

(No Model.)

C. H. MEYLAN.
Chronograph Watch.

No. 235,794.

Patented Dec. 21, 1880.

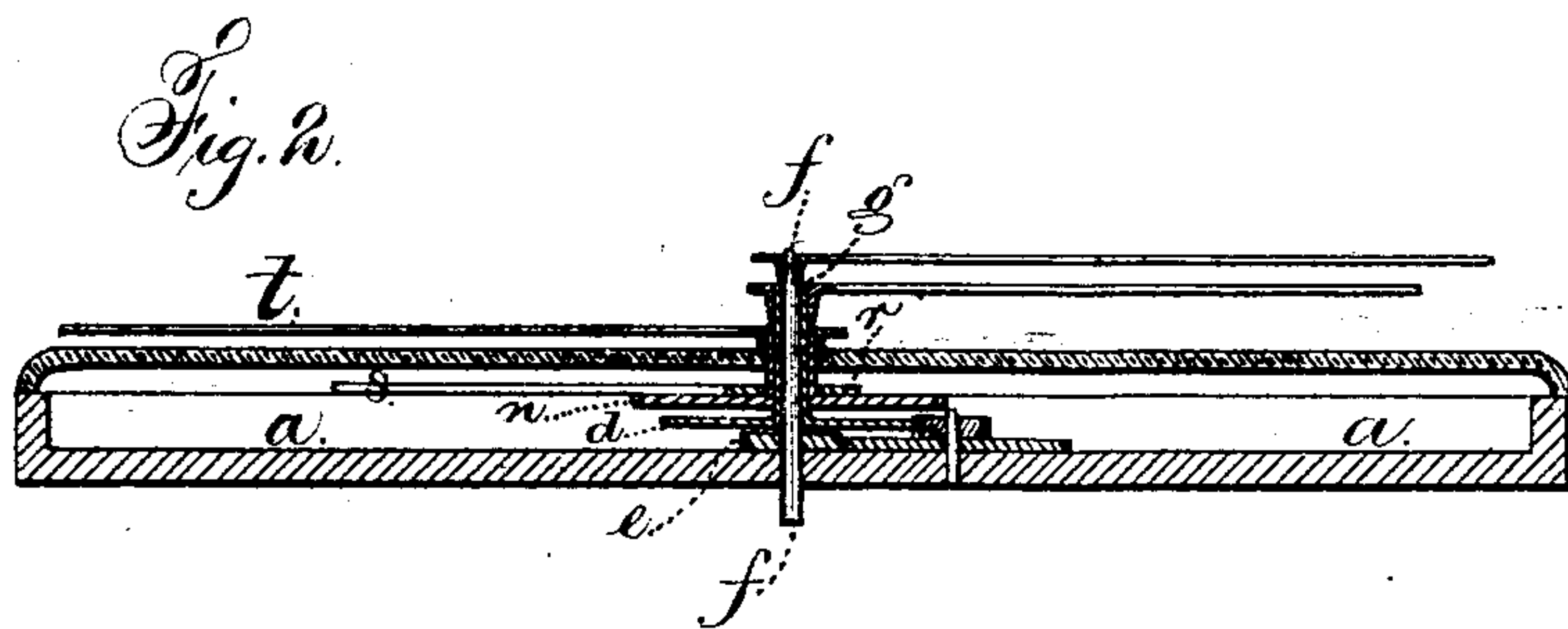
