

O. GATES.

Reversible Center Pinions for Watches.

No. 144,897.

Patented Nov. 25, 1873.

Fig. 1.

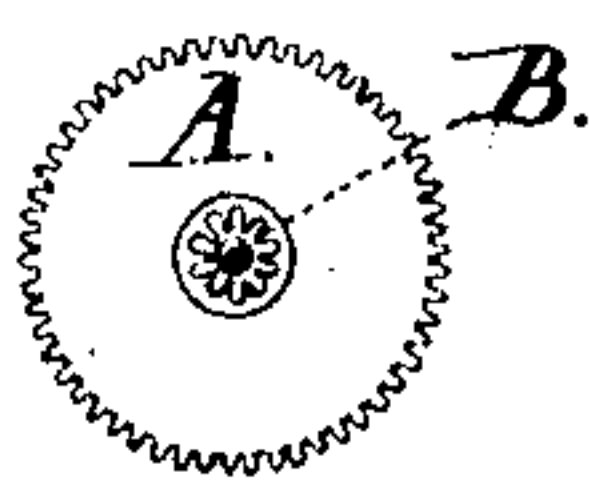


Fig. 2.

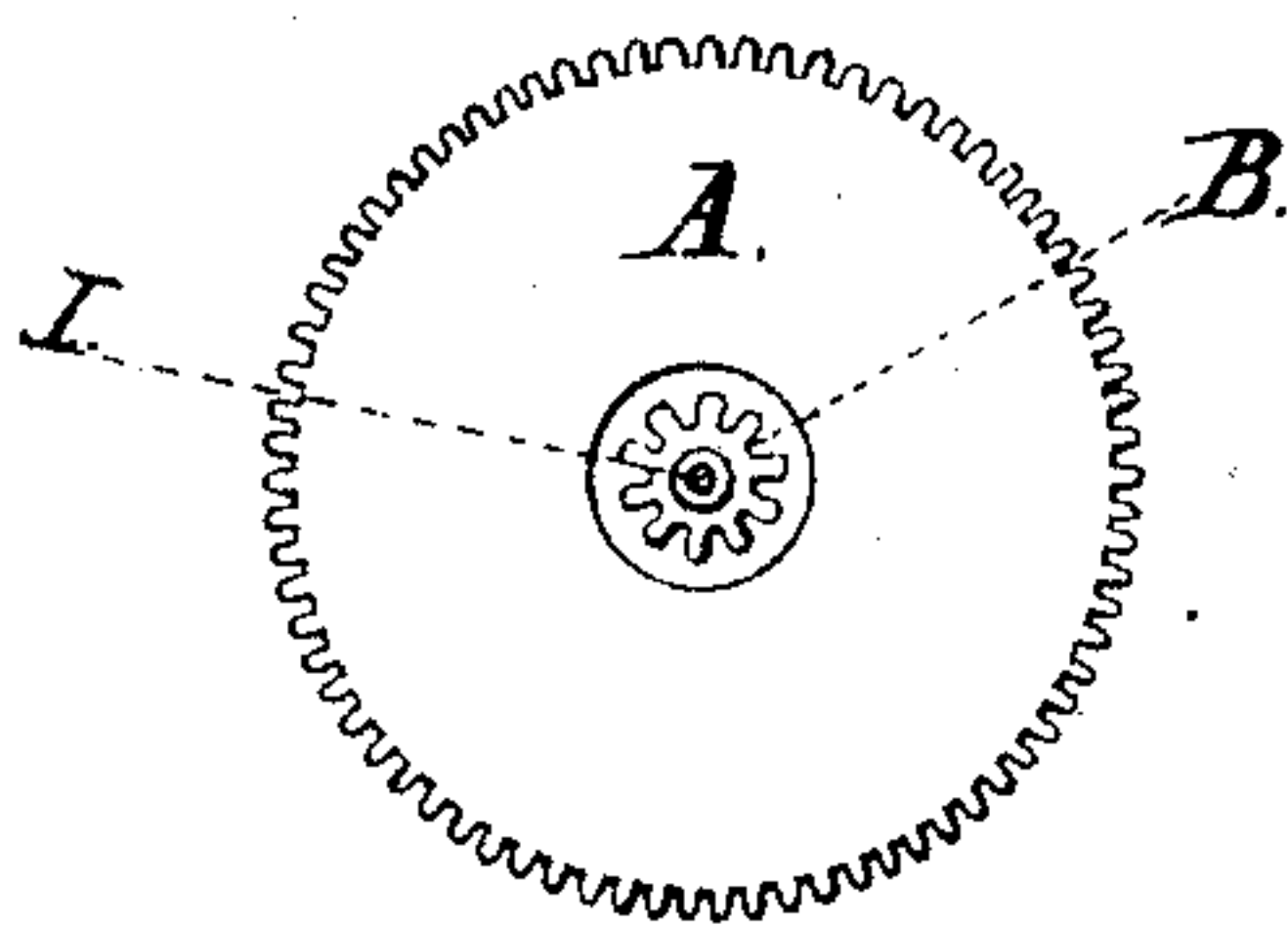
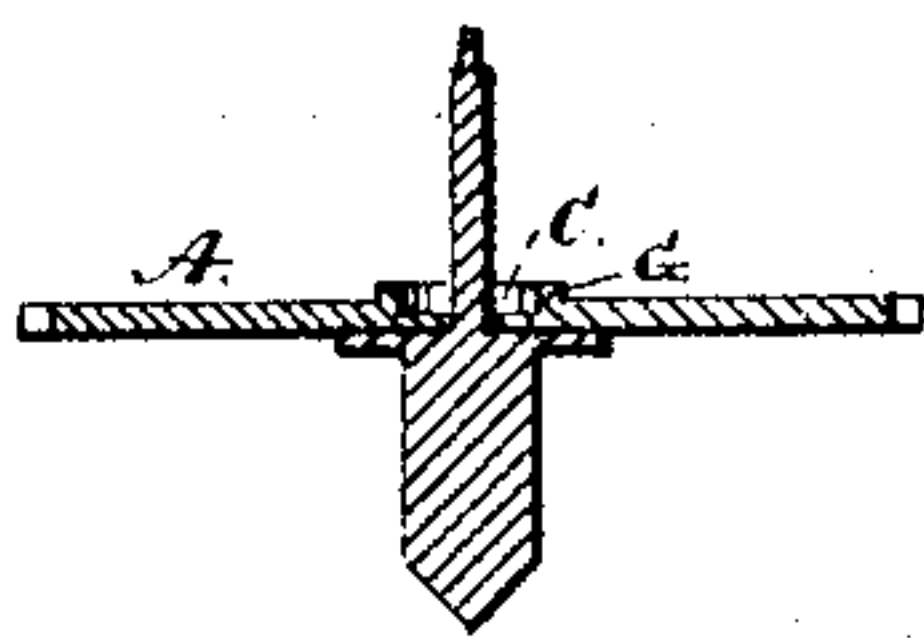
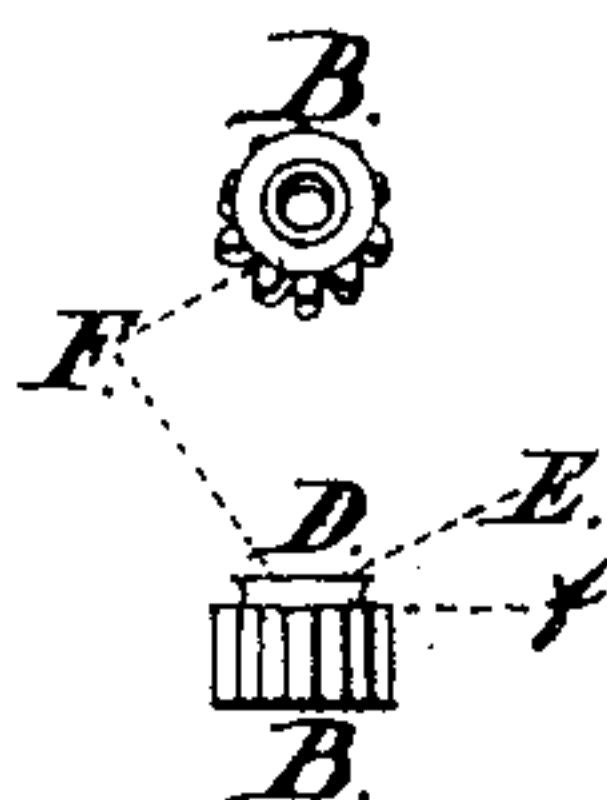
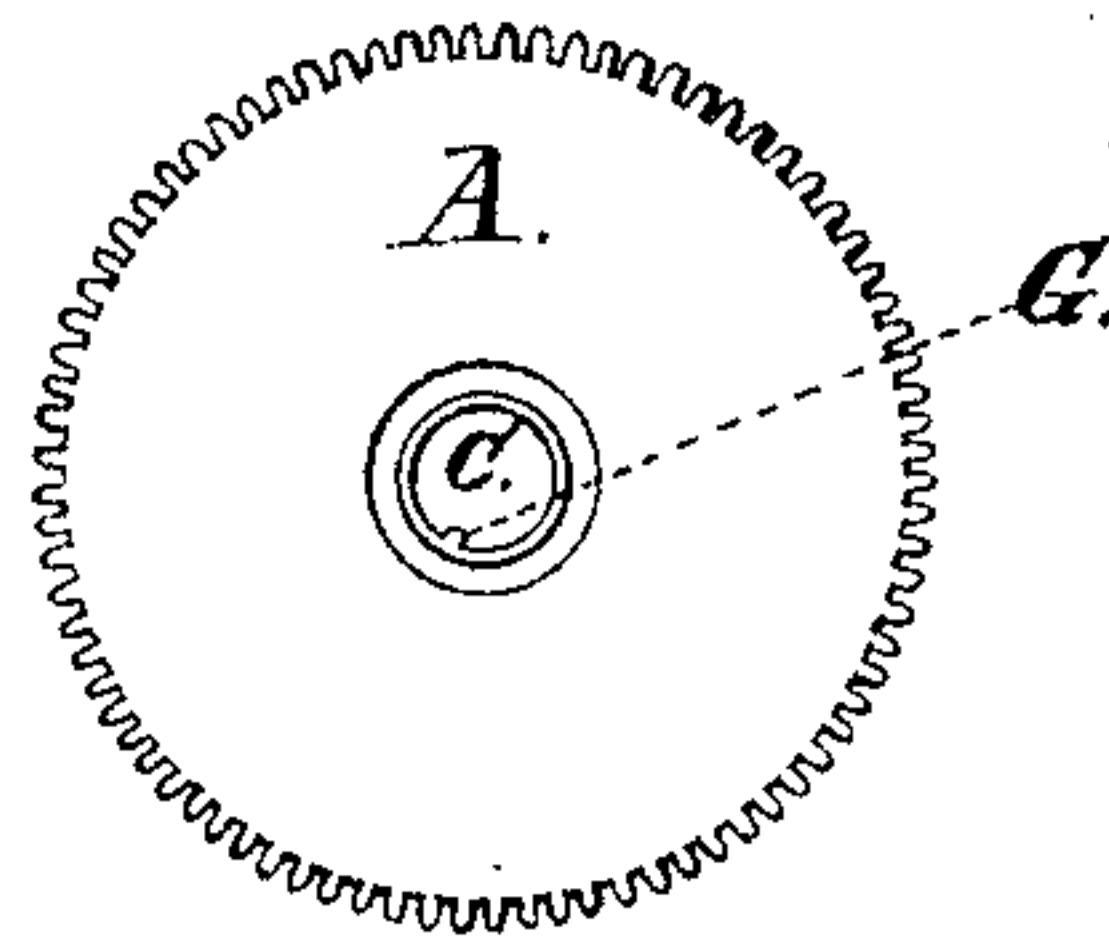


