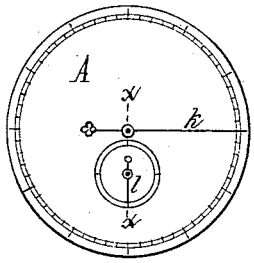


Fig. 3.

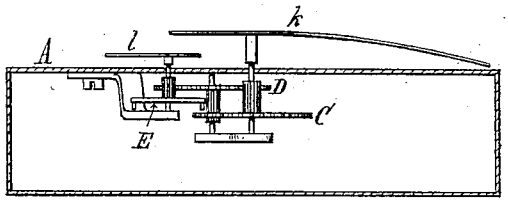


Fig. 4.

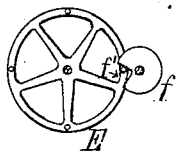


Fig. 5.

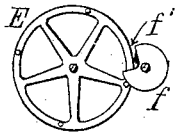


Fig. 6.

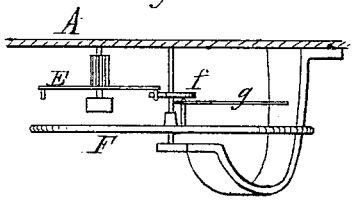
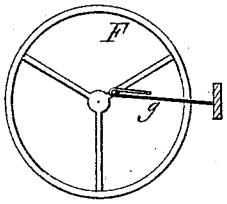


Fig. 7.



Charles J. Buchheit
George H. Sykes
Witnesses.

Nicholas Meyers Inventor
By Edward Wilhelm
Attorney.

UNITED STATES PATENT OFFICE

NICHOLAS MEYERS, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN P. BRANER, OF SAME PLACE.

IMPROVEMENT IN WATCH-ESCAPEMENTS.

Specification forming part of Letters Patent No. **186,598**, dated January 23, 1877; application filed August 9, 1876.

To all whom it may concern:

Be it known that I, NICHOLAS MEYERS, of the city of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Devices for Timing Horses, which improvements are fully set forth in the following specification, reference being had to the accompanying drawing.

My invention relates to the construction of a simple and effective mechanism for indicating quarter seconds, and which is readily stopped at any desired point.

The nature of my invention will be fully understood from the following description:

In the accompanying drawing, Figure 1 is an elevation of the actuating parts of my improved device. Fig. 2 is a view of the dial thereof. Fig. 3 is a section, on an enlarged scale, in line *x x*, Fig. 2. Figs. 4, 5, and 6 are enlarged views of the escapement. Fig. 7 is an enlarged view of the balance-wheel.

Like letters of reference refer to like parts in each of the figures.

A represents the dial-plate; B, the mainspring-wheel of ordinary construction. C is the second-wheel, driven directly from the wheel B. D is a multiplying-wheel interposed between the second-wheel C and the escapement-wheel E; and F, the balance-wheel. The wheels are preferably proportioned as follows: the mainspring-wheel B, seventy-two teeth; the second-wheel C and multiplier D each sixty teeth; and the pinions with which these wheels engage, respectively, six, ten, and six teeth; but any other suitable proportions may be adopted, if desired. The escapement-wheel E is provided with four laterally-projecting pins arranged equidistant from each other, and the shaft of the balance-wheel F with a small disk or wheel, *f*, provided on its periphery with an angular notch, *f'*, in which the pins of the escapement-wheel engage. *g* represents a flat spring secured with one end to the main plate or a bracket attached thereto, and provided at its opposite end with a loop, in which engages a projection or pin formed with the balance-wheel F. H represents the stop-lever pivoted to the main plate at *h*, so as to swing against the rim of the balance-wheel F. It is provided with a spring, *i*, for swinging it away from the balance-wheel when released, and also an arm, i^1, projecting out of the inclosing-case of the mechanism, for conveniently operating the stop. The end of the stop-lever H is, preferably, provided with a flat spring, i^2, or other yielding part, bearing against the rim of the balance-wheel to reduce the impact of the stop-lever in striking the balance-wheel. K is the second-hand mounted on the shaft of the second-wheel C, and *l* the quarter-second hand mounted on the shaft of the escapement-wheel E.

The power derived from the mainspring connected with the wheel B is applied directly to the shaft of the second-wheel C carrying the second-hand K, and then transmitted, by means of the wheel C and multiplier D and pinions, to the escapement-wheel E, to which the quarter-second hand *l* is attached. The pins of the escapement-wheel E, in striking against one side of the notch *f'* of the disk *f*, cause the forward movement of the balance-wheel, which is arrested by the next following pin striking against the rim or periphery of the disk *f*, when the spring *g* returns the balance-wheel to its former position, thereby permitting the pin previously resting against the periphery of the disk *f* to enter the notch *f'* thereof, when the same movement is repeated. By applying the power of the mainspring directly to the shaft of the second-wheel, the number of wheels employed is reduced to a minimum. The flat spring *g* takes the place of the ordinary hair-spring of the balance-wheel, and forms, with the wheel E and notched disk *f*, a very simple and effective escapement.

My improved device is constructed at comparatively small expense, and at the same time is very reliable and efficient. The stop-lever, engaging with the balance-wheel, permits the movement of the device to be arrested at any desired point intermediate of the quarter seconds.

Having thus fully described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. The combination, with the escapement-wheel E, provided with four laterally-projecting pins, of the balance-wheel F, provided

with disk *f*, having a single notch, *f'*, for indicating quarter seconds, substantially as hereinbefore set forth.

2. The combination, with the escapement-wheel E, provided with four projecting pins, of the balance-wheel F, provided with disk *f*, having a notch, *f'*, and stop-lever H arranged to swing against the rim of the balance-wheel, so that the movement can be arrested intermediate of the quarter seconds, substantially as hereinbefore set forth.

3. The combination, with the balance-wheel F, of the flat spring *g*, provided with a loop, in which engages a projection formed with the balance-wheel, substantially as and for the purpose hereinbefore set forth.

4. The combination, with the mainspring-wheel B, of the second-wheel C, carrying the second-hand *k*, multiplier D, escapement-wheel E, carrying the quarter-second hand *l*, and provided with four projecting pins, and balance-wheel F, provided with disk *f*, having a notch, *f'*, substantially as and for the purpose hereinbefore set forth.

NICHOLAS MEYERS.

Witnesses:

EDWARD WILHELM,

CHAS. J. BUCHHEIT.