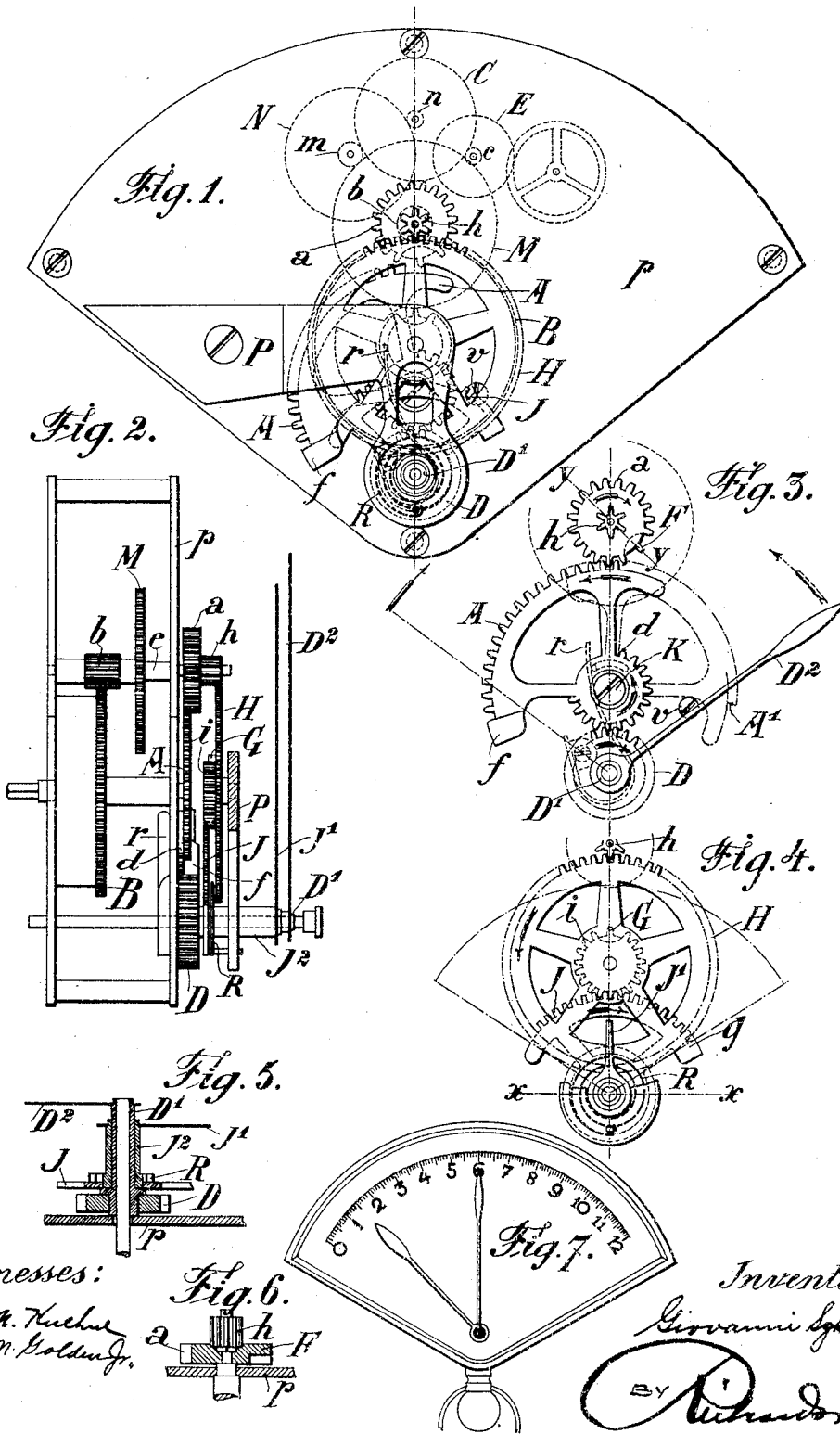


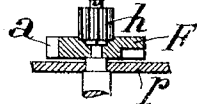
G. SGHERLINO.  
CLOCK OR WATCH MOVEMENT.  
APPLICATION FILED JUNE 9, 1903.



Witnesses:

H. M. Kuehn  
J. M. Golding, Jr.

Fig. 6.



