(No Model.)

N. J. FELIX.

WATCH CASE SPRING.

No. 455,437. Patented July 7, 1891.

Fig. 1.

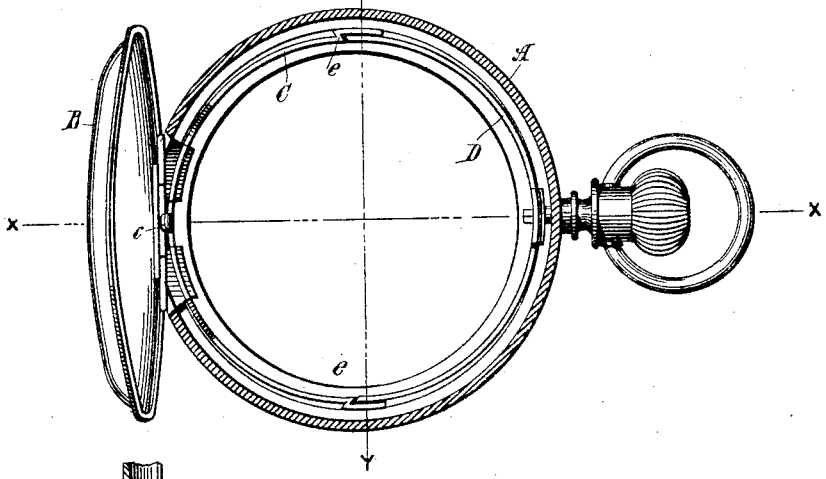


Fig. 2.

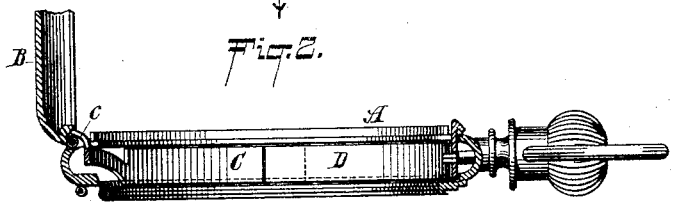


Fig. 3.

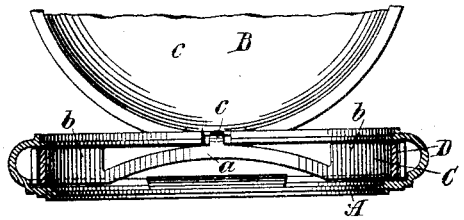


Fig. 4.

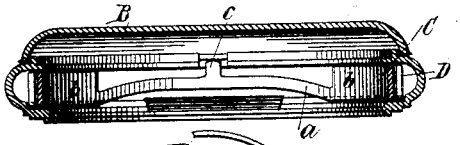
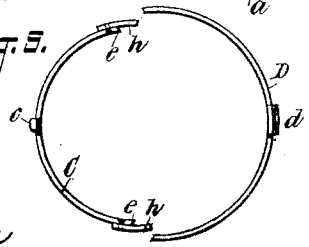


Fig. 5.



WITNESSES:

William Goebel.

Thomas W. Porter

INVENTOR

Numa J. Felix

BY George Cook

ATTORNEY.

UNITED STATES PATENT OFFICE.

NUMA J. FELIX, OF BROOKLYN, NEW YORK.

WATCH-CASE SPRING.

SPECIFICATION forming part of Letters Patent No. 455,437, dated July 7, 1891.

Application filed March 12, 1891. Serial No. 384,717. (No model.)

To all whom it may concern:

Be it known that I, NUMA J. FELIX, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Watch-Case Springs, of which the following is a specification.

My invention relates to an improvement in watch-case springs, the object being to produce an article of this kind which shall be cheap and durable, and which may be easily and readily inserted in the case-center.

A further object of my invention is to produce a spring which, from its peculiar construction and arrangement of parts, will be self-locking—that is, will remain in its proper position within the center without the necessity of pinning it thereto.

With these ends in view my invention consists in certain novel features of construction and arrangement of parts, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the spring inserted in a watch-case, the center being partially broken away to expose the spring. Fig. 2 is a sectional view taken on the line *x x* of Fig. 1. Fig. 3 is a view taken on the line *y y* of Fig. 1. Fig. 4 is a view showing the lid of the case closed. Fig. 5 is a detached view of the two parts of the spring separated.

A represents a watch-case center made in the ordinary manner, and B the front lid hinged thereto.

C represents that part or portion of the spring usually known or referred to as the "lift-spring," made of metal and curved or bent in the form of a semicircle, having a radius slightly larger than that of the case-center, in order that it may fit lightly when inserted in position.

By reference to Fig. 3 of the drawings it will be seen that a portion of the metal is cut away, leaving a narrow strip *a* joining the two wider portions *b b*, the width of the latter being such as to allow the spring to fit snugly in the case-center. The strip *a* is bent in the form of an arc of a circle, the metal being cut away from the upper and lower edges of the spring to allow of the strip being curved upwardly, as shown, the effect being to make the spring very flexible. The strip *a* has centrally formed thereon the lip *c*, which engages with and raises the lid B. When the lid is closed the strip *a* is bent downwardly and inwardly, as shown in Fig. 4, and when released returns to its normal position, as shown in Fig. 3, and raises the lid B. The extreme ends of the part C are slightly bent to form the beveled shoulders *e e;* or, instead of bending them, small pieces *h* may be riveted or screwed thereto, as shown in Fig. 5.

D represents that portion of the spring commonly known as the "catch-spring," and, like the portion C, is in the form of a semicircle. This portion of the spring is of substantially the same width throughout and snugly fits the center of the case, with the exception of the catch *d*, made in the ordinary manner, and adapted to engage the lid when in its closed position. The extreme ends of the part D are beveled and fit against the beveled ends *e e* of the part C, and the spring D, being larger in diameter than the part C, overlaps its bent ends and effectually locks the two parts in their position, overcoming the necessity of pinning them to the center, as has heretofore been necessary.

My invention is exceedingly simple in construction, can be manufactured at a small cost, and is easily inserted in the case, as the ends of each part may be slightly pressed toward each other, thereby reducing the arc and allowing the spring to be readily inserted in place.

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

1. A lift-spring for watch-cases, constructed with wide ends adapted to fit snugly in said case, and having the metal between said ends cut away from the upper and lower edges thereof, forming the strip *a*, substantially as described.

2. A watch-case spring constructed with a lift-spring C and the catch-spring D, said lift-spring being constructed with wide ends adapted to fit snugly in the case-center, and having the metal between said ends cut away from its upper and lower edges, forming a strip *a*, the latter being provided with a lip *c*, substantially as described.

3. A lift-spring for a watch-case, constructed

with wide ends and having the metal between said ends cut away from the upper and lower edges thereof, forming a narrow arc-shaped strip *a*, having its upper edge in a horizontal plane with the upper edges of said wide ends, said strip being provided with the lip *c*, to engage the lid, substantially as described.

4. The watch-case spring made of two parts of unequal diameters, one of said parts being provided with wide ends, and having the metal between said ends cut away, forming the strip *a*, the ends of one of said parts being bent and the ends of both beveled, as described, to form seatings one for the other to lock the parts in position, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 9th day of March, A. D. 1891.

NUMA J. FELIX.

Witnesses:
GEORGE COOK,
WILLIAM GOEBEL.