

(No Model.)

C. MORLET.

BALANCE STAFF FOR WATCHES.

No. 387,247.

Patented Aug. 7, 1888.

Fig. 1

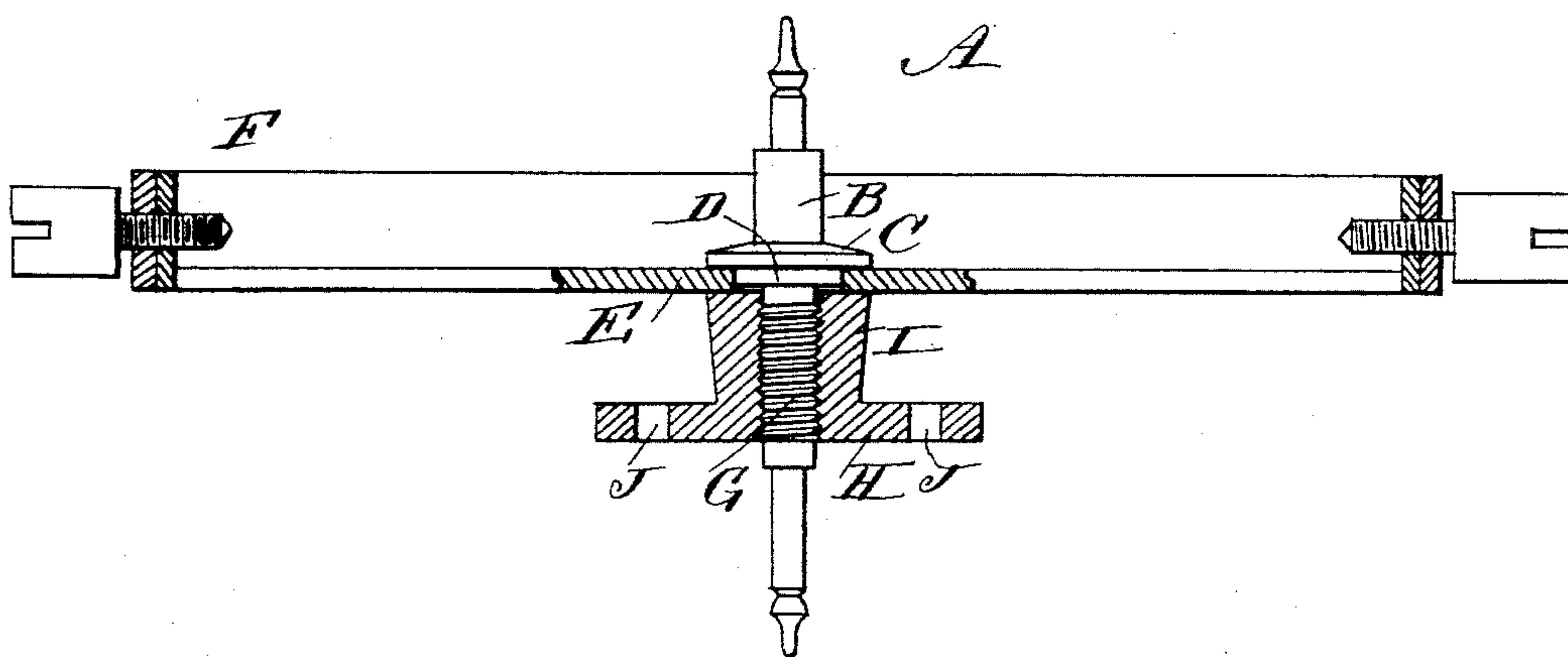
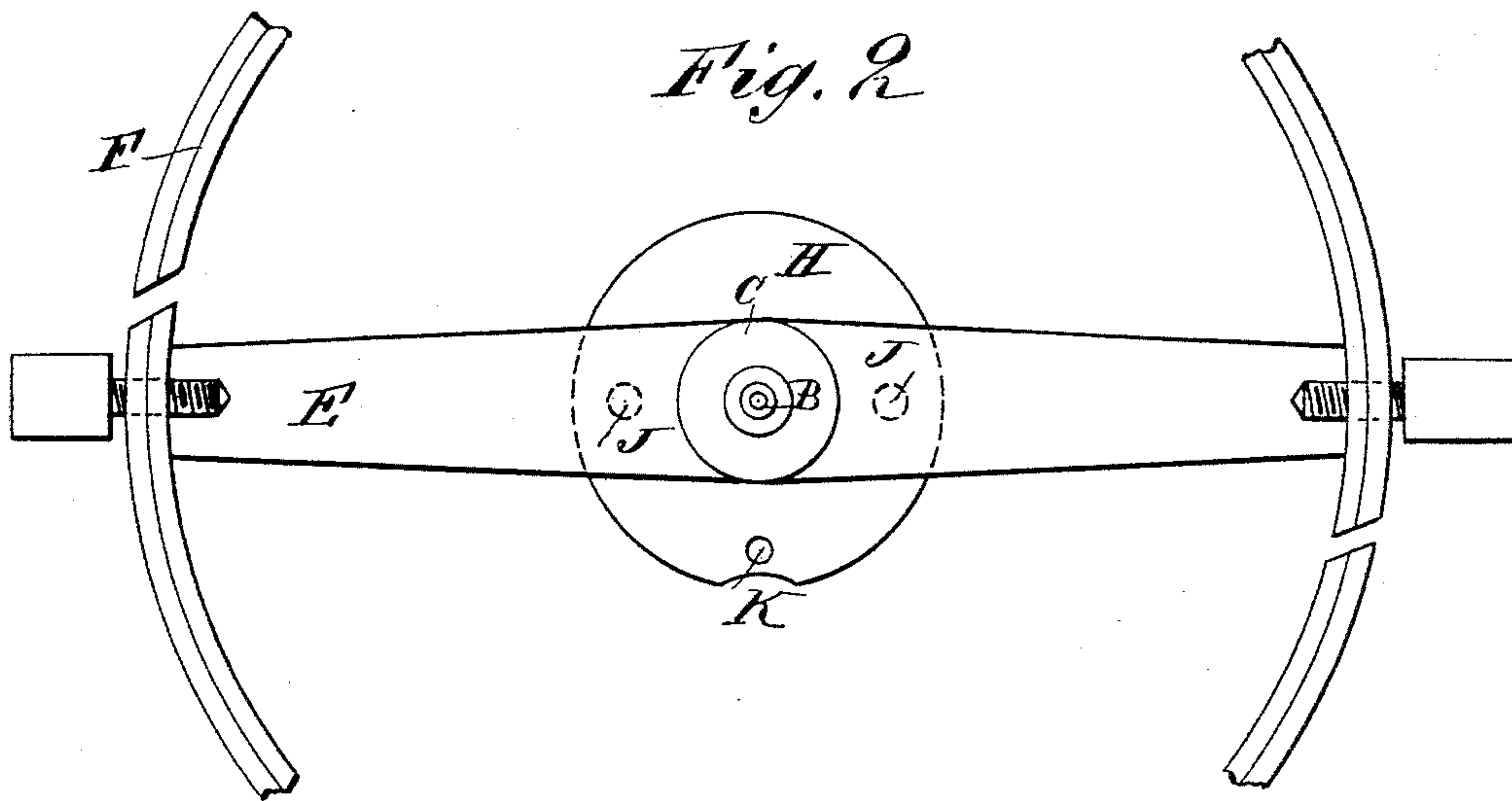


