

N. STAFLIN.

Improvement in Reversible Pinion for Watches.

No. 133,064.

Patented Nov. 12, 1872.

Fig. 1.

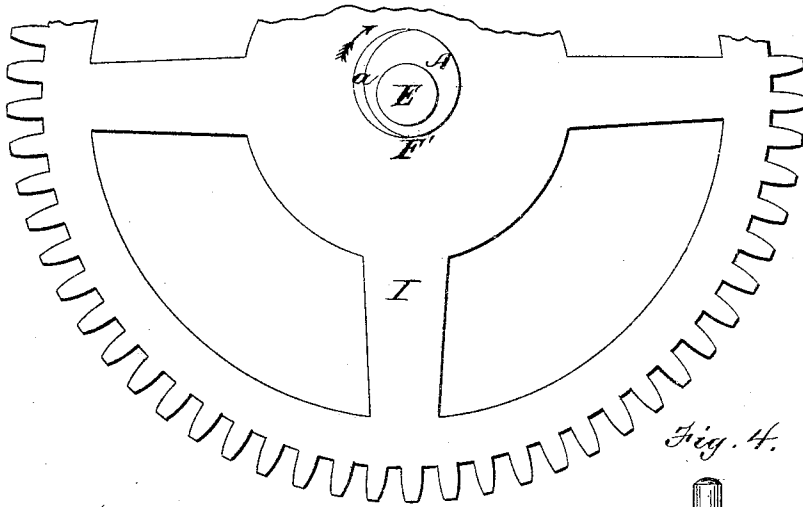


Fig. 4.

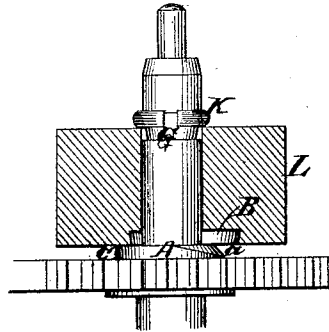


Fig. 3.

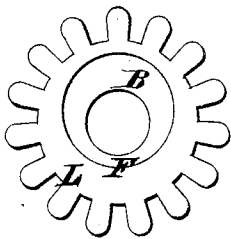
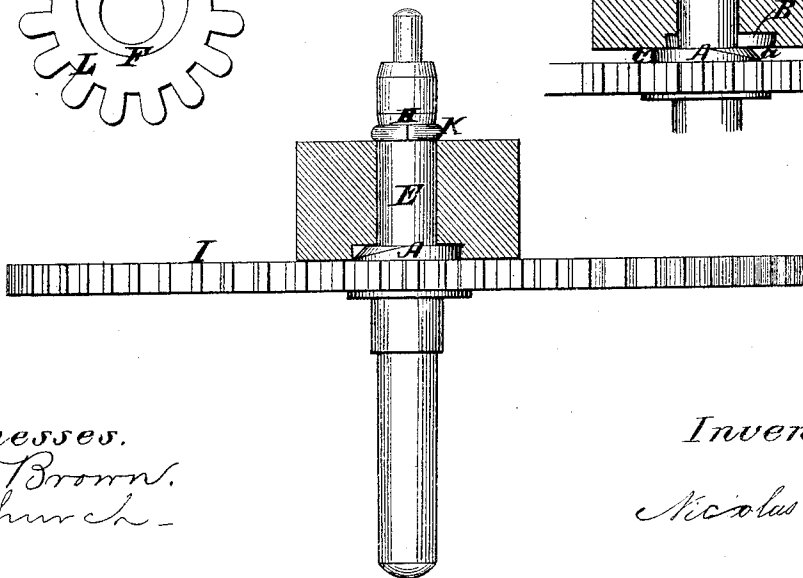


Fig. 2.



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IMPROVEMENT IN REVERSIBLE PINIONS FOR WATCHES.

Specification forming part of Letters Patent No. **133,064**, dated November 12, 1872.

