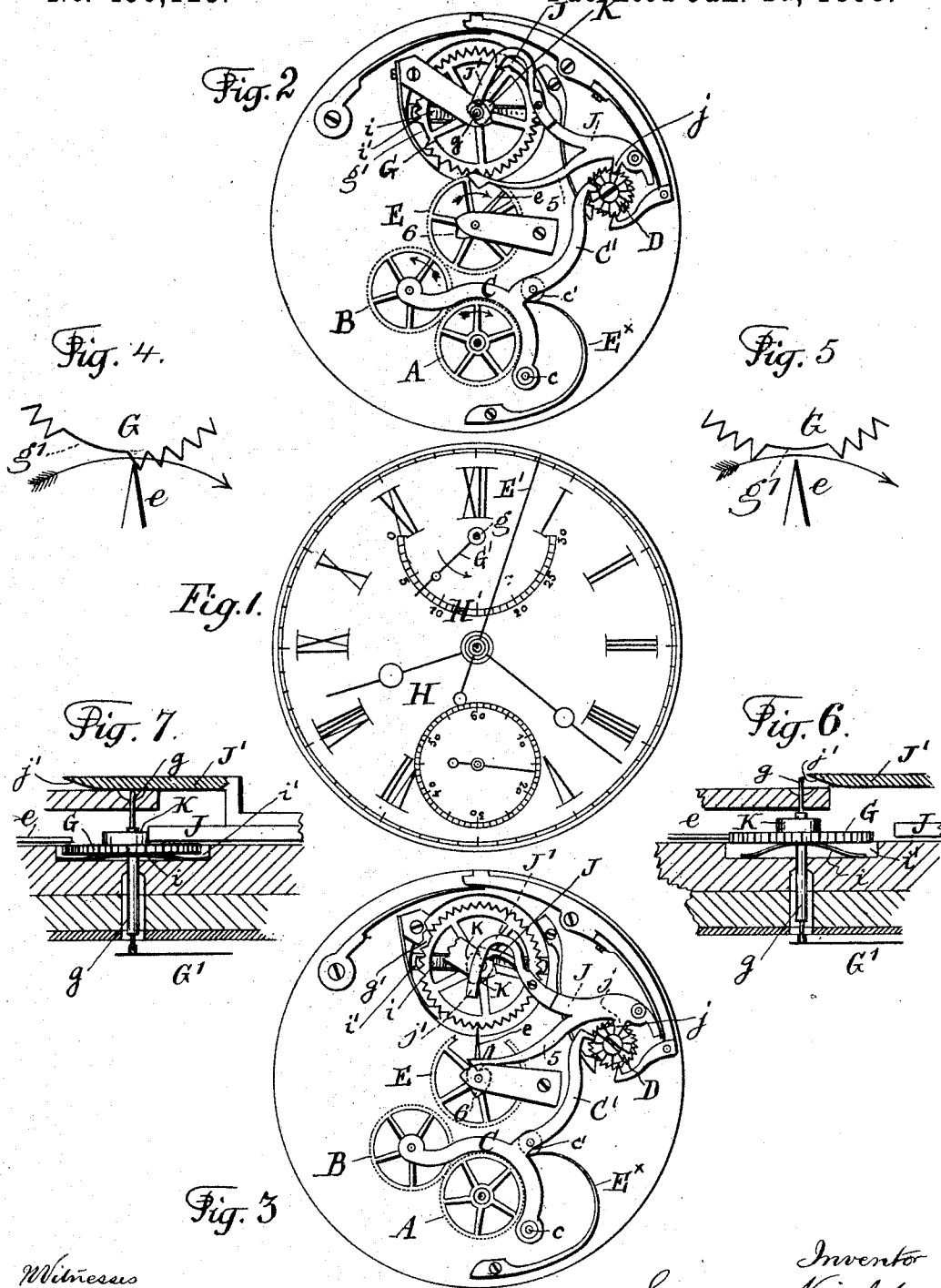


(No Model.)

G. NICOLET.
STOP WATCH.

No. 490,123.

Patented Jan. 17, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGES NICOLET, OF CHAUX-DE-FONDS, SWITZERLAND.

STOP-WATCH.

SPECIFICATION forming part of Letters Patent No. 490,123, dated January 17, 1893.

Application filed July 11, 1892. Serial No. 439,695. (No model.)

To all whom it may concern:

Beitknown that I, GEORGES NICOLET, watch manufacturer, of Chaux-de-Fonds, Switzerland, have invented certain new and useful
5 Improvements in Stop-Watches, of which the following is a specification.

The invention refers to that class of stop watches having a hand rotating on the center of the watch and fixed to a wheel provided with
10 a projection, pin or the like which is intended to act once at each revolution of said wheel upon the teeth of the wheel carrying the hand of the minutes counter or recorder, so as to cause one tooth of said wheel to be ad-
15 vanced and the said minute counter hand rotated one division of its special dial or scale.

