

H. A. LUGRIN.
Stop Watch.

No. 229.723.

Patented July 6, 1880.

Fig: 1.

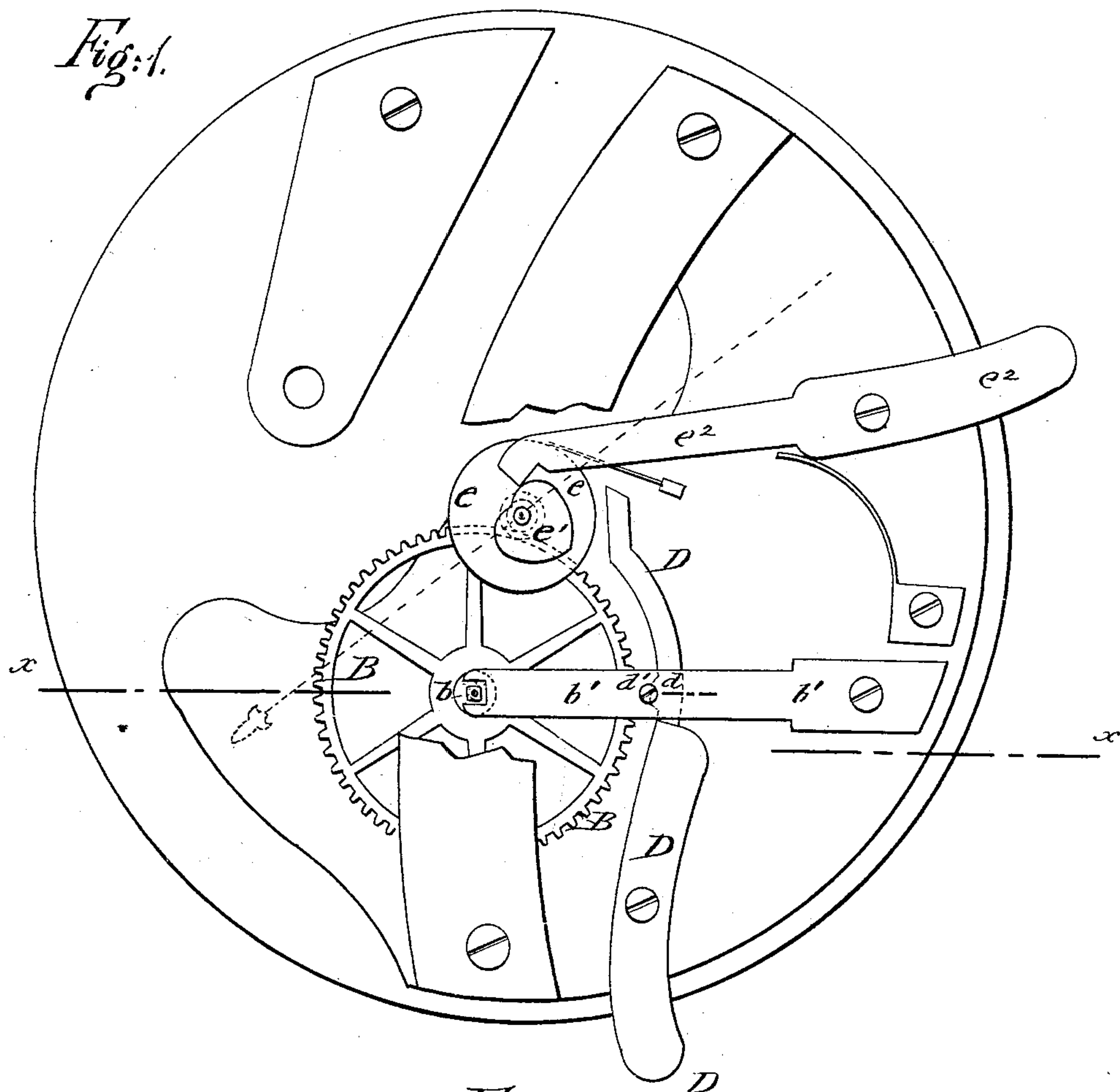
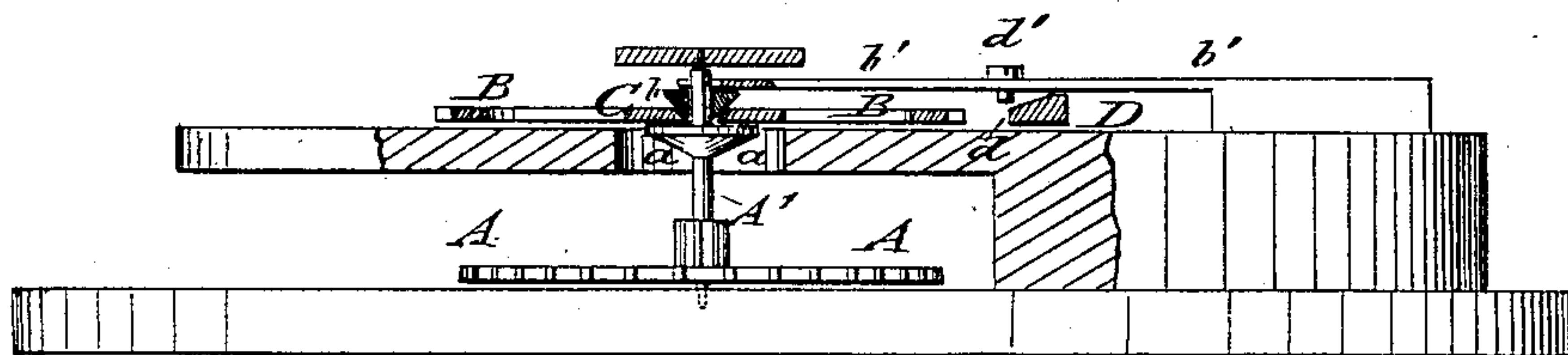


Fig: 2.