To all whom it may concern:

Be it known that I, NICOLAS STAFLIN, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pinions of Center-Wheels to Watches; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a plan view of the center-wheel with the pinion removed; Fig. 2 is a side elevation of the center-wheel, showing the pinion in section; Fig. 3 is a bottom view of the pinion L; and Fig. 4, a detached view, showing the pinion raised.

My invention has for its object to prevent the breaking of the center-wheel and pinion of a watch in case of a sudden jar, or the violent unwinding of the mainspring in consequence of the breakage of the same or its ratchet; and to this end it consists in the peculiar construction which I will now proceed to describe.

A represents a male eccentric or shoulder, surrounding the shaft E on the upper side of the center-wheel I. The eccentric A fits a corresponding female eccentric, B, which is cut in the under surface of the center pinion L around the bore of the same, as shown in Fig. 3. The eccentric or shoulder A is provided on one side with a tapering outward bevel, *a*, extending from its narrowest to its widest side, as shown, while its opposite periphery is beveled slightly inward, as shown at C, Fig. 4. The female eccentric B of the pinion L has its entire margin slightly beveled inward, as shown in Fig. 4, and receives the male eccentric, as above stated. When the pinion L is placed on the center shaft E with the point F of its female eccentric coincident with the point F' of the male eccentric A, it rests snugly on the surface of the center-wheel, as shown in Fig. 2. If, now, the pinion L, placed on the center shaft, as above described, be turned on the shaft E in the direction indicated by the arrow Fig. 1, the narrow side of the female eccentric B engaging with the beveled side *a* of the male eccentric will raise the pinion L

until it rests upon the top of the same, and revolves freely on the center shaft E, as shown in Fig. 4, thereby disconnecting the pinion L from the wheel I. When, however, the pinion is turned in the opposite direction, the inward bevel of the female eccentric B will be forced under the corresponding bevel C of the male eccentric A, and brought down tightly against the surface of the center-wheel I in one direction, and against the shaft E in another direction, the narrow portion of the female eccentric being pressed against the wide portion of the male eccentric, thereby locking both together, as shown in Fig. 2. This latter is the relation that the pinion L sustains to the wheel I when the watch is in operation, but when, by the breaking of the mainspring or ratchet, a sudden jar is given to the center-wheel and pinion by the sudden and violent unwinding of the mainspring, instead of breaking any part of the center-wheel or pinion a reverse movement of the latter is permitted, throwing it in the direction of the arrow, Fig. 1, and thereby raising it above the male eccentric A, as above described, thus disconnecting it from the center-wheel and preventing the breakage of any part. K is a circular-cut ring or spring, which rests on the top of the pinion L, the latter being flush with the lower edge of a groove, G, cut in the shaft E for the reception of said ring, which claps the shaft tightly. In case of the breakage of the mainspring, &c., the pinion L rising, as above described, forces upward the ring or spring K against the bevel H, which is formed by the notch G, and as the ring rises it is sprung open, and remains thus until the pinion L revolves to such a point that its female eccentric becomes coincident with the male eccentric of the wheel I, at which point the tension of the ring K forces the pinion down to its natural position. This occurs at each revolution of the pinion in its reverse movement, thus always returning the pinion to its proper place for operation.

This open circular ring-spring may be made as we have shown and described it, and left loose on the shaft of the center-wheel; or it may be made as shown and described and attached to the pinion at some point of the ring-spring and pinion; or it may be made a part

of the pinion itself; or it may be made in a spiral, screw, or other form. In any case, its object is the same, viz., to return the pinion on the shaft of the center-wheel to place after it has been thrown out. The notch G may be made without the bevel, and with a shoulder at H, against which a spiral spring may lodge; or it may be made in any other way desired.

Having now described my invention, what I claim as new and as my invention, and desire to secure by Letters Patent, is as follows:

A center-wheel having on its upper side,

surrounding its shaft, an eccentric shoulder, A, beveled outward at *a* upon one side and inward at C on the opposite side, in combination with the corresponding female eccentric B of the pinion L, beveled inward around its entire margin, substantially as described, for the purpose specified.

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Witnesses:

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