W. C. MAYNARD.

Attachment of Mainspring to Arbor.

No. 160,109. Patented Feb. 23, 1875.

Fig. 1.

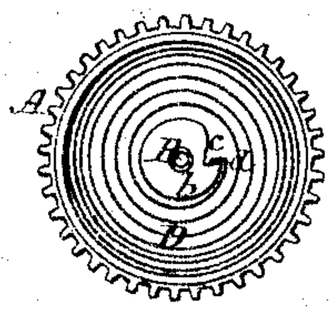
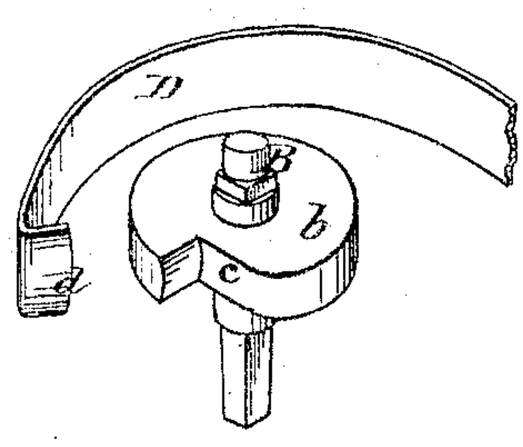


Fig. 2.



Witnesses:
Philip F. Lapner
A. B. Cauldwell

Inventor:
William C. Maynard
By Munn & Co
Attorney

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

WILLIAM C. MAYNARD, OF BINGHAMTON, NEW YORK.

IMPROVEMENT IN THE ATTACHMENT OF MAINSPRINGS TO ARBORS.

Specification forming part of Letters Patent No. **160,109,** dated February 23, 1875; application filed January 15, 1875.

To all whom it may concern:

Be it known that I, WILLIAM C. MAYNARD, of Binghamton, in the county of Broome and State of New York, have invented a certain new and useful Improvement in Watches; and I do hereby declare the following specification, taken in connection with the drawings furnished and forming part of the same, to be a clear and true description thereof.

My invention relates to a certain improvement in the method of attaching the mainspring of a watch to its arbor; and it consists in providing the arbor with a hub or collar having a recess or notch with which the inner end of the mainspring, bent so as to form a hook, is arranged to engage, and thereby effect a connection between the arbor and the spring, as hereafter described.

Referring to the drawings, Figure 1 represents a top view of a watch-barrel containing my improvement. Fig. 2 represents an enlarged view of the arbor and the inner end of the mainspring.

Heretofore in the construction of watches, the mainsprings have, as far as I am aware, in all cases been connected to the arbor within the barrel by means of an eye at the inner end of the spring which engages with a pin projecting from the side of the arbor. The objection to this mode of connecting the mainspring to the arbor is apparent, because of the uneven manner with which the spring is wound upon the arbor, by reason of the interference of the projecting pin with the coils of the spring. It has been proposed to remedy this objection by providing the arbor-collar with what has been termed an eccentric notch, and fastening the end of the spring within such recess by means of a pin, substantially as formerly employed.

In all cases when the pin is employed, the spring must necessarily be provided with an eye for engaging therewith. To form the eye a portion of the spring is cut away, thereby weakening it at that point. Moreover, this construction involves the labor of drilling the arbor to receive the pin, the making of the pin and fitting it to the drilled arbor, and the making of the eye in the spring.

The object of my invention is to effect a connection of the spring with the arbor without the employment of an eye in the spring, or a pin in the arbor, thereby materially decreasing the expense heretofore incident to the manufacture of that portion of the watch to which my invention relates.

In the drawings, A denotes a watch-barrel of the ordinary construction. The arbor B has a hub or collar, *b*, which may either be formed as a part of the arbor, or separately and attached thereto. The hub is provided with a recess, as at *c*, formed by cutting away a portion of the periphery of the hub. One side of this recess constitutes a holding-shoulder with which the spring engages. In order that this shoulder may firmly engage with the spring, it is slightly convex from the axial line of the arbor, and it also recedes slightly from its junction with the periphery, giving it in a measure the character of a hook. D denotes the mainspring. It is coiled within the watch-barrel around the arbor B, in the ordinary manner. The inner end of this spring is provided with a hook, *d*. This hook is formed by bending the end of the spring metal into the desired shape, and, in order to maintain a firm connection with the recess or notch *c* of the arbor, the said hook is bent laterally, giving it a concave holding-surface which corresponds with the convex surface of said notch.

In practice, when the mainspring is coiled within the barrel around the arbor B, the hooked end *d* of the spring is so placed within the notch or recess *c*, that it will rest against and be securely held by the convex surface of the notch. A firm connection is thereby secured between the arbor and the spring, which is retained at all times when they are held by the barrel in their proper positions.

It will be observed that by reason of the turning of the hooked end of spring into the recess of the arbor, as shown and described, there is nothing to prevent the even and regular winding of the spring on the arbor.

The convexity of the shoulder and concavity of the hook at the end of the spring may be dispensed with, although I prefer them as described. When confined within the barrel, it is difficult for the spring and arbor to lose their connection with each other, and should the spring chance to slip the arbor on being turned, will again engage with it. As soon

as one or two turns of the arbor have been made, the encircling coils of spring serve to hold the spring-hook in its proper position.

By avoiding the use of the pin and eye, I obviate, in a great measure, the liability of injuring other parts of the watch should a spring break, because the spring has no hold upon the arbor, except at the shoulder, and it cannot therefore give to the arbor any reflex or backward movement.

Having thus described my invention, I claim as new—

In combination, a watch-barrel arbor provided with a notch or recess which presents a holding-shoulder, and a mainspring having a hook upon its inner end arranged to engage with said holding-shoulder, substantially as and for the purpose described.

WILLIAM C. MAYNARD.

Witnesses:
C. L. BOON,
H. J. GAYLORD.