

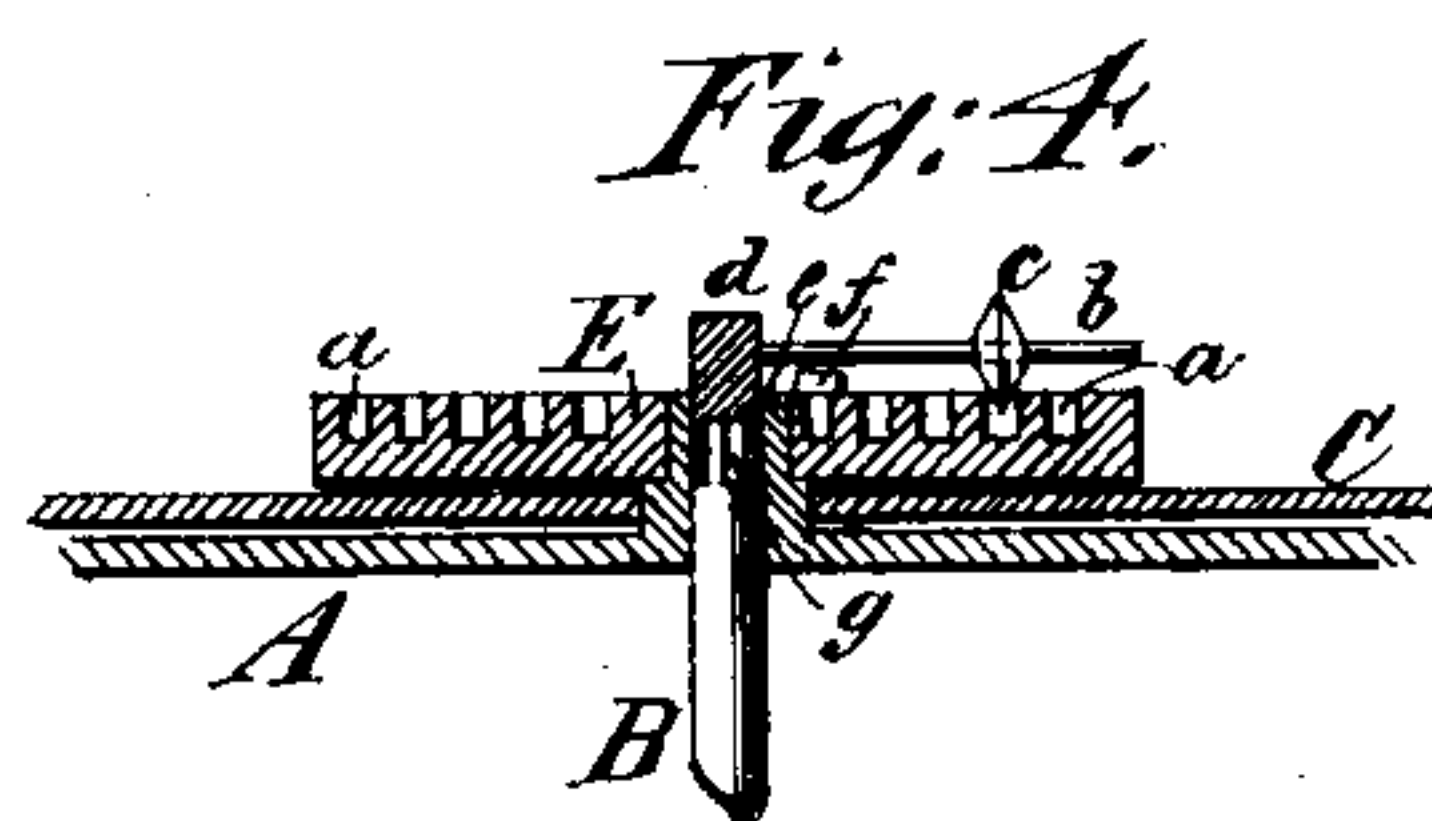