Fig. 3.



Witnesses

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OLMSTED GATES, OF COLUMBUS, OHIO.

IMPROVEMENT IN REVERSIBLE CENTER-PINIONS FOR WATCHES.

Specification forming part of Letters Patent No. **144,897**, dated November 25, 1873; application filed October 3, 1873.

To all whom it may concern:

Be it known that I, OLMSTED GATES, of the city of Columbus, county of Franklin and State of Ohio, have invented certain Improvements in Reversible Pinion for Center-Wheel of a Watch, of which the following is a specification:

My invention relates to the combination of wheel and loose pinion in such a manner that they may become instantly detached by the reaction of the main-wheel, caused by the breaking of the mainspring, or any other cause for reaction, thus preventing any injury to the watch.

On the arbor is formed a cup or recess, in which a clutch is so placed that it will connect with a spiral groove formed on the outside of the lower end of the loose pinion, firmly connecting the loose pinion with the arbor, but instantly detaching itself at the slightest reaction of the main-wheel.

Figure I is a top view of wheel embodying my invention. Fig. II is an enlarged view of the same. Fig. III is a top view of the wheel, showing the cup in which works the tenon, also showing the clutch which works in the spiral groove and holds the pinion to its place.

A is the brass part of the wheel. B is a hollow pinion, and is fitted loosely on the arbor I. C is the cup or socket which surrounds the arbor I, and is large enough to receive the tenon D. D is the tenon on which is cut the spiral groove E, and is made just small enough to revolve inside the cup or socket C. E is the spiral groove cut on the tenon D. F f are

the ends of the spiral groove E. G is a clutch which works in the spiral groove E until it arrives at the upper end, *f*, where its farther movement in that direction is arrested, therefore holding the pinion B perfectly secure. I is the center-wheel arbor.

I make no claim to a reversible pinion as my invention, for I am well aware that it is not new; but I claim an improvement in reversible pinions, whereby they become more certain to be instantly detached by the slightest reaction.

The practical objection to devices of this sort has been that the reverse action by screw-motion often continues to raise the pinion until it strikes the upper plate. This objection is entirely obviated by my device, as the slightest reversion entirely separates the parts, leaving the spring free to act until its force is expended, without any possibility of continuing the separation until the parts are injured.

What I claim as my invention is—

The cup C and tenon D, in combination with arbor I, and wheel A, and pinion B, and secured by the groove E and clutch G, or their equivalent, substantially as and for the purpose hereinbefore set forth.

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

OLMSTED GATES.

Witnesses:

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HENRY C. TAYLOR.