W. N. WILCOX.

Retaining-Springs for Watch-Barrels.

No. 218,206. Patented Aug. 5, 1879.

Fig. 1.

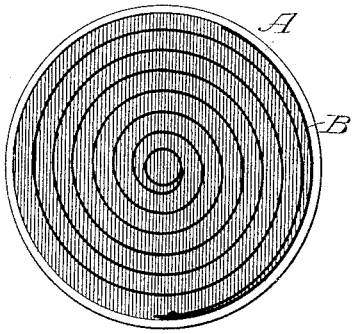


Fig. 2.

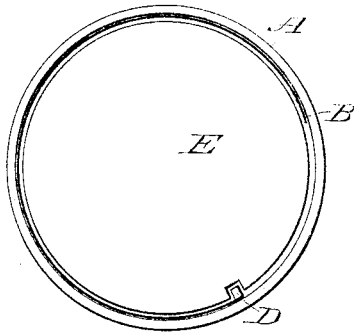


Fig. 3.

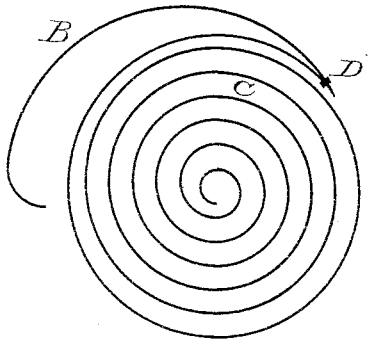
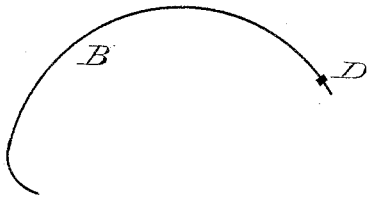


Fig. 4.



Witnesses:

D K Parker

Henry La Fourette

Inventor:

Warren N Wilcox

UNITED STATES PATENT OFFICE.

WARREN N. WILCOX, OF SHELLSBURG, IOWA.

IMPROVEMENT IN RETAINING-SPRINGS FOR WATCH-BARRELS.

Specification forming part of Letters Patent No. **218,206**, dated August 5, 1879; application filed March 13, 1879.

To all whom it may concern:

Be it known that I, WARREN N. WILCOX, of Shellsburg, in the county of Benton and State of Iowa, have invented a new and useful Improvement in Retaining-Springs, of which the following is a specification.

My invention is an improvement in mainsprings for watches.

It consists in the provision of an auxiliary spring attached to the outer end of the mainspring of a watch, which extends backward in a direction opposite to that of the spring's coil, which, when the mainspring is in position in the barrel, remains detached from said barrel, but, being distorted by the withdrawal of the said mainspring in winding, bears against the concave surface of said barrel, to form a hold to prevent the unwinding of said mainspring from its outer end.

In my drawings, Figure 1 is a plan view, showing the application of main and auxiliary or retaining springs to barrel. Fig. 2 shows the application of my device as a substitute for the ordinary ratchet and pawl. Fig. 3 shows the main and retaining springs united, but detached from the barrel. Fig. 4 is a view of the retaining-spring alone.

Similar reference-letters indicate like parts in all of the figures.

Referring to drawings, A is the spring-barrel. B′ is the mainspring, of the usual form, having attached to it the auxiliary or retaining spring B by a hook or rivet, D.

The spring B is preferably made very thin at its free end, while at its attached end it may be equal in thickness to the mainspring. The length of said retaining-spring may be regulated by the diameter of the barrel and the stiffness or expansive force of the mainspring.

Heretofore it has been customary to secure the outer end of the mainspring of a watch to the wheel attached to the drum by a hook which engaged an eye formed in said end; or the said end was otherwise cut away or turned back to form a hook, and secured by a rivet, over which said hook was placed.

There are serious objections to these methods of fastening, for the reasons that the mainspring frequently breaks on account of its too rigid hold against the strain in winding when tight, and its liability to slip from its place to produce too sudden a recoil and shock to the works of the watch. In case of breakage of either the spring or the works there is expense attending repairs and replacement of the mainspring.

In the use of my retaining-spring there is absolute safety to the watch and spring in winding.

In placing my spring in the barrel of a watch, after attaching the inner end of the mainspring to the arbor in the usual way, I simply drop it, with the retaining-spring, into the barrel, when the end of the retaining-spring will find its place against the concave surface of the said drum.

When the arbor is turned by the key to wind the watch, the coils of the mainspring begin to approach the axis, and its outer end being attached to the retaining-spring at D, this end of the retaining-spring is drawn centerward, leaving its outer end to bear against the curved surface of the barrel, where it is retained by friction, to hold the mainspring against a recoil until released by a reverse movement of the arbor.

In applying my retaining-spring to the arbor to take the place of the ratchet and pawl, I fix a disk to the arbor and place said disk within a ring, to form a groove for the said retaining-spring, which I attach to a notch in said disk.

As the arbor is moved by the key to wind the watch it carries the retaining-spring, which slips around easily in the groove; but as soon as the key is taken from its place the free end bites against the inner concave surface of the said ring to hold the arbor against recoil.

I am aware of patent to Rice, No. 121,004, in which an auxiliary spring is used fixed permanently to the drum, and to such I make no claim.

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

1. The retaining-spring B, fixed to the outer end of a main watch-spring at one end, while its free end is made to engage by friction the inner surface of the barrel, as and for the purpose set forth.

2. The mainspring of a watch, fixed to the arbor in the usual way, in combination with the retaining-spring B, adapted to hold by friction against the inner concave surface of the barrel A, as and for the purpose set forth.

WARREN N. WILCOX.

Witnesses:

D. K. PARKER,

HENRY LA TOURETTE.