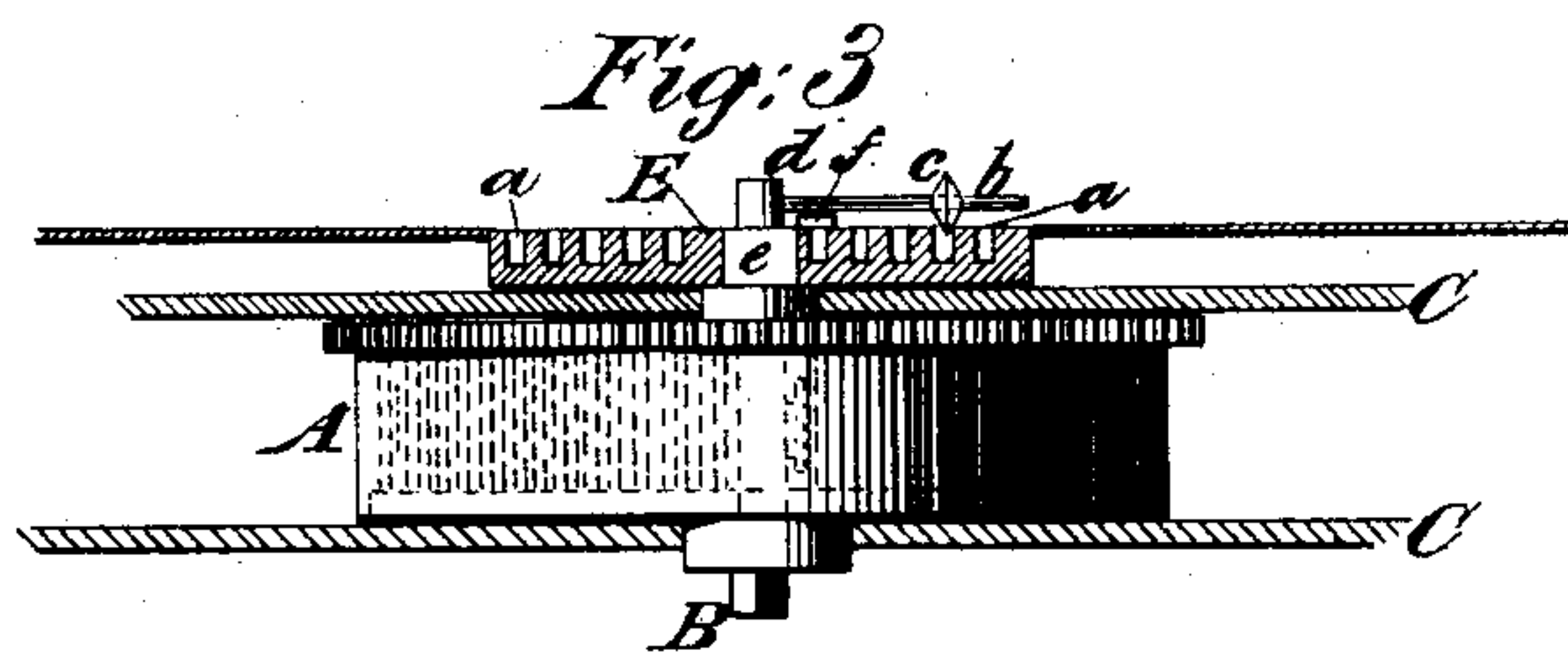
