

(No Model.)

H. JACCARD.
WATCH.

No. 418,334.

Patented Dec. 31, 1889.

Fig. 1.

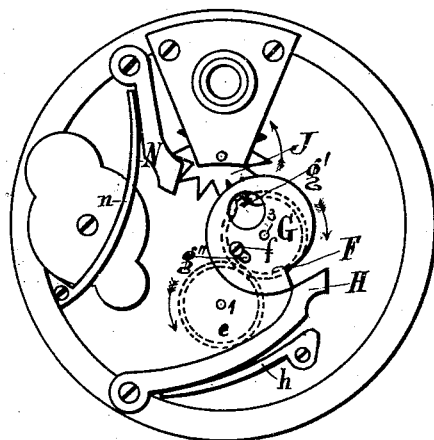
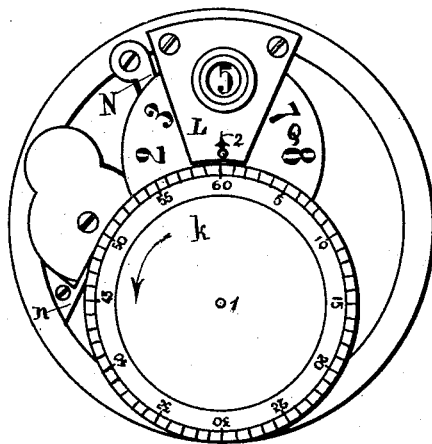


Fig. 2.



Witnesses

Chas N. Smith
Harold Terrell

Inventor

Henri Jaccard.
per Lemuel W. Terrell
att'y.

UNITED STATES PATENT OFFICE.

HENRI JACCARD, OF BIENNE, ASSIGNOR TO L. MARILLIER-DEUZLER, OF
NEUVEVILLE, SWITZERLAND.

WATCH.

SPECIFICATION forming part of Letters Patent No. 418,334, dated December 31, 1889.

Application filed July 18, 1889. Serial No. 317,849. (No model.) Patented in Switzerland February 13, 1889, No. 573.

To all whom it may concern:

Be it known that I, HENRI JACCARD, watch-maker, of Bienne, in Switzerland, have invented a new and useful Improvement in
5 Handless Watches, (for which I have obtained Letters Patent in Switzerland, dated February 13, 1889, No. 573,) of which the following is a specification.

This invention relates to a watch in which
10 the time is indicated by revolving dials and the hour and minute hands are dispensed with. I provide a dial divided up into minutes and revolving once each hour, and a dial with figures or numbers from 1 to 12 is
15 moved periodically beneath a plate in which there is an opening, so that the hour figure is exposed, and the minutes are denoted by the numbers on the edge of the revolving dial.

In the drawings, Figure 1 represents the
20 mechanism employed in connection with the hour and minute dials, the dials themselves being removed; and Fig. 2 represents the dials in their proper position and a portion of the mechanism behind the dials.

25 The wheel *e*, Fig. 1, is to be revolved once every hour by any suitable time mechanism. The arbor 1 of this wheel carries upon it a dial *k*, around which are divisions indicating the minutes, and adjacent to the edge of this
30 dial *k* is a plate *L*, having upon it a pointer or index-mark 2 adjacent to the edge of the dial *k*. The wheel *e* gears into a similar wheel *F*, (shown by dotted lines in Fig. 1,) and the arbor 3 of this wheel *F* carries a snail-
35 cam *G*, and there is a screw *f* passing through a slot *g''* in the cam *G*, so that this cam *G* is connected to the gear-wheel *F*; but a movement is allowed to the cam *G* corresponding to the length of the slot *g''*, and there is upon
40 the back of this cam *G* a projection *g'*, that moves in the path of the projecting points of the star-wheel *J*. The star-wheel *J* is upon an arbor supported at one end by the plate *L*, and such arbor carries a dial *Q*, upon
45 which are the twelve numbers indicating the hours of the day, and the star-wheel *J* has twelve teeth, and this star-wheel *J* is held by the detent *N*, having a double-inclined face, and a spring *n* to press the double incline of
50 the detent against the teeth of the star-wheel *J*, and there is an opening in the plate *L*, through which one figure upon the dial *Q* can

be seen. Adjacent to the snail-cam *G* is a lever *H*, having a double-inclined edge that is pressed against this snail-cam *G* by the
55 spring *h*, and the respective parts are moved in the direction of the arrow, Fig. 1, and the screw *f* in the wheel *F* causes the snail-cam *G* to revolve, and the lever *H* is thereby pressed backwardly, and when the parts ar-
60 rive in the position indicated in Fig. 1 the stop *g'* comes close to one tooth of the star-wheel *J*, and as the point of the cam *G* passes the point of the lever *H* such lever *H* gives
65 to the cam *G* a further and sudden movement in the direction of the arrow, and the star-wheel *J* is turned one tooth, and the dial *Q* is simultaneously moved to bring another figure beneath the opening in the plate *L*. The
70 parts are so arranged that this motion is given to the dial *Q* as the sixty-minute mark upon the dial *k* passes the index 2 upon the plate *L*. It will thus be seen that the dial *k* takes the place of the minute-hand and the
75 dial *Q* takes the place of the hour-hand, and there is but little variation to the time mechanism of the watch, because the power re-
80 quired to turn the star-wheel *J* and dial *Q* is accumulated gradually by the snail-cam *G* pressing back the lever *H*.

Covering-plates may be introduced at each side of the plate *L* and adjacent to the dial *k*, to hide the mechanism of the watch, if de-
sired.

I claim as my invention—

85 The combination, with the wheel *e* and arbor 1, revolved once in each hour by suitable time mechanism, of the dial *k*, connected with the arbor 1, the arbor 3, and wheel *F*, gearing with the wheel *e*, the cam *G* on the arbor 3
90 and connected to the wheel *F* by a pin in a slot, the star-wheel *J*, and hour-dial *Q*, the projection *g'* on the cam *G*, for moving the star-wheel, and the lever *h*, acting upon the
95 cam *G* to move the same when the projection *g'* is in contact with the star-wheel, substantially as set forth.

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

HENRI JACCARD.

Witnesses:

JOH. BIEGA,
JOHANN WÄBER.