Inventor:

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ATTORNEYS

## UNITED STATES PATENT OFFICE.

GIOVANNI SGHERLINO, OF TURIN, ITALY.

## CLOCK OR WATCH MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 788,797, dated May 2, 1905.

Application filed June 9, 1903. Serial No. 160,778.

*To all whom it may concern:*

Be it known that I, GIOVANNI SGHERLINO, a subject of the King of Italy, and a resident of Turin, Italy, have invented certain new and useful Improvements in Clocks, of which the following is a specification.

The invention relates to a clock or watch having its dial made in the shape of an arc of a circle, both hands passing from one end of the arc to the other and then suddenly returning to the starting-point.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front view of a watch made in accordance with the invention, the dial and hands being removed. Fig. 2 is a side view. Fig. 3 is a plan of the minute-hand train of gearing. Fig. 4 is a plan of the hour-hand gearing. Fig. 5 is a section on line *xx* of Fig. 4. Fig. 6 is a section on line *yy* of Fig. 3. Fig. 7 is a face view of a watch.

In Fig. 2 the trains and parts for operating the hands are shown, only the escapement-train being the same as generally used in watch-making.

A barrel B operates the escape-wheel E through pinions and wheels *b*, M, *m*, N, *n*, C, and *c*. On arbor *e*, which carries the wheel M and pinion *b*, is fitted a wheel *a* and a pinion *h*. The wheel *a* engages with a toothed sector A, pivoted at K, Fig. 3, and having teeth *d* around said pivotal point. The teeth *d* engage with a wheel D, fixed on cannon D', on which minute-hand D<sup>2</sup> is secured. Wheel *a* is twice as thick as the sector A, and on that part of it which engages with the sector three teeth are omitted, and in the middle of the space thus left a tooth F is placed, said tooth being of but half the thickness of the other teeth, (see Fig. 6,) so that the sector will not engage with it. At the left end of the sector A is a projection *f* of such height that it may engage with the tooth F when that part of the sector carrying said projection comes in proximity to the tooth. A spring *r* is constantly tending to push the sector A from left to right, so as to occupy the position A'. (Shown by dotted lines in Fig. 3.)

The hour-hand J' is fixed on cannon J<sup>2</sup>, loosely fitted on the cannon D', and rigidly connected

to cannon J<sup>2</sup> is a sector J, which is provided with a projection *g*. This sector engages with a wheel *i*, which, like the wheel *a*, is provided with a space formed by omitting three teeth, and in this space a tooth G of but half the thickness of the other teeth on said wheel is placed. Thus said tooth G is out of contact with the teeth of sector J, but is engaged by projection *g* on the end of the sector. Wheel *i* is connected with a wheel H, which engages with pinion *h*, connected to the wheel *a*, before described. A spring R is constantly tending to make the sector J turn from left to right.

A bridge P, screwed on the plate *p*, supports the hand-cannons, the sector J, and the wheels H and *i*.

On plate *p* is placed a dial like that represented in Fig. 7.

The operation of the device is as follows: The barrel B, being wound up, turns wheel *a* in the direction of its arrow by means of the pinion *b* and arbor *e*. Wheel *a* engages with sector A and moves it in the direction of the arrow, and this sector through the teeth *d* and wheel D moves the hand D<sup>2</sup> from left to right. When the hand D<sup>2</sup> is coming on the sixtieth minute of the dial's division, the empty space left by the absence of the three teeth of wheel *a* causes sector A to suddenly return back to its starting position under the action of spring *r*, thus causing hand D<sup>2</sup> to go back to zero-point of the dial. As soon as the sector reaches the end of its backward movement the projection *f* thereon comes in contact with tooth F of the wheel *a*, and as said wheel goes on turning it begins to push sector A in the direction of the arrow by means of the tooth F against the projection *f*, which enables the teeth of wheel *a* to engage again with the teeth of sector A, and thus the operation is repeated. During this time the pinion *h* turns wheel H, Figs. 1, 2, and 4, and the wheel *i*, connected to wheel H, is drawing sector J and the hour-hand J', connected thereto, from left to right. When the hand J' comes on the twelfth hour, the empty space made by the omission of the three teeth on wheel *i* is occupied by the last tooth of the sector J, and thus as there is nothing for said tooth to engage with the sector is thrown back to its starting-point by the spring R. Thus