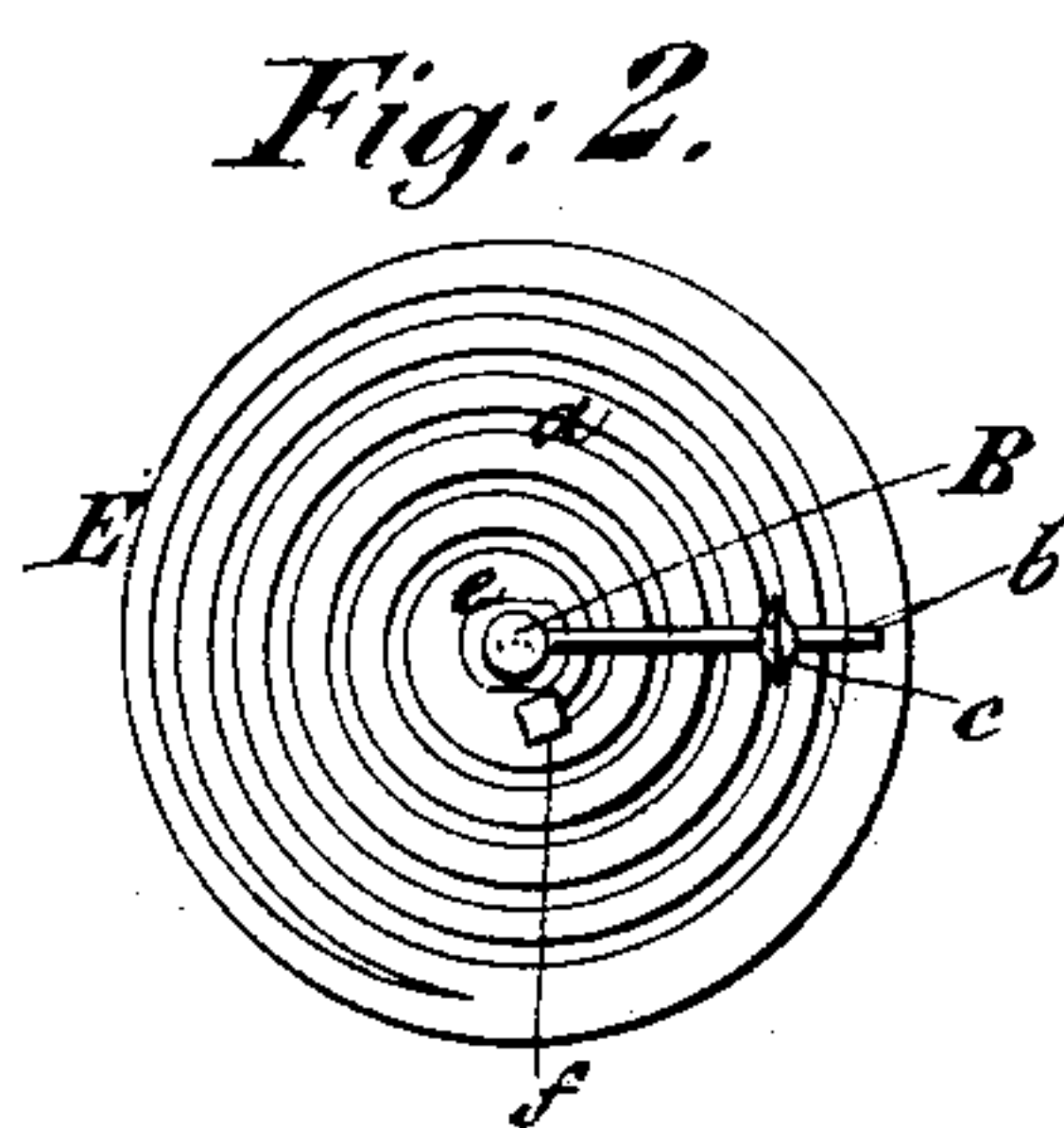
