P. M. STATZELL.

Watch.

No. 25,589. Patented Sept. 27, 1859.

Fig. 1.

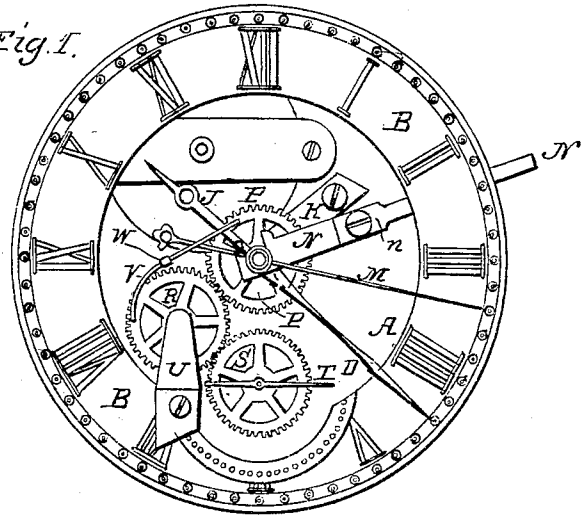


Fig. 2.

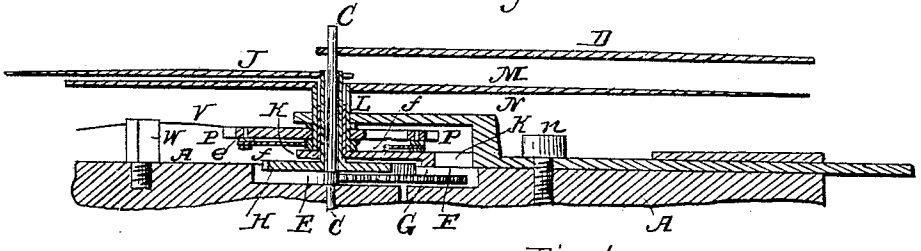


Fig. 3.

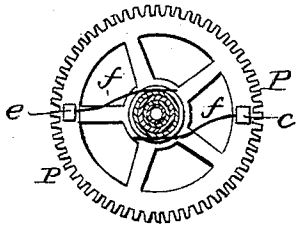


Fig. 4.

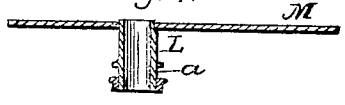
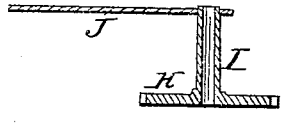


Fig. 5.



Witnesses.

Henry Howson

Horace See

Inventor.

P. M. Statzell

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UNITED STATES PATENT OFFICE.

PETER M. STATZELL, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF OPERATING INDEPENDENT SECONDS-HANDS OF STOP-WATCHES.

Specification of Letters Patent No. 25,589, dated September 27, 1859.

To all whom it may concern:

Be it known that I, P. M. STATZELL, of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Watches; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in so adapting an independent seconds hand to a watch, that by means of the devices described hereafter or their equivalents the said hand may be connected to or disconnected from the "time train."

The object of my invention is to furnish a watch with an independent seconds hand which although moved by the "time train" can be so stopped and started without interfering with the uniform movement of the said train, thus accomplishing an end which has hitherto required independent and complicated movements to attain.

In order to enable others skilled in this branch of mechanism to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawing which forms part of this specification. Figure 1 is a face view of an ordinary lepine watch with part of the dial removed in order to illustrate my improvements. Fig. 2 is a transverse section of sufficient of the watch to show my improvements; Fig. 3, an inverted plan view of the wheel from which the independent seconds hand derives its motion; Fig. 4, a detached view of the independent seconds hand with its hollow arbor; Fig. 5, a detached view of the hour hand with its hollow arbor.

Fig. 1 is drawn to a scale of double the actual size of the watch, and the remaining figures to a scale quadruple the actual size.

Similar letters of reference allude to similar parts throughout the several views.

