

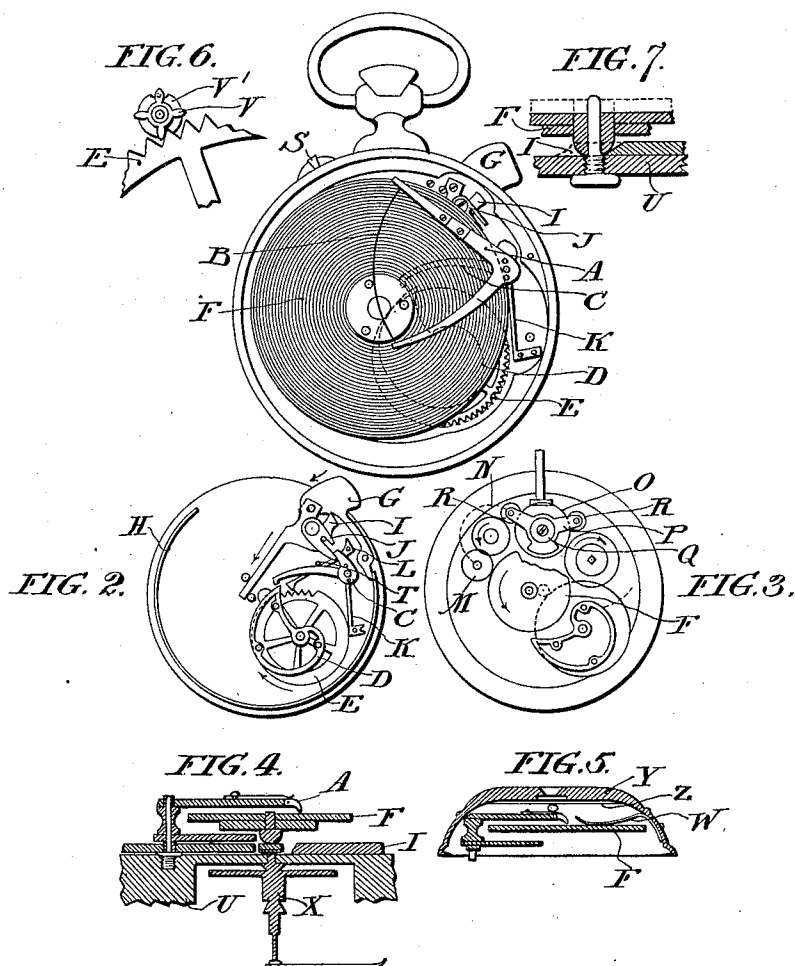
(No Model.)

C. SIVAN.
TALKING WATCH OR CLOCK.

No. 605,192.

Patented June 7, 1898.

FIG. 1.



WITNESSES:

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TALKING WATCH OR CLOCK.

SPECIFICATION forming part of Letters Patent No. 605,192, dated June 7, 1898.

Application filed August 24, 1897. Serial No. 649,288. (No model.) Patented in Switzerland February 21, 1892, No. 4,918.

To all whom it may concern:

Be it known that I, CASIMIR SIVAN, a citizen of the Republic of Switzerland, residing at Geneva, in the canton of Geneva, Switzerland, have invented certain new and useful Improvements in Talking Watches or Clocks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists of a novel construction and arrangement of mechanism for clocks and watches, as set out in the Swiss patent granted to me February 21, 1892, and being serially numbered 4,918, and embodies a disk provided with a number of concentric rings, each of which has upon its surface waves or undulations made in accordance with sound-vibrations for the purpose of calling out the hour or fraction thereof in place of the ordinary striking mechanism.

My invention further consists in mechanism for controlling said disk and in operating the same in unison with the ordinary clock or watch mechanism, as will be fully set out hereinafter.

