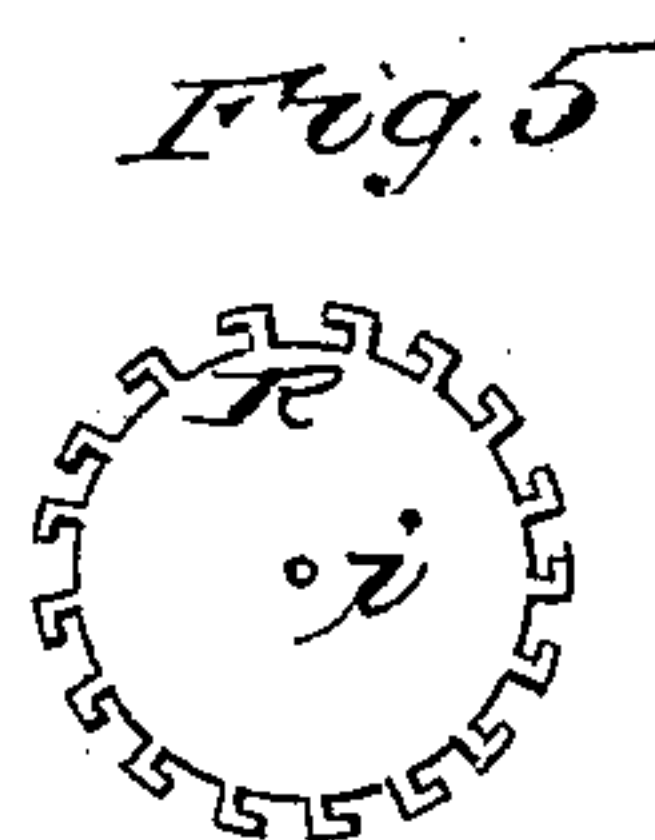
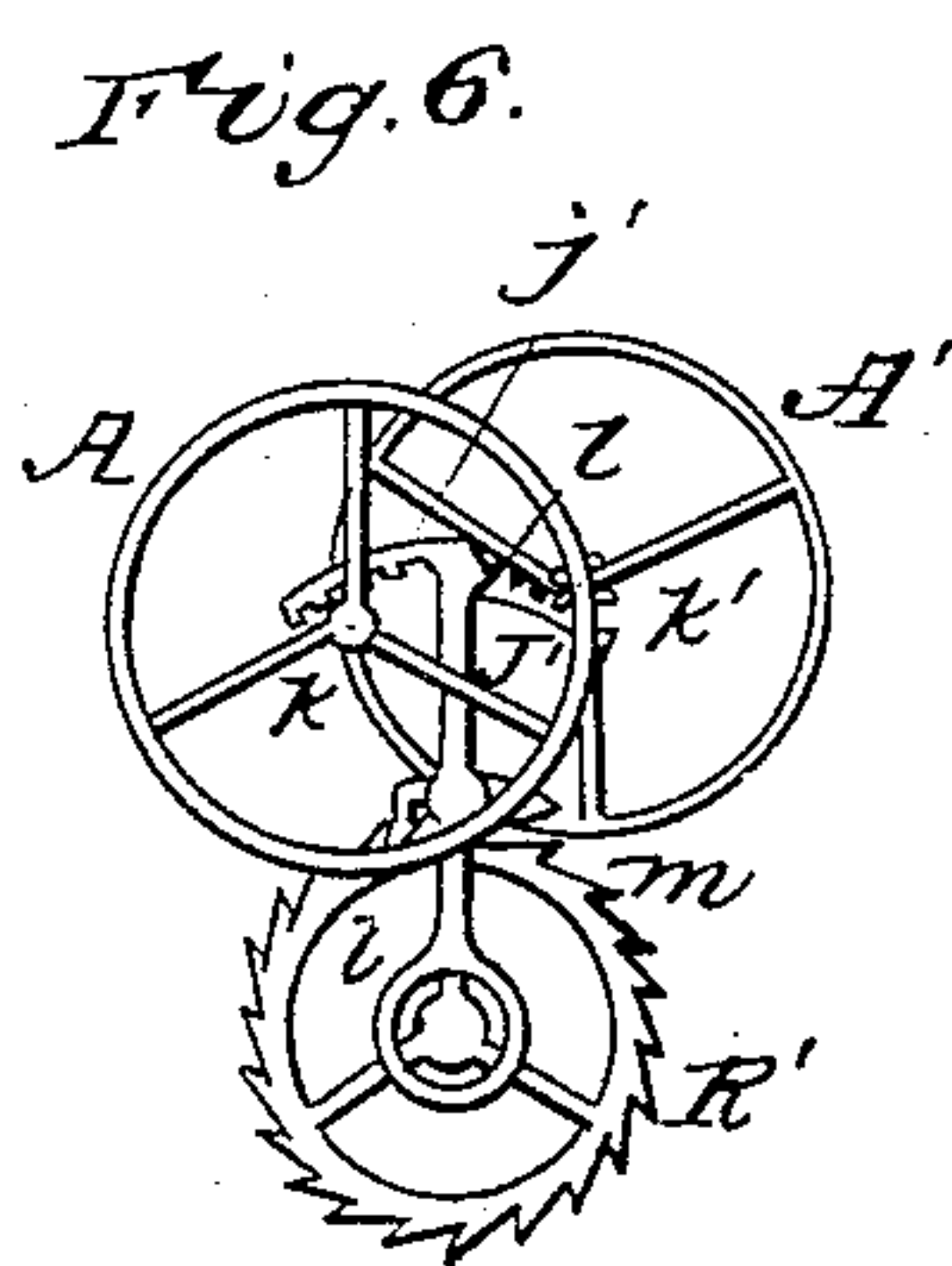
