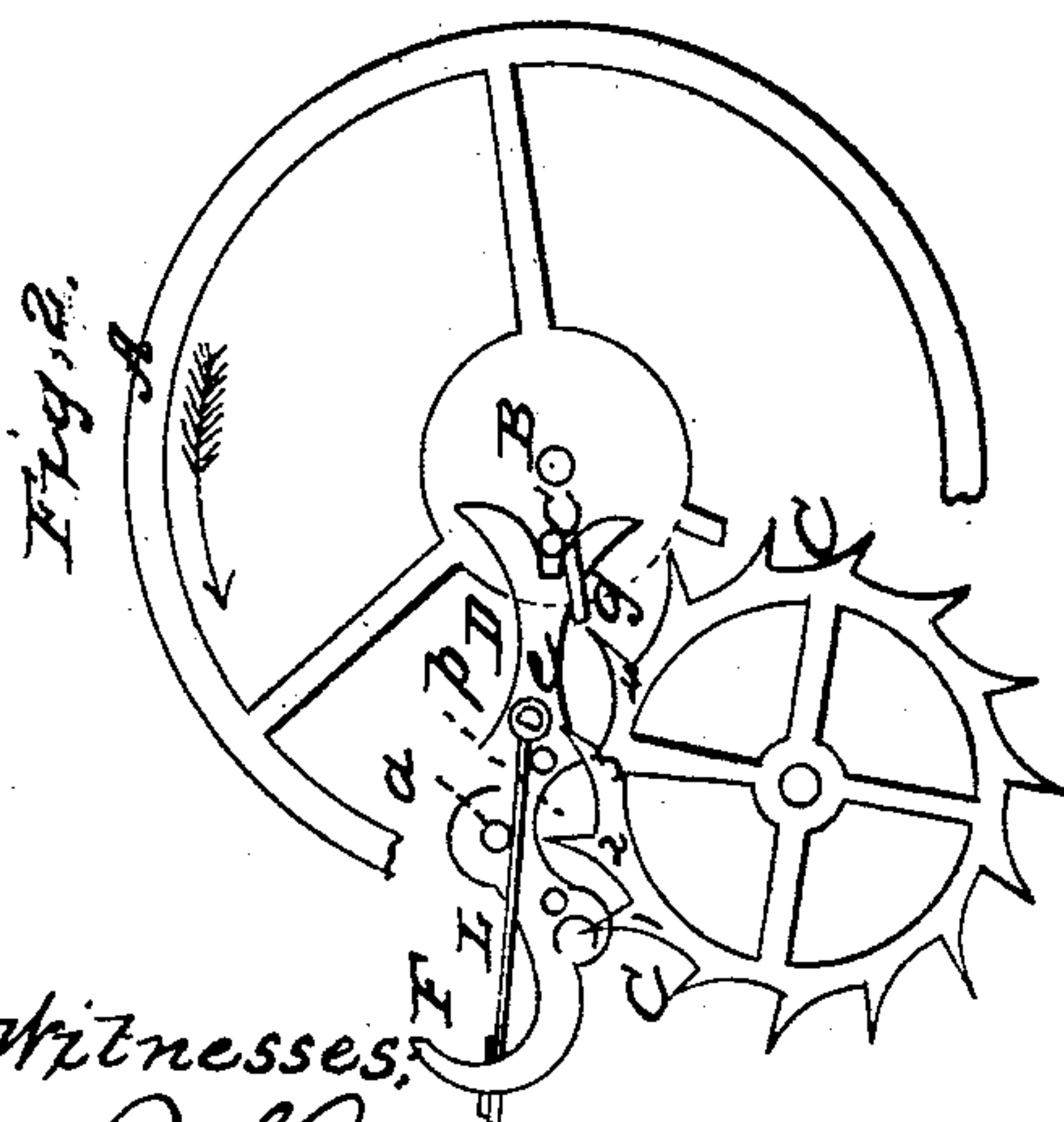
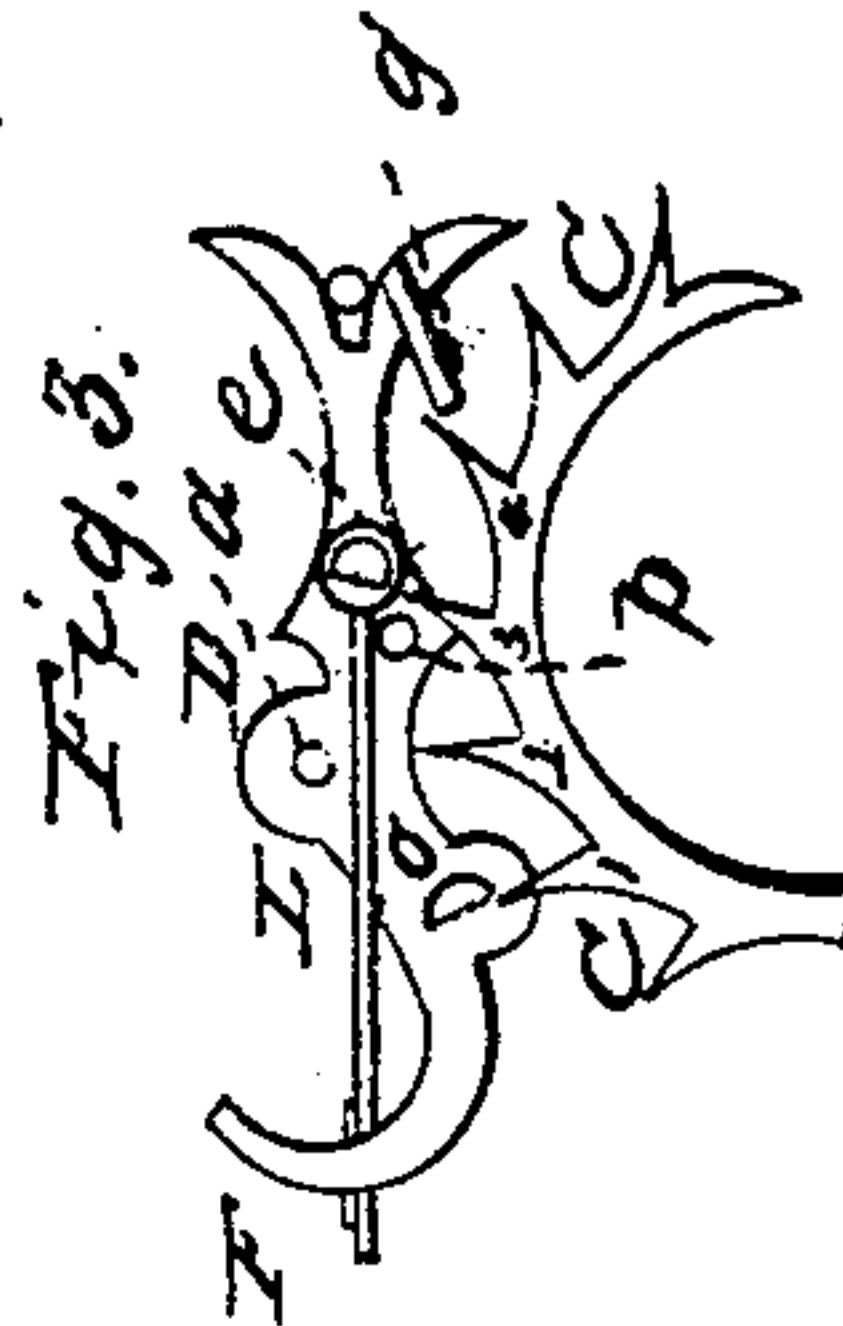