Fig. 2



WITNESSES:

C. Neveu
C. Sedgwick

INVENTOR:

C. Morlet

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES MORLET, OF HOBOKEN, NEW JERSEY.

BALANCE-STAFF FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 387,247, dated August 7, 1888.

Application filed October 29, 1887. Serial No. 253,723. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MORLET, a citizen of Switzerland, at present residing in Hoboken, in the county of Hudson and State of New Jersey, have invented a new and Improved Spindle for Balance-Wheels, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved spindle for carrying the balance-wheel, which is simple and durable in construction and facilitates an accurate and quick attachment or removal of the balance-wheel from the spindle whenever desired.

The invention consists of a spindle provided with a shoulder or collar and having a screw-thread, and of a roller screwing on the threaded part of the spindle and against the hub or cross bar of the balance-wheel.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is an enlarged sectional side view of my improvement, and Fig. 2 is a plan view of the same.

My improved spindle A is provided on its upper and lower ends with the usual pivots fitting into suitable bearings in the watch-movement. On the upper part of the spindle A is formed a shoulder, B, on which is held a balance-spring in the usual manner. Next to the shoulder B is formed a shoulder or collar, C, below which is an offset, D, fitting into the central aperture of the hub or cross-bar E of the balance-wheel F, of any approved construction. The part G below the offset D of the spindle A is screw-threaded, and on it screws the roller H, provided with the upwardly-extending hub I, which is also screw-threaded and adapted to abut at its upper end against the under side of the hub or cross-bar E of the balance-wheel F.

The roller H is preferably provided with apertures J, placed diametrically opposite each other and adapted to receive the points of a key for conveniently turning the said roller H. On the latter is also secured the usual post, K,

connected with the escapement mechanism in the usual manner.

The operation is as follows: In order to place the balance-wheel F on the spindle A, I remove the roller H, and then insert the lower part of the spindle A through the central aperture in the hub of the cross-bar E of the balance-wheel F, so that the top of the hub or cross-bar E rests on the under side of the shoulder or collar C, and then I screw the roller H, with its hub part I upward, on the part G of the spindle A, so that the upper end of the hub I presses against the under side of the hub or cross-bar E. The roller H is screwed up firmly against said hub or cross-bar E, so that the latter is securely clamped between the collar C and the hub I on the offset D. The screwing of the roller H is generally accomplished by inserting the points of a key in the apertures J, as above stated. It will be seen that in this manner I am enabled to attach the balance-wheel F very accurately and quickly on the spindle A, and in case of breakage of any of the parts I am enabled to remove the balance-wheel in a very short time by unscrewing the roller H from the spindle A.

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

1. The combination, with a spindle provided with a shoulder and having a part screw-threaded, of a roller screwing on the threaded part of said spindle and against the hub or cross-bar of the balance-wheel, substantially as shown and described.

2. A spindle for balance-wheels provided with a shoulder and a screw-threaded part on which screws a roller, substantially as shown and described.

3. The combination, with a balance-wheel and a roller, of a spindle provided with a fixed shoulder and having part screw-threaded, on which screw-threaded part said roller screws against the hub or cross-bar of the said balance-wheel held between the said shoulder on the spindle and the roller, substantially as shown and described.

CHARLES MORLET.

Witnesses:

THEO. G. HOSTER,
C. NEVEUX.