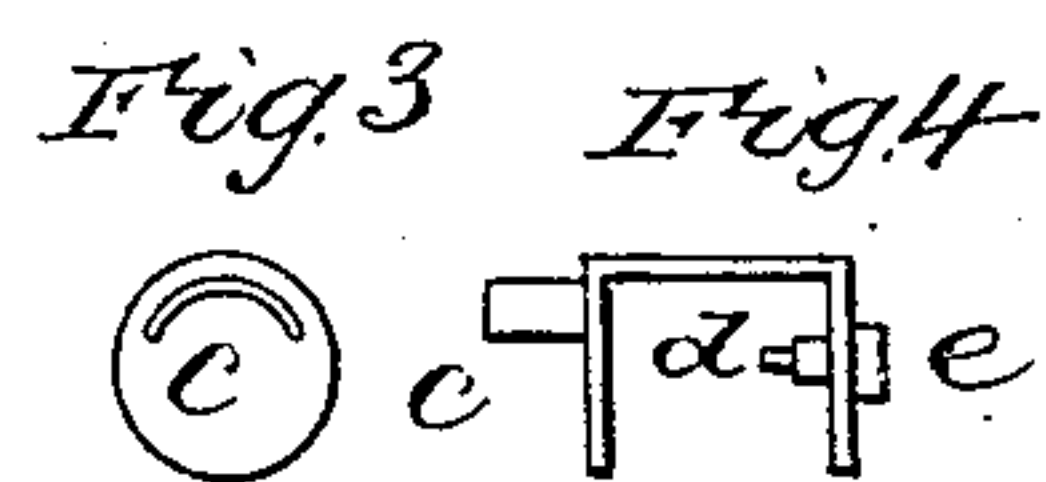