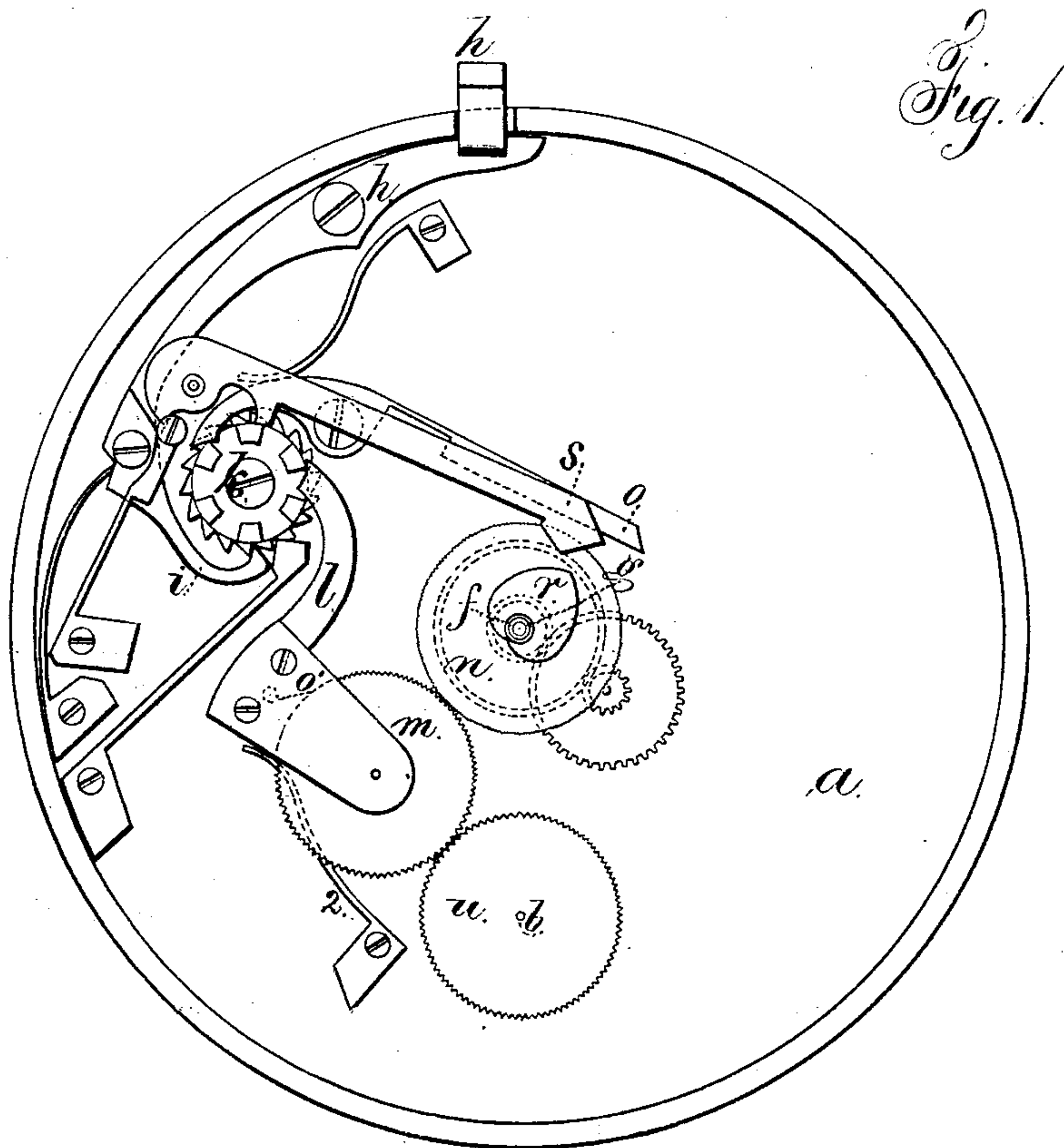
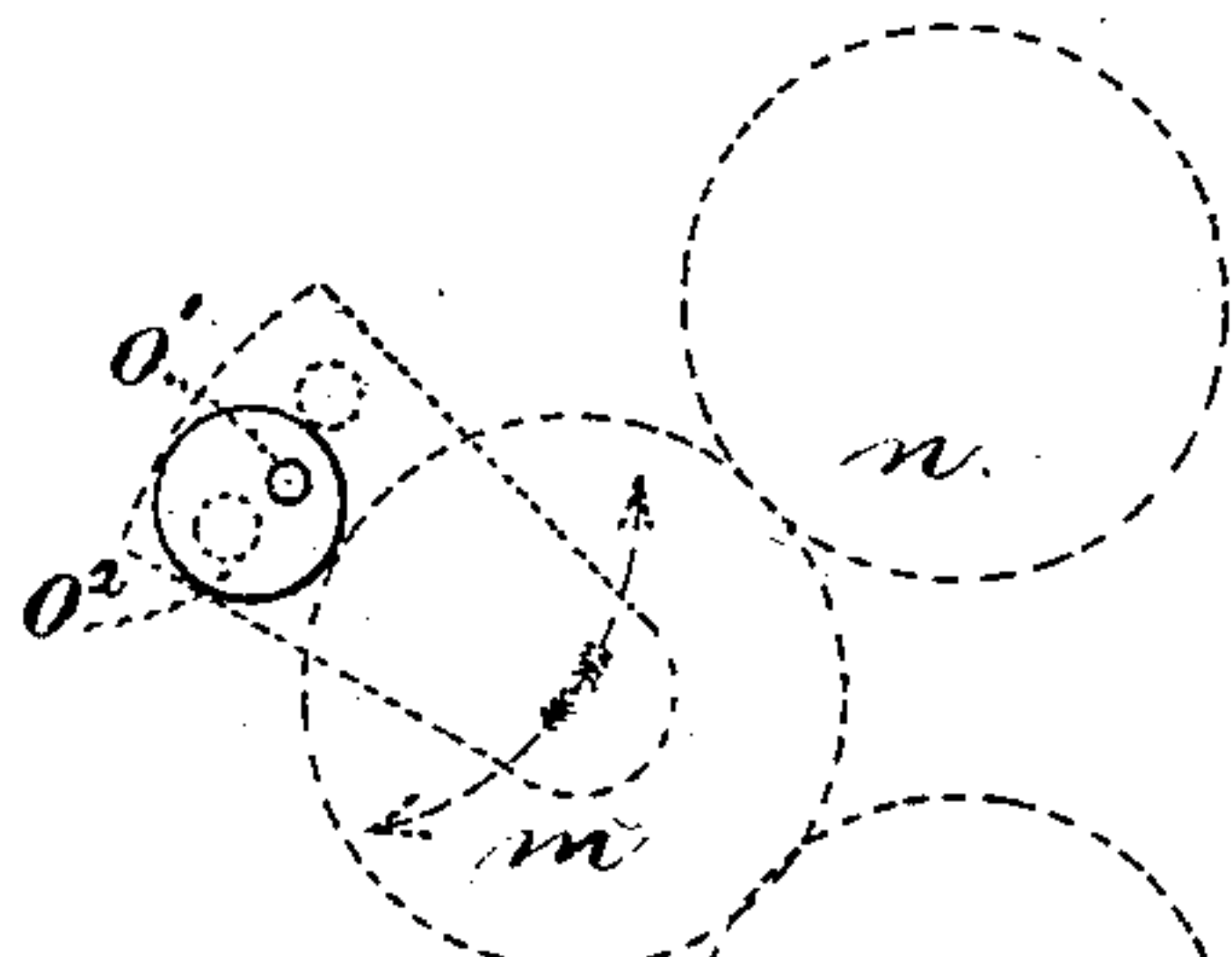