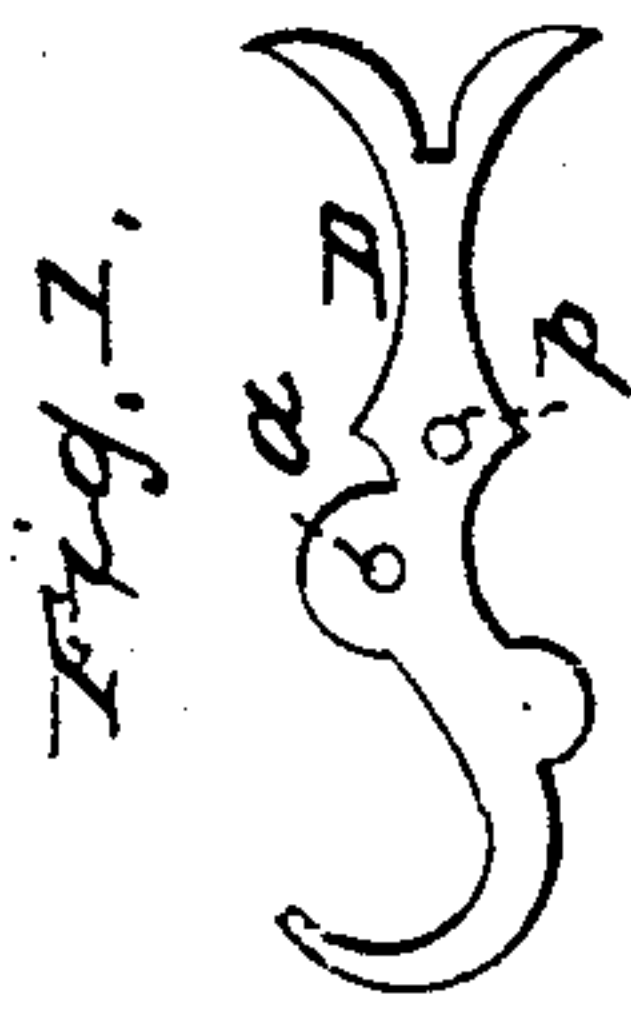