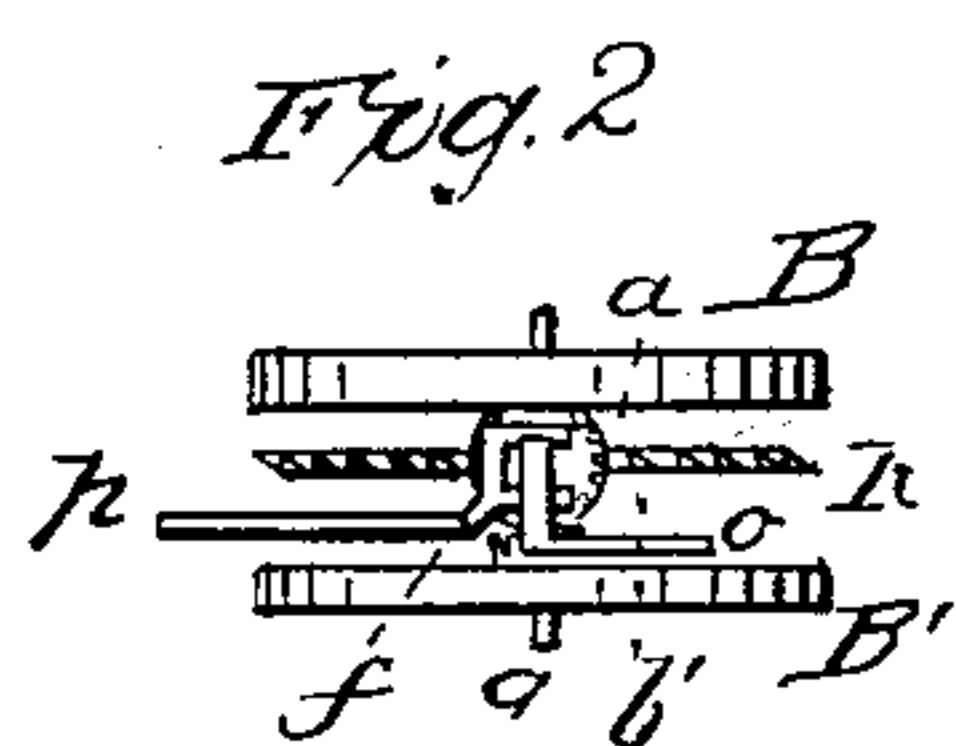
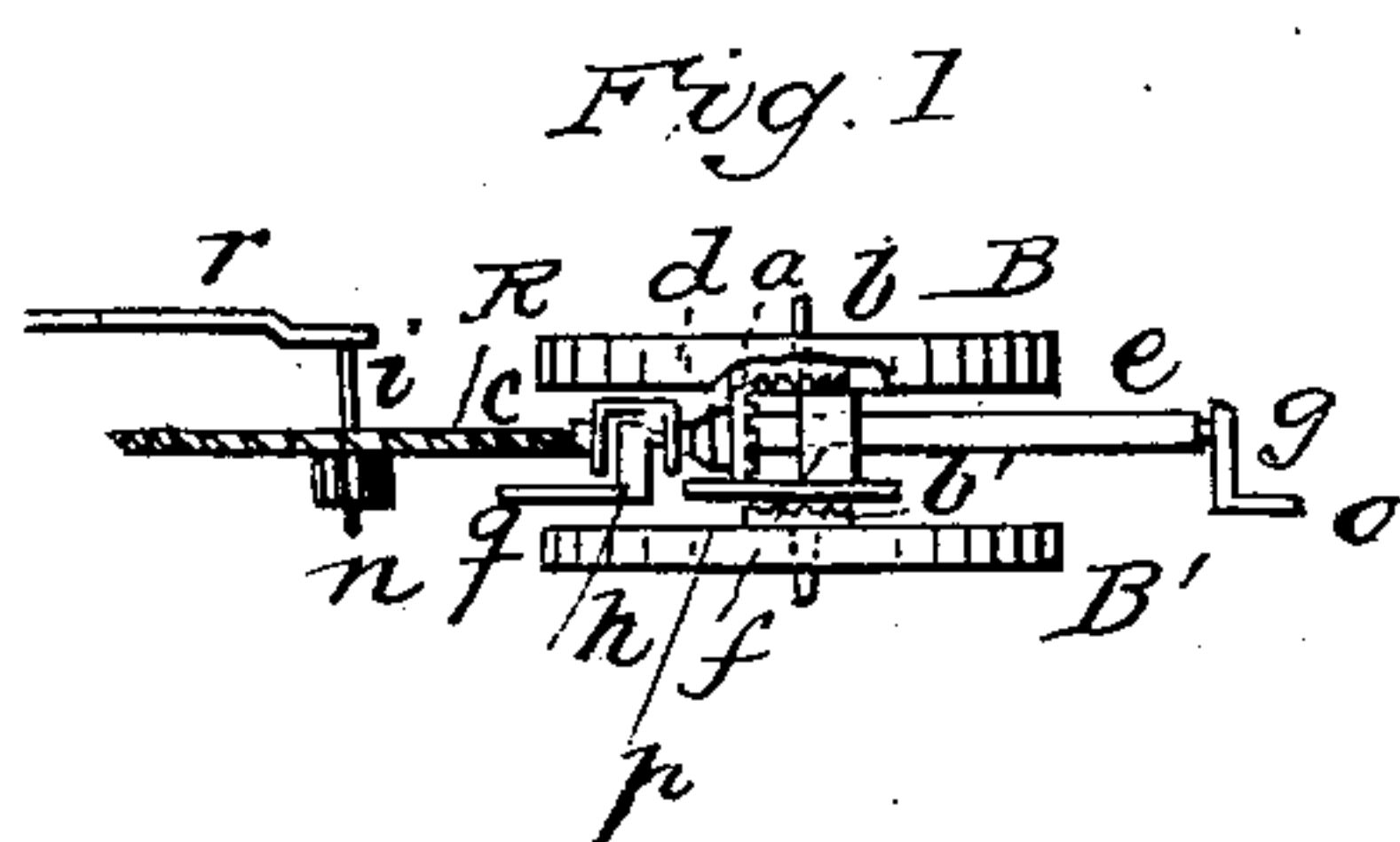