A, represents the cover or dial plate of the watch and B, the dial, C the spindle which carries the minute hand D, is driven in the usual manner. On this spindle is the usual "cannon" pinion E, gearing into a wheel F, on which is a pinion G, gearing into a wheel H, the latter being attached to or forming part of the hollow arbor I, to the top of which is secured the hour hand J, (see Fig. 5.) This hollow arbor turns in a tube projecting upward from the plate or bridge K, which is secured to the dial plate, and on this projection turns the hollow arbor L, which carries the independent seconds hand M, the arbor resting on the top of the bridge K, and being prevented from rising by means of the stop arm N, which will be more particularly alluded to hereafter.

On the hollow arbor, L, are two collars forming a groove, *a*, (Fig. 4.) in which is hung the cog wheel P; the latter has two projections, *e*, on the under side and to each projection is secured a spring *f*, one spring bearing on one side and the other on the opposite side of the hollow arbor L. These springs form the only medium through which motion is communicated from the wheel to the arbor on which it is hung.

The stop arm N, has its fulcrum on a pin *n*, screwed into the dial plate A, and the inner end of this arm is forked, the forked end fitting over the hollow arbor L, and, as before remarked, serving to maintain this arbor in its proper vertical position. A limited lateral play is allowed to the arm, so that when it is moved in one direction its forked end bears sufficiently hard against the hollow arbor to overcome the friction of the springs *f*, against the said arbor which is thus prevented from turning with the wheel P. When the arm is moved in a contrary direction the forked end ceases to bear hard against the arbor, which thus released is carried around with the wheel by means of the springs *f*, *f*. The forked end of the arm however continues to perform the duty of maintaining the arbor in its proper vertical position, no matter what may be the position of the said arm.

R, is a cog wheel turning in the bridge *v*, on the dial plate and this wheel gears into the cog wheel *s*, which carries the ordinary seconds hands T.

V, is a spring secured to a stud W, on the dial plate, one end of the spring bearing on the wheel P, and the opposite end on the intermediate wheel R. This spring by bearing on the two wheels obviates that rebounding or reaction which would have a tendency to cause the seconds hand to rotate with an uncertain and irregular movement.

The works which constitute the "time train" are similar to those of ordinary lepine watches, the minute hand D, the hour

hand J, and seconds hand T, being driven by the main spring through the usual system of wheels and pinions.

Watches have been heretofore furnished with independent seconds hands, which by suitable mechanism can be stopped and started without interfering with the regular movement of the time train, this end however has hitherto been accomplished by using a barrel and train of wheels independent of the usual "time train" thus involving the necessity of complicated and costly works. In my improvement the independent seconds hand M, is driven by the usual time train, the stopping and starting of this hand being accomplished by the arm N, in conjunction with the springs *f*, *f*, on the wheel P, which operate to accomplish the desired end without disturbing the movements of the time train.

Although I have illustrated and described my independent seconds hand as being driven by the wheel, *s*, on the spindle which carries the usual seconds hand, through the intermediate wheel, R, and although this mode of driving the independent seconds hand is to be preferred on account of its simplicity, it may be driven from other moving parts of the works without interfering with my improvements which are applicable to watches of every description. I therefore do not desire to confine myself to the precise system of wheels or gearing for driving the second hand, but

I claim as my invention and desire to secure by Letters Patent—

1. The independent seconds hand, M, adapted to a watch substantially in the manner herein set forth so that by means of the devices herein described, or their equivalents, the said hand may be connected to or disconnected from the time train of the watch without interfering with the movements of the latter for the purpose specified.

2. The stop arm N, with its forked end so adapted to the hollow arbor, L, as to serve the purpose of stopping and releasing the said arbor and at the same time serving to maintain it in its proper vertical position.

3. The wheel, P, with its springs, *f*, *f*, in combination with the hollow arbor, L, of the independent seconds hand, the wheel being hung loosely to and the springs bearing against the said arbor as, and for the purpose set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

P. M. STATZELL.

Witnesses:

HENRY HOWSON,

CHARLES D. FREEMAN.