2 Sheets--Sheet 1.

M. E. COLE.
Watch.

No. 165,793. Patented July 20, 1875.

FIG. 1.

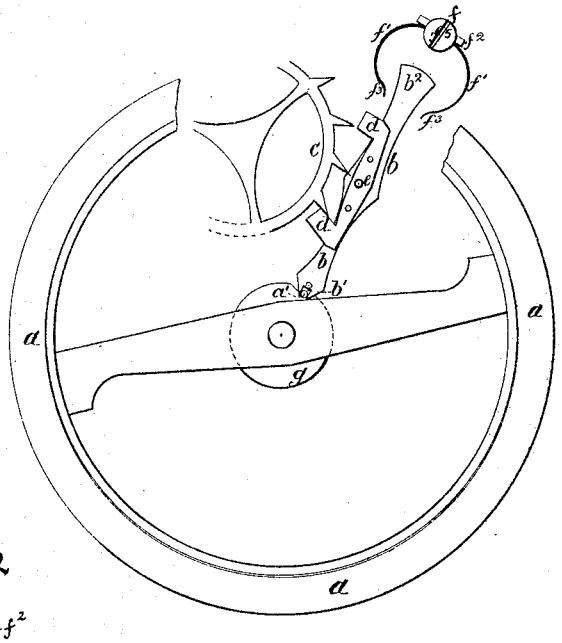


FIG. 2.

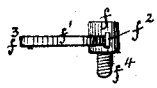


FIG. 3.

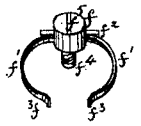
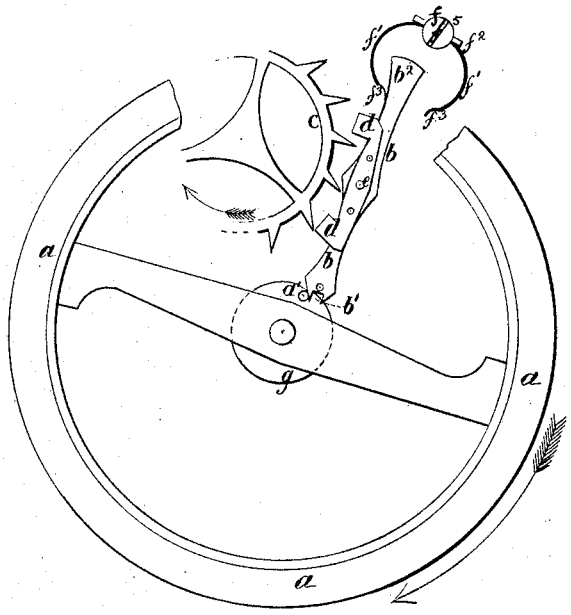


FIG. 4.



WITNESSES

Colborne Brookes

L. S. Grant.

INVENTOR

Mortimer E. Cole

2 Sheets--Sheet 2.

M. E. COLE.

Watch.

No. 165,793. FIG. 5. Patented July 20, 1875.

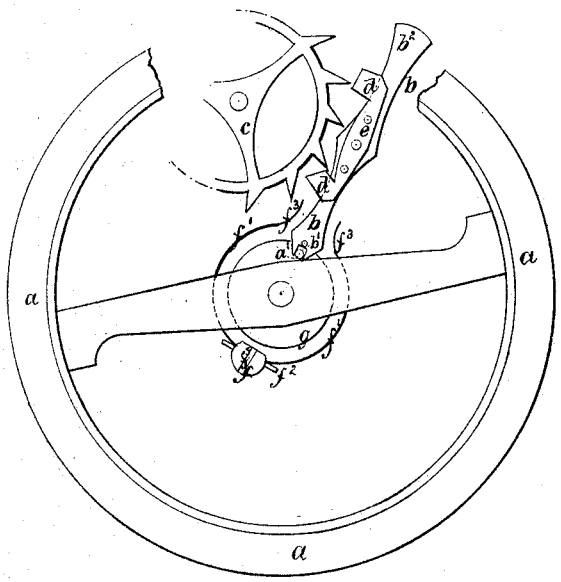
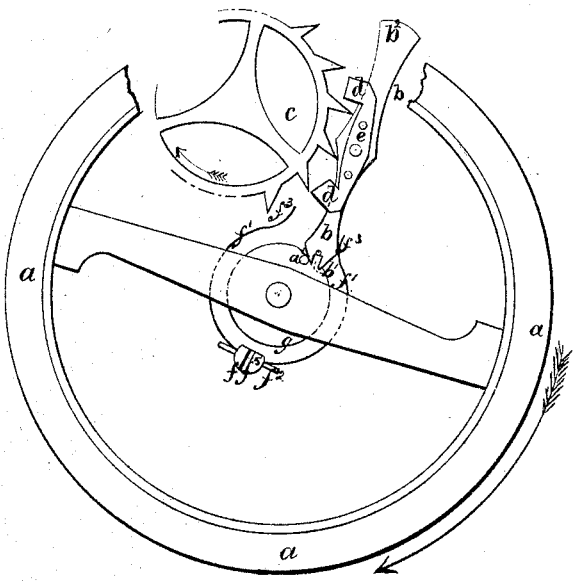


FIG. 6.



WITNESSES

Osborne Brookes

G. G. Grant.

INVENTOR

Mortimer E. Cole

UNITED STATES PATENT OFFICE.