C. O. GUERNSEY.
Watch Escapement.

No. 35,373.

Patented May 27, 1862.



UNITED STATES PATENT OFFICE.

CALVIN O. GUERNSEY, OF CORNWALL, VERMONT.

IMPROVEMENT IN WATCH-ESCAPEMENTS.

Specification forming part of Letters Patent No. 35,373, dated May 27, 1862.

To all whom it may concern:

Be it known that I, CALVIN O. GUERNSEY, of Cornwall, in the county of Addison and State of Vermont, have invented a new and useful Improvement in Watches and other Time-Pieces, of which the following is a full and exact description, reference being had to the accompanying drawings and the letters of reference marked thereon, each letter indicating the same thing wherever it is seen.

The object and design of my invention are to counteract the effect of any sudden jar upon a watch or other time-piece by constructing the same with two balance-wheels carried by the same driving-power but oscillating in opposite directions. The same jar or sudden shake which accelerates the motion of one wheel will consequently retard that of the other and the motion of the whole will remain unaltered, or nearly so.

To enable those skilled in the manufacture of time-pieces to make them with my improvement, I proceed with the aid of the accompanying drawings to describe how this may be made.

Figures 1, 2, 3, 4, and 5 represent the escapement of a cylinder-watch and my improvement with the several parts; Fig. 6, that of a lever-watch with said improvement.

In all of the figures the parts are more or less enlarged.

In Figs. 1 and 2, B is the balance-wheel of a cylinder-watch constructed in nearly the usual way and placed in the usual location above the shaft *e* of the driving-wheel *a*. B' is another balance-wheel placed directly on the opposite side of the same driving-wheel

and of the whole movement. The arbors of both balance-wheels are in a line with each other and do not reach to the shaft *e* of the driving-wheel. Their inner ends are supported by the ends of a stirrup, *f*, which embraces the shaft of driving-wheel without touching it. Each balance-wheel is furnished with a beveled pinion-wheel, *b* and *b'*, which is actuated by the driving-wheel *a*, which is beveled also. Being driven by opposite sides of the driving-wheel, they will consequently oscillate in opposite directions, but otherwise with the same motion. The shaft of the driving-wheel *e* carries a round disk, and upon that disk an arm, *d*, Fig. 4, which is thus raised above the bearing of the shaft and oscillates far from it. The other end of this arm carries another disk corresponding in shape and size to the first named and the face of which is represented in Fig. 3. Upon this latter disk is a tooth, *c*, the form and position of which are seen in Figs. 1, 3, and 4. It is curved as if made on a cylinder and engages into the teeth of the escape-wheel R, Figs. 1, 2, and 5, and thereby gives motion to the driving-wheel, and thence to the two balance-wheels.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with a cylinder-watch, of the mechanism above described for operating two balance-wheels, which shall oscillate alike, but in opposite directions.

C. O. GUERNSEY.

Witnesses:

B. S. FIELD,
E. E. FIELD.