The invention especially relates to the device for putting the minutes counter wheel out of action when the said minutes counter
20 is not used and moving the same when the minutes counter hand is to be set to zero.

In the accompanying drawings Figure 1 is an elevation of the face and hands of the improved watch. Fig. 2 is a plan view of the
25 mechanism as it is to be seen after removing the dial and while the said mechanism is in position for moving the hands. Fig. 3 is a similar plan view when the hands are set to zero. Fig. 4 shows separately the respective
30 position of the outcut of wheel G and of the finger *e* when the recording hand is to receive its last movement. Fig. 5 shows separately the respective position of the outcut of wheel G and of the finger *e* when the minutes recording hand has fulfilled its work, that is to
35 say, when the minutes recording hand G' has been moved its full stroke (for instance from 0 to 30 in Fig. 1). Fig. 6 shows in cross section on an enlarged scale the device for putting the wheel G out of reach of the finger *e* when the hands are set to zero. Fig. 7 shows a similar cross section in which the wheel G is out of reach of the finger *e*.

In all the figures the same letters and numerals refer to the same pieces.

A is a wheel fixed on the axis of one of the watch arbors for driving the stop watch mechanism.

B is an intermediate wheel pivoted to a
50 rocking lever C which is pivoted at *c* to the plate of the work and bears with its arm C' upon the cam D under the action of a spring

E^x which bears upon the small roller *c'* pivoted to the said lever C. According as the arm C' bears into an outcut or upon a full
55 part of said cam D the wheel B is in or out of gear with a wheel E, the axis of which bears the independent seconds hand E'.

In Fig. 2 of the drawings the wheel B is shown in gear with wheel E, and in Fig. 3 it
60 is shown out of gear with said wheel. In both positions the said wheel B is in gear with the driving wheel A.

The wheel E or the axis of the same bears a projection, finger or pin *e* intended to cause
65 the wheel G of the minutes recording device to be rotated one tooth at each revolution of said wheel E. The axis *g* of the wheel G bears a hand G' which moves on a segmental dial or scale H' of the watch dial H. Said
70 wheel G has a number of teeth corresponding to the number of divisions which the scale H' would have if it would be a full circle and there is provided an outcut *g'* formed by
75 partly or fully cutting away one or more teeth of said wheel G and disposed so as to arrive in front of the finger or pin *e* at the moment the hand G' reaches the end of the
80 scale H', that is to say, in the case shown in the drawings at the moment the hand G' reaches the number 30. The hand remains
85 then in place, the finger or pin *e* passing in front of the wheel G without acting upon its teeth as shown in Fig. 4. Then the wheel G is stopped and the hand G' remains in the said
90 position until it is set to zero. This operation is performed by means of a hammer or lever J which falls upon a heart cam K when the projection *j* falls into an outcut of the
95 cam D. Now it will be easily understood that if the setting to zero of the hand G' takes place while the finger or projection *e* is in the path of the teeth of wheel G, the latter would not be able to follow the impulse given to its
100 heart piece K while having its teeth meeting the said finger or projection *e*. I therefore provide a lever J' fixed to the hammer or lever J and having a bevel *j'* which slides upon the top of the axis *g* somewhat before the hammer J strikes the heart piece K.

Fig. 6 shows the beveled part of the lever J' and the axis *g* of wheel G as they stand when the stop mechanism is going, the wheel G being in reach of the finger or pin *e*. Fig. 7

shows the same parts when the beveled part of the lever *J'* has depressed the axis *g* so as to place the wheel *G* out of reach of the finger or pin *e*.

5 There is provided a spring *i* in a recess *i'* of the plate for lifting the arbor and wheel *G* when the lever *J'* is retracted. It will now be readily understood that the wheel *G* being
10 thrown into the position of Fig. 7 before the hammer *J* meets the heart piece *K*, the rotation of said wheel *G* in either direction for setting the hand *G'* to zero, will take place without having the teeth of the wheel *G* meeting the finger or pin *e*.

15 An arm *5* of the lever *J* acts on a heart cam *6* on the arbor of the independent seconds hand *E'* to return the latter to zero as usual.

I claim as my invention.

1. The combination with the independent
20 seconds hand and its arbor, of a projection rotating with such hand, a minutes recording hand and a wheel therewith connected and receiving a movement from said projection of one tooth each rotation of the independent
25 seconds hand, a heart cam and lever for re-

turning the minutes recording hand to zero, and push mechanism and an incline and spring for giving an end movement to the arbor of the minutes recording hand to clear
30 the wheel thereof from the projection and to bring the heart cam into the path of its lever, substantially as specified.

2. The combination with the independent seconds hand and its arbor, and a projection revolving therewith, of a minutes recording
35 hand, a segmental scale therefor and a toothed wheel connected with said hand and acted on by such projection, there being a notch in the wheel whereby its movement is stopped when the hand reaches the end of the segmental
40 scale, and mechanism substantially as specified for returning the hand to zero, as set forth.

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

GEORGES NICOLET.

Witnesses:

BEN. SCHÜTTEL,

A. BRANDT.