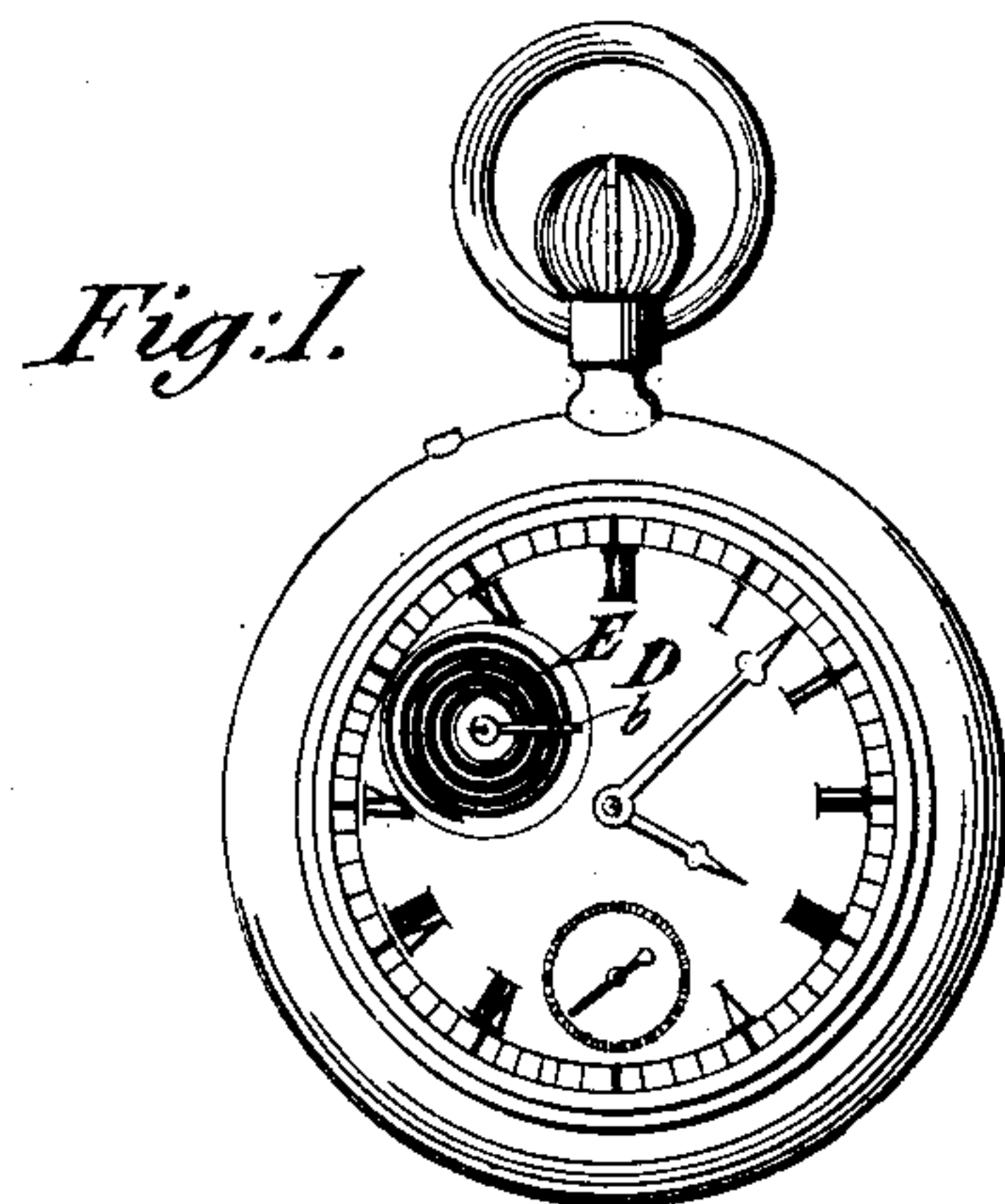
(No Model.)