MORTIMER G. COLE, OF BELVEDERE HOUSE, BEXLEY HEATH, ASSIGNOR TO JAMES HODDELL & CO., OF COVENTRY, ENGLAND.

IMPROVEMENT IN WATCHES.

Specification forming part of Letters Patent No. **165,793**, dated July 20, 1875; application filed October 25, 1871.

To all whom it may concern:

Be it known that I, MORTIMER GEORGE COLE, of Bexley Heath, in the county of Kent, England, have invented certain Improvements in Watches and Time-Keepers, of which the following is a specification:

My invention relates to an improved banking device, applicable to that description of watches and time-keepers in which detached lever-escapements are employed. In this description of watches and time-keepers it frequently happens that when a greater impulse than usual is given to the balance, by reason of a sudden shake or other cause, the ruby-pin, after the lever has given its impulse, is carried so far around that it strikes against the outside of the fork in the same direction; and as the lever, when in that position, will be in contact with one of the banking-pins, and, consequently, unable to yield when struck by the ruby-pin, the effect is that frequently either the ruby-pin is damaged, or the balance or staff pivots are either broken or bent. The object of my present invention is to produce a spring banking device that can readily be applied to watches and other time-keepers now in use which will obviate these evils.

In carrying out my invention I employ a stud or pillar, one end of which is so formed as to be capable of being received and held in the pillar-plate or other suitable portion of a watch or time-piece, while the opposite end is so constructed as to receive and support, with capability of adjustment, a tempered spring, bent around into the form of a circle, or nearly so, in order that when my device is placed in proper position in a watch or time-keeper, the ends of the spring shall take the place of the ordinary banking-pins, against which, according to the usual arrangements of mechanism of this character, the lever acts. The spring is formed sufficiently strong to serve as a sound banking, but at the same time sufficiently elastic to allow the ruby-pin to pass the horn of the lever when any extra motion is given to the balance. The ends of the spring are curved, so as to offer but little frictional surface to the lever. In some cases the spring may be placed so as to encircle the roller, and to act against the horn of the lever.

But, that my invention may be fully understood, I will, by aid of the accompanying drawings, proceed to describe the same more in detail.

Figure 1 represents a plan of so much of a watch with my improved banking device applied thereto as will enable persons acquainted with the manufacture of watches and similar time-keepers to understand the same. Fig. 2 represents a side view, and Fig. 3 a perspective view, of my improved banking device separately.

a is the balance, and a^1 the ruby-pin, which is arranged to work in the notch or fork b^1 of the lever *b*, as is the usual practice. *c* is the escape-wheel; *d*, the pallets, which are carried by the pallet-staff *e*, and are affixed to the lever *b*. *f* is the stud or pillar of my improved banking device, the upper end of which is provided with a slot or recess, f^5, for the reception of the end of a screw-driver, while the opposite end is provided with a screw-shank, f^4, capable of being received and held in the pillar-plate opposite the end or tail b^2 of the lever *b*, in position to support the resilient banking-spring f^1 carried thereby (which is bent round into the form of a circle, or nearly so) in position, so that the curved ends f^3 thereof, when the shank f^4 of the pillar *f* has been screwed firmly into the pillar-plate, may come into position to take the place of the ordinary banking-pins. The resilient banking-spring f^1 is formed sufficiently strong to act as a sound banking, but at the same time sufficiently elastic to allow of the ruby-pin a' passing the horn of the lever *b* when any undue motion is given to the balance-wheel *a*. The spring f^1 is retained in position in the pillar *f* by means of a wedge-shaped pin, f^2, a slot being formed through the pillar for the reception of the spring f^1 and the wedge f^2. This slot also enables one of the bent ends f^3 of the spring to pass freely through the pillar *f* when putting the spring f^1 in position.

Fig. 4 represents the various parts in the position they will assume when an extra impulse has been given to the balance *a*, and the ruby-pin a' has passed the horn of the lever *b*, and the tail b^2 of the lever *b* is resting against one of the curved ends f^3 of the spring f^1.

Figs. 5 and 6 show plans of portions of a watch or time-piece with my device applied to the opposite end of a lever, *b*, and encircling the roller *g*. In each of the views the same letters of reference are employed to indicate corresponding parts to those represented in Figs. 1 and 4. In this modification the resilient banking-spring f^1 is placed in position so that it shall encircle the roller *g*, and act against the horn b^1 of the lever *b*.

It will be evident to those acquainted with the manufacture of watches that my improved device may be readily applied to most watches and time-keepers of the character described which are now in use by simply removing the banking-pins and boring a hole in the pillar-plate of the watch or time-keeper, and inserting the shank f^4 of the pillar *f* therein, and screwing the same firmly down.

I am aware that various attempts have been made from time to time to employ springs in place of the ordinary banking-pins by Thomas Robjohn, of New York, as well as by James F. Cole and others, in England, as well as myself, with more or less success. I therefore do not lay claim, broadly, to the application of spring-bankings to watches and other time-keepers; but

What I do claim, and desire to secure by Letters Patent, is—

A banking device consisting of a circular, or nearly circular, spring, f^1, formed with bent ends f^3 and a stud or pillar, *f*, and the shank f^4, arranged and constructed substantially as shown and described.

MORTIMER G. COLE.

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