Referring to the accompanying drawings, Figure 1 illustrates a rear elevation of a watch embodying my improvements, the rear case being removed for the purpose of exposing the record-disk and mechanism connected therewith. Fig. 2 illustrates a similar view with the outer case and record-disk removed, showing only the mechanism for elevating the record-disk and adjusting or regulating the position of the stylus with respect to the rings on the record-disk. Fig. 3 illustrates in diagram the mechanism for winding the two spring-drums, one for operating the clock mechanism and the other for operating the mechanism designed to rotate the record-disk. Fig. 4 represents a detached sectional view, enlarged, of the casing, carrying the stylus and record-disk, the minute-hand and pinion-hand connected to its shaft for operating the stylus through the medium of a gear-wheel. Fig. 5 is a sectional view of one of the cases

or covers of the watch, showing the diaphragm-stylus and record-disk with relation to said cover or casing. Fig. 6 is a detached view, enlarged, showing a portion of the gear-wheel carrying the stepped cam for determining the position of the stylus and the pinion for operating the same; and Fig. 7 is a sectional view, enlarged, showing a portion of the record-disk, its pivot, and a portion of the pointed or wedge-shaped arm for raising the record-disk into engagement with the stylus.

Referring to the letters of reference marked upon the drawings, A represents a stylus-lever provided with the usual stylus-points adapted to the record *a*, with a stout wire B, bent in the arc of a circle and extending from one to the other of the arms of the stylus-lever, as shown in Fig. 1 of the drawings, its function being to transmit the vibrations produced by the record to the diaphragm in the watchcase regardless of the position of the stylus.

On the shaft carrying the stylus is fixed a lever C, which rests upon and is controlled by the cam D, which determines the position of the stylus with respect to the rings upon the record-disk. This cam D is secured to a spur-wheel E, which engages a pinion V, secured to the shaft which carries the minute-hand of the watch, the minute-hand shaft being operated in the ordinary manner by a suitable train of gearing driven by means of a spring.

The record-disk F and its support, forming part thereof, are mounted upon a central shaft driven by a spring through the medium of a suitable train of gearing. The record-disk is formed of hard rubber or vulcanite and contains a number of concentric rings, each provided with an undulatory surface representing sound-waves which, through the medium of the diaphragm and stylus, call out the hour or fraction thereof corresponding to the time indicated by the hands on the dial of the watch.

The record-disk F is normally out of engagement with the stylus, and the lever C is by preference normally disengaged from the cam D. In bringing these parts into action I provide a pivoted lever G, which has a short

arm acted upon by a curved spring H, located in the edge of the watchcasing. The lever G is pivoted to a lever I, which has a long arm guided between the pins and tapered at its end, so that by depressing the lever G against the action of the spring H the tapered end of the lever I, passed under the conical end of the support carrying the record-disk, elevates it and brings the record-disk into engagement with the stylus. A lever J is secured to the framework of the watch by a pin which passes through a slot in the upper portion of the lever I. One end of the lever J is forked, and between the two prongs is a pin which is secured to the lever I. From this description it will be seen that when the lever G is depressed it presses down the lever I, so that the small pin secured to the lever I acts upon the lever J and carries its forked end downward, thus releasing the lower prong of the forked portion of the lever J from engagement with the short arm of the lever C, bringing into play the spring K, which presses the long arm of the lever C into engagement with the cam D. When the lever C is out of engagement with the cam D, said lever rests against a pin T, as shown in Fig. 2, which serves to limit the upward movement of the levers I and G.

A retaining-pawl L, which is spring-actuated, acts upon the teeth of the spur-wheel E, which, as shown in Fig. 2 of the drawings, are pointed and known as "star-teeth," and by the slight play or lost motion in the train of gears operating the spur-wheel E the pawl jumps after sufficient strain is placed upon the gear by the train from one tooth to another, thus causing the stylus to always come in perfect alinement with the rings upon the record-disk.

Motion is imparted to the record-disk by mechanism independent of the mechanism for operating the watch. In the present instance the lower part of the record-disk F is a toothed wheel which meshes with a toothed wheel M, which in turn engages a gear-wheel mounted upon and carried by the spring-drum N, which is of ordinary construction.

I prefer to wind the spring-drum operating the watch-movement and the spring-drum operating the record-disk by the same stem or winding device.