Fig. 3.



Witnesses

Harold Serrell
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att'y

UNITED STATES PATENT OFFICE.

CHARLES H. MEYLAN, OF NEW YORK, N. Y.

CHRONOGRAPH-WATCH.

SPECIFICATION forming part of Letters Patent No. 235,794, dated December 21, 1880.

Application filed April 5, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. MEYLAN, of the city and State of New York, have invented an Improvement in Watches, of which the following is a specification.

Watches have been made with an independent second-hand and stopping, starting, and fly-back mechanism, usually called "chronographs." In these watches the second-hand is upon a tubular arbor that surrounds the arbor of the minute-hand, and the wheel that actuates the independent second-hand is necessarily between the gearing that connects from the minute-hand to the hour-hand. Hence the hour-gear has to be carried by a bridge, and the pinion that operates the same has to pass by the chronograph-wheel and into an opening in the bridge, and there is considerable space occupied in the watch. The distance between the face and the plate in ordinary watches is not sufficient for the reception of this kind of chronograph-movements.

My invention is made for simplifying the construction of the parts and arranging them in such a manner that the means for actuating the chronograph second-hand will occupy but little more room than that usually found between the dial and watch plate in ordinary watches, so that the independent second-hands can be applied with but little cost to ordinary watches. I accomplish these objects by applying the driving-wheel of the independent second-hand above the gearing that connects the hour and minute hands, and between the same and the face, and introducing the independent second-hand between the hour-hand and the face, so that the space occupied by the mechanism that drives the independent second-hand is only the thickness of the driving-wheel and heart-shaped cam, and in most watches the wheels connecting the hour and minute hand can be recessed into the plate sufficiently to allow of the introduction of said wheel and cam next to the back of the face without disturbing the other parts of the watch or the face.

In the drawings, Figure 1 represents the parts with the face of the watch removed. Fig. 2 is a sectional view of the wheels that connect the hands and of the hands in their relation to the face, and Fig. 3 is a separate view of

the bearing for the intermediate wheel that communicates motion to the independent second-hand. These parts are all of a magnified size.

The watch-plate *a*, arbor *b* of the second-hand, the wheels *d* and *e*, that connect the hour and minute hands, the arbor *f* of the minute-hand, and the tubular arbor *g* of the hour-hand, are all of the usual character.

The push-lever *h* acts upon the spring-pawl *i* to rotate the cam-wheel *k*, and the cams on this wheel *k* operate to swing the arm *l*, that carries the intermediate wheel, *m*, and move it out of contact with the chronograph-wheel *n*, or allow the spring 2 to press it into contact with said wheel *n*, and the cams also actuate the brake-lever *o* to move it from the wheel *n*, or bring it into contact with the edge thereof, and the cams also operate the lever *s*, that acts against the heart-cam to bring the independent second-hands around to 12 on the dial. One push of the lever *h* connects *m* and *n*, so that the hand *t* starts off and denotes seconds, the second push separates *m* and *n* and applies the brake-lever *o* to stop the independent second-hand, and the third push on the lever *h* removes the brake and acts upon the heart-cam to return the independent second-hand to 12. These parts act in a similar manner to the chronograph-movements heretofore made.

My peculiar improvement relates, as aforesaid, to the wheel *n* and heart-cam *r*, surrounding the tubular arbor of the hour-hand, so as to revolve around the arbor of the hour-hand, and provided with a tubular arbor to carry the second-hand *t* between the hour-hand and the face, and thereby render unnecessary the bridges and complicated gearing and costly construction heretofore resorted to in watches of this character.

The intermediate wheel, *m*, and arm *l* swing upon a pivot-pin, *o'*, and the teeth of the wheels *m*, *n*, and *u* being very fine, it is difficult to adjust the pivot of the arm *l* so as to make the teeth of the wheels *m* and *n* gear together properly. To provide for this I make use of a bushing, *o''*, in the watch-plate, the same having in it an eccentric hole, as seen in Fig. 3, so that by turning this bushing the pivot-hole therein will be made to approach toward or recede from the arbor of the second-

hand, and thus bring the gears properly together. In swinging the arm *l* to bring the wheel *m* into contact with the wheel *n* the motion is at right angles, or nearly so, to a line
5 extending from the pivot *o'* to the seconds-arbor. Hence the teeth of the wheels *m* and *u* remain properly in gear when the bushing has been adjusted.

I claim as my invention—

10 1. In a chronograph, the wheel *n*, provided with a tubular arbor surrounding the arbor of the hour-hand and having the independent second-hand *t*, that revolves between the hour-hand and the dial, and said wheel *n* being be-
15 tween the back of the dial and the wheels that connect the minute and hour hands, in combi-

nation with the heart-cam upon the wheel *n*, and the mechanism for connecting the wheel *n*, and seconds-arbor and the brake-lever *o*, and fly-back lever *s*, substantially as set forth. 20

2. The combination, with the seconds-wheel *u*, intermediate wheel, *m*, and chronograph-wheel *n*, of the arm *l*, pivot *o'*, bushing *o''*, and eccentric hole therein for the pivot *o'*, as and for the purposes set forth. 25

Signed by me this 2d day of April, A. D. 1880.

CHARLES H. MEYLAN.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.