G. MARZARI.

WINDING INDICATOR FOR TIME PIECES.

No. 331,985.

Patented Dec. 8, 1885.



Witnesses.
Emil Hector
O. Sundgren

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UNITED STATES PATENT OFFICE.

GIUSEPPE MARZARI, OF NEW YORK, N. Y.

WINDING-INDICATOR FOR TIME-PIECES.

SPECIFICATION forming part of Letters Patent No. 331,985, dated December 8, 1885.

Application filed September 11, 1885. Serial No. 176,836. (No model.)

To all whom it may concern:

Be it known that I, GIUSEPPE MARZARI, a subject of the King of Italy, residing in the city and county of New York, and State of New York, have invented a new and useful Improvement in Winding-Indicators for Watches and other Time-Keepers, of which the following is a specification, reference being had to the accompanying drawings.

The object of this invention is to indicate the degree to which the mainspring of a watch or other time-keeper is wound or unwound, and so enable the person using the watch or time-keeper to avoid overwinding, and to know when it requires to be wound or how nearly it has run down.

The invention is applicable to stem-winding and key-winding watches.

The improvement consists in the combination, with the mainspring-barrel and the main winding-arbor of the watch or time-keeper, of a disk or plate containing a convolute groove or way firmly secured to the barrel in such manner as to be visible on the dial or other part of the case of the watch or time-keeper, and an arm attached to the main winding-arbor, and having fitted to slide upon it a roller or runner which enters or fits the said convolute groove or way in such manner that by the winding and unwinding of the mainspring the said roller or runner will be caused to follow the convolutions of the said groove or way, and to move toward and from the axis of the barrel and arbor, and the position of the said roller or runner will indicate the condition of the mainspring. The said groove may also have a stop at its inner end to arrest the roller or runner, for preventing the overwinding of the watch or time-keeper.

Figure 1 in the accompanying drawings is a face view of a stem-winding watch having my invention applied. Fig. 2 is a face view of the indicator on an enlarged scale. Fig. 3 exhibits a side view of the barrel and winding-arbor, and the arm of the indicator and sections of the convolute disk, and portions of the plates and dial of the watch on a scale corresponding with Fig. 2. Fig. 4 is a detail view illustrating the application of the invention to the winding-arbor of an old watch.

Similar letters of reference designate corresponding parts in the several figures.

A is the mainspring-barrel, and B is the winding-arbor.

C C are the plates of the watch.

D is the dial.

E is the disk, having in it the convolute groove *a*, having a number of volutes equal to the number of revolutions which the arbor B makes to wind up the watch. This disk is represented as sunk in an opening in the dial, so that its face is flush with the dial. It is secured to the mainspring-barrel by having in it a square or flat-sided opening fitted to a hub, *e*, on the barrel, and consequently it turns with the barrel.

b is the arm carried by the arbor B, and having fitted to turn freely and slide longitudinally upon it the roller *c*, which runs in the convolute groove *a*. This arm is radial to the arbor, which is prolonged at *d* (see Figs. 3 and 4) beyond the face of the dial to receive the said arm. This prolongation in a new watch may be integral with the arbor itself; but in applying my invention to an old watch said prolongation may consist of an additional piece carried by the arbor, by being fitted thereto with a square tenon and mortise, as shown at *g* in Fig. 4, so as to be compelled to turn therewith. When the mainspring of the watch is unwound, or the watch has run down, the roller *c* is at or near the outer end of the convolute groove *a*. As the watch is wound up, the turning of the winding-arbor causes the roller to run along the groove and along the arm *b* toward the center of the disk, and as the watch runs down the turning of the disk E with the barrel causes the roller to move outward in the groove and upon the arm until it arrives at or near the outer end of the groove. The position of the roller in the groove, therefore, indicates how far the spring is wound or unwound. At the inner end of the groove *a* there is provided in the disk E a post or stud, *f*, to constitute a stop, against which the roller arrives when the watch is wound up, and by which the further revolution of the winding-arbor is prevented, for the purpose of preventing the overwinding of the watch. The inner end of the groove itself may, however, constitute a sufficient stop for this purpose.

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

1. The combination, with the mainspring-

barrel and winding-arbor, of a disk provided with a convolute groove or way attached to the one, and an arm attached to the other and fitted with a roller or runner working in or on
5 said groove or way, substantially as and for the purpose herein described.

2. The combination, with the disk provided with a convolute way, and the arm fitted with a roller or runner working in or on said groove
10 or way, the said arm and way being attached,

the one to the mainspring-barrel and the other to the winding-arbor, of a stop for the roller or runner at the inner end of the way, substantially as and for the purpose herein set forth.

GIUSEPPE MARZARI.

Witnesses:

FREDK. HAYNES,
HENRY McBRIDE.