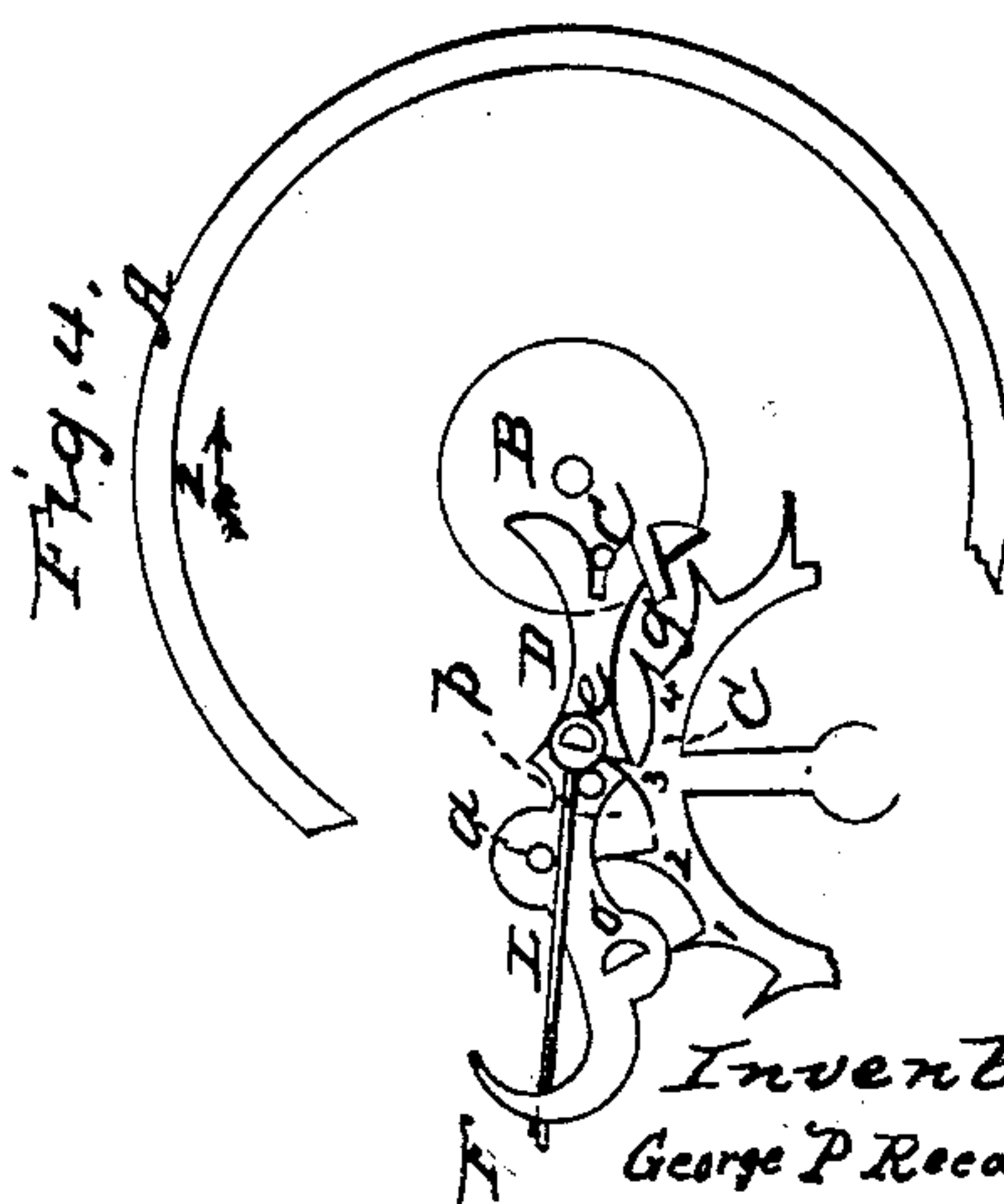
G. P. REED.
Watch Escapement.