WITNESSES:

Carl Karp
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INVENTOR

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UNITED STATES PATENT OFFICE.

HENRY A. LUGRIN, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND
PROSPER NORDMANN, OF SAME PLACE.

STOP-WATCH.

SPECIFICATION forming part of Letters Patent No. 229,723, dated July 6, 1880.

Application filed August 23, 1879.

To all whom it may concern:

Be it known that I, HENRY A. LUGRIN, of the city, county, and State of New York, have invented certain new and useful Improvements in Stop-Watches, of which the following is a specification.

This invention relates to a simple and effective construction of stop-watches used for timing purposes; and it consists of a transmitting gear-wheel, that is placed loosely on the arbor of the third wheel of the watch-movement, and either locked thereto or released therefrom by a clutch device consisting of a conical sleeve and of a spring-arm pressing thereon, the spring-arm being applied by a suitable lever, so as to cause the transmitting gear-wheel either to revolve and impart motion to the timing-hand or to remain loosely on the shaft. The spring-arm is raised or lowered by a beveled portion of the lever engaging a fixed stud of the spring-arm.

In the accompanying drawings, Figure 1 represents a top view of my improved stop-watch, drawn on an enlarged scale, with portion of the bridge broken away to show parts below, and Fig. 2 is a vertical transverse section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the third wheel of a watch-movement, from which the timing mechanism receives its motion whenever it is thrown into gear therewith. This is accomplished by means of a transmitting gear-wheel, B, which is placed loosely on the arbor A' of the third wheel, and by a clutch device, C, which consists of a loosely-sliding conical sleeve, *b*, and of a spring-arm, *b'*.

The gear-wheel B rests on a disk, *a*, of the arbor A', and is tightly locked to the disk and arbor by the joint action of the sleeve and spring-arm, the wheel B being beveled at the inner edge to correspond to the conical form of the sleeve. The upper part of the arbor A' above the disk is made square, as well as the hole of the conical sleeve, so that the latter always turns with the arbor.

The spring-arm *b* is recessed or forked at its free spring end, so as to extend beyond the

square portion of the arbor and bear on the conical sleeve at both sides of the same. The opposite end of the spring-arm is permanently attached to the supporting bridge-plate of the movement. A fulcrumed lever, D, engages, by a beveled projection, *d*, a fixed screw-stud, *d'*, of the spring-arm, and bears simultaneously with its end portion on a friction-disk, *e*, on the arbor of the timing-hand.

The timing-hand is returned, by the well-known heart-cam *e'* and shifting-lever *e''*, to its starting-point on the dial. When the timing-hand is at rest the lever engages, by its beveled projection, the fixed stud, and holds thereby the spring-arm in raised position, clear of the clutch-sleeve *b*, so that the transmitting-wheel B rests loosely on the disk *a* without following the motion of the arbor. The inner end of the lever E presses simultaneously on the friction-disk of the shifting-cam, and retains thereby the timing-hand firmly in its position at the starting-point. Whenever it is desired to throw the timing device into operation the lever is carried back by pressing on its outer end, so that it clears the stud of the spring-arm and the friction-disk at the same time. The free end of the spring-arm bears then on the conical sleeve, which latter locks the transmitting-wheel to the arbor of the third wheel. The timing device is thereby thrown into gear with the watch-movement and set in motion by the intermeshing of the transmitting gear-wheel with a pinion on the arbor of the timing-hand. The hand may be instantly stopped by carrying the lever D forward again, by which motion the spring-arm is raised and the clutch-sleeve released from the transmitting-wheel. The timing-hand is at the same time arrested by the pressure of the lever on the friction-disk. The hand is finally returned to the starting-point by the shifting lever and cam. The clutch mechanism can also be arranged to be worked by the ordinary push device.

Thus a very simple and reliable timing attachment for watches is obtained, which is out of gear with the watch-movement when not in use, but which may be instantly thrown into use whenever it is desired to take the time at races and for other purposes.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In stop-watches, the combination of arbor
5 A' of the third wheel, said arbor having a fixed disk, *a*, and square portion above the disk, and of the transmitting-wheel B, with a conical clutch-sleeve, *b*, having a square hole for the arbor, and with a binding spring-arm, *b'*, sub-
10 stantially as and for the purpose described.

2. In stop-watches, the combination of the arbor A' of the third wheel, having a disk, *a*, transmitting-wheel B, conical clutch-sleeve *b*, and spring-arm *b'*, having fixed screw-stud *d'*,
15 with a lever, D, having beveled projecting portion *d*, all as described.

3. In stop-watches, the combination of the transmitting mechanism A B, clutch device C, and friction-disk *e* of the arbor of the timing-
hand with a lever, D, that is adapted to ap- 20
ply or release the clutch device from the transmitting-wheel simultaneously with binding on or releasing the friction-disk of the time-hand, substantially as set forth.

In testimony that I claim the foregoing as 25
my invention I have signed my name, in presence of two witnesses, this 22d day of August, 1879.

HENRY A. LUGRIN.

Witnesses:

PAUL GOEPEL,
CARL KARP.