The stem O, which is of ordinary construction, I provide with a bracket P, which has two arms, each of which carries a pinion R, the said bracket being held in frictional contact, so as to be caused to move either to the right or to the left with the motion of the winding-stem, this frictional contact being established by means of a screw in the stem acting against the spring-washer Q, which bears against the bracket. Thus it will be seen that by turning the stem in one direction the bracket P will move and carry one of the gears R into engagement with the spring-drum on one side of the stem and by a reversal of said movement the opposite gear R

will be brought into action and the other of the spring-drums will be acted upon.

In Fig. 4 of the drawings I have shown the manner in which the stylus-lever A is pivoted to the support or framework U and the shaft and minute-hand of the watch, which is provided with the usual pinion X, operated upon by the usual watch mechanism.

The sound produced by the stylus A and diaphragm Z is conveyed through an opening in the cover Y, as shown in Fig. 5. In the cover Y is also secured a leaf-spring W, which rests upon the edge of the record-disk and returns to its initial position after the lever G has been released. The watch mechanism is of the usual character, and the watch is provided with the usual pin S, by which means the hands of the clock may be set.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with the mechanism of a watch or clock, a sound-reproducing machine comprising a record-disk, means for rotating the same, a diaphragm, a stylus-lever provided with a stylus adapted to the record and to said diaphragm, a cam driven by the watch mechanism adapted to move the stylus and stylus-lever across the record, and means as shown for moving the record-disk into and out of engagement with the stylus.

2. In combination with the watch or clock mechanism, a record-disk, means as shown for rotating the same, a stylus-lever provided with a stylus adapted to the record-disk, a diaphragm acted upon by the stylus-lever, a cam driven by suitable gearing from the minute-hand shaft, said cam being arranged to move the stylus and its lever across the face of the record-disk, and means as shown and described for moving the record-disk into and out of engagement with the stylus.

3. In combination with a clock or watch, a record-disk mounted upon a central shaft rotated by spring means through a train of gearing, a stylus-lever provided with a stylus adapted to traverse concentric rings upon the record-disk, a diaphragm adapted to be acted upon by the stylus-lever, means as shown and described to move the record-disk into and out of engagement with the stylus, a cam controlled by the minute-hand shaft through the medium of gearing for conveying the stylus across the face of the record-disk; means as shown to convey the stylus into and out of engagement with said cam, and a pawl adapted to a spur-wheel carrying said cam to determine the position of the stylus with respect to the record.

4. In combination with the clock or watch mechanism a record-disk mounted upon a central shaft, spring mechanism for rotating said shaft, a stylus-lever as shown, provided with a stylus adapted to the record, a diaphragm adapted to be vibrated by the stylus-lever, a cam controlled by the clock or watch mechanism through the medium of the min-

ute-hand shaft, said cam being arranged to carry the stylus-lever and stylus across the face of the record-disk, a spring-actuated lever adapted to move the record-disk into and out of engagement with the stylus and simultaneously move the stylus-lever into and out of engagement with said cam, and a pawl to engage the spur-wheel carrying said cam, for the purpose specified.

5 5. In combination with the clock or watch mechanism, a record-disk mounted upon a shaft, spring mechanism for rotating said shaft, a stylus-lever as shown, provided with a stylus adapted to the record, a vibrating diaphragm adapted to be acted upon by the stylus-lever, a cam for operating the stylus-lever controlled by the watch mechanism, through the medium of the minute-hand shaft and gearing, and a lever adapted to move the record-disk into and out of engagement with the stylus and simultaneously move the stylus into and out of engagement with said cam.

6. In combination with the clock or watch

mechanism, a record-disk mounted upon a central shaft, spring mechanism for rotating said shaft, a stylus-lever as shown, provided with a stylus adapted to the record, a diaphragm in contact with the stylus-lever, a cam for operating the stylus-lever controlled by the watch mechanism through the medium of the minute-hand shaft and gearing; a lever adapted to move the record-disk into and out of engagement with the stylus and simultaneously move the stylus-lever into and out of engagement with said cam, and a winding-stem provided with mechanism as shown so as to be capable of winding the spring of the watch mechanism when turned in one direction, and the spring controlling the record-disk when turned in the opposite direction.

In testimony whereof I affix my signature in presence of two witnesses.

CASIMIR SIVAN.

Witnesses:

E. A. STOREY,
E. F. BARRY.