No. 49,155.

Patented Aug. 1, 1865.



Witnesses:
F. D. Hale Jr
H. C. Fisher



Inventor:
George P Reed

by his Attorney
R. H. Eddy

UNITED STATES PATENT OFFICE.

GEORGE P. REED, OF ROXBURY, MASSACHUSETTS.

IMPROVEMENT IN WATCH-ESCAPEMENTS.

Specification forming part of Letters Patent No. **49,155**, dated August 1, 1865.

To all whom it may concern:

Be it known that I, GEORGE P. REED, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented an Improved Chronometer or Watch-Escapement; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view of the escapement-lever; Fig. 2, a representation of the escapement as its parts appear when the lever is in one of the extremes of its vibration. Fig. 3 denotes the situations of the parts when the escapement-lever is in its neutral or mean position. Fig. 4 exhibits the escapement when the lever is in its other extreme position.

The nature of my invention consists in the combination of a movable detent and a spring and stop with the escapement-lever, carrying a fixed detent—that is, one stationary relative to such lever—and arranged in manner and so as to operate with the escape-wheel and the impulse-pallet of the balance-wheel, substantially as hereinafter specified.

In the said drawings, A denotes the balance-wheel, B the roller thereof, and C the escapement-wheel, or “scape-wheel,” as it is usually termed, they being arranged in the ordinary manner. The pallet of the roller B is shown at *g*.

D is the furcated escapement-lever, which vibrates on a center pin or bearing, *a*, and receives its vibratory motion from the balance-wheel or the stud *c*, projecting from the roller B. The said lever has one fixed detent, *o*, and one movable detent *e*, they being arranged relatively to the scape-wheel in manner as shown in the drawings. The fixed detent extends directly from the lever, while the movable detent is fastened to the end of a spring, L, which extends longitudinally over the lever, and has its other end fastened to the tail of the lever by a wedge, F, which is driven into a slot in the tail, the spring being inserted in such slot. A small stud, *p*, projects from the lever near to the spring L and the movable detent, the same being situated as shown in the drawings.

In Fig. 2 the balance-wheel is shown as in movement in the direction denoted by the arrow *x*. The pin *c* of the roller may be supposed to be in the act of just entering the fork

of the lever. During the advance of such pin *c* the lever will be moved in one direction on its center pin, and during such movement the fixed detent *o* will be carried beyond that tooth, 1, of the scape-wheel which may be against it. The movable detent *e* will also be pressed against the back of the tooth 3, next adjacent to it, and the spring L will allow the lever to move under the detent, and carry the stud *p* away from the spring until the parts assume the positions exhibited in Fig. 4, where the tooth 3 is shown as locked in the movable detent *e*. The balance next moves in the direction exhibited by the arrow *z*, in Fig. 4, and so as to carry the lever back to the position shown in Fig. 2. At the termination of the first vibration of the lever the impulse-pallet *g* of the roller B will be in a position to be caught or taken by the next advancing tooth, 4, of the scape-wheel, such tooth giving impulse to the balance in the direction of the arrow *x*. In the meantime the detent-spring L will have fallen against the stop-pin *p*, and the detent *e* will be in readiness to catch the next advancing tooth. On the return vibration of the lever the movable detent *e* becomes disengaged from the tooth, and the fixed detent will be brought into a position to detain the next adjacent advancing tooth of the scape-wheel.

My invention may be said to be an improvement on that patented September 24, A. D. 1844, by Oramel W. Waste, the main difference between the two escapements being the movable detent, its spring, and stop, as herein described, instead of a fixed detent, as employed in the escapement of the said Waste.

The advantage of my improvement consists in its effecting a great saving in what watch-makers term the “drop,” of the escape-wheel as it passes from the front detent and takes on the rear one.

In the escapement of the aforesaid Waste there are two fixed detents. Consequently the escaping tooth of the scape-wheel has to pass fully off the detent, and leave a small amount of distance between it and the detent, in order that in the next pass of the lever the detent may come in free and clear of the back of the tooth—otherwise it would come to a dead stop; but as the detent of my improvement is applied to a spring affixed to and carried by the lever, such detent will be pushed

back and out of the way as it comes in contact with the back of the tooth.

The object of reducing the drop of the scape-wheel as much as possible is to increase the action of the wheel on the impulse-pallet, for by such means a sufficient amount of motion can be imparted to the balance-wheel by an expenditure of much less power, and I am thereby enabled to save much of the wear that would otherwise result to the running parts of the watch or time-piece.

Having described my invention, what I claim is as follows:

The combination of the movable detent *e* and the spring *L* and stop *p* with the lever *D*, carrying a fixed detent, *o*, and arranged in manner and so as to operate with the scape-wheel and the impulse-pallet of the balance-wheel substantially as specified.

Witnesses:

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F. P. HALE, Jr.