J. GORDON.

Reversible Pinion for Watches.

No. 160,585. Patented March 9, 1875.

Fig. 1.

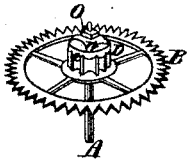

Fig. 2.

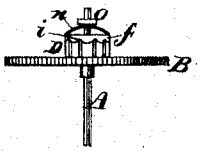

Fig. 3.

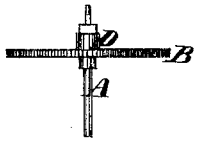

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN GORDON, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN REVERSIBLE PINIONS FOR WATCHES.

Specification forming part of Letters Patent No. **160,585**, dated March 9, 1875; application filed December 3, 1874.

To all whom it may concern:

Be it known that I, JOHN GORDON, of San Francisco city and county, State of California, have invented Improvements in Reversible Pinions for Watches; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention consists in so attaching the center-pinion to its staff that it will yield not only when the mainspring breaks, but also when unusual strain is applied to the winding-post in winding the watch; or, in other words, I attach the pinion to the staff so that it will yield in either direction upon the application of an unusual strain upon it.

In the drawings, Figure 1 is a perspective view of my device. Figs. 2, 3 are side elevations of the wheel.

A represents the pinion-staff, to which the center-wheel B is attached in the usual manner. The pinion D is fitted upon the staff close up against the wheel B, so that it will rotate loosely in either direction, the staff or post being made round where the pinion fits on it. Just above the pinion I make a short portion of the staff square, as shown at *e*, and upon this square portion I slip a circular plate or cap, *f*, the center of which is provided with a square hole to fit the square portion of the staff. The lower surface of this plate or cap, which lies upon the upper end of the pinion, is provided with radial corrugations or indentations *i*, which correspond with the teeth of the pinion, so that the end of each tooth of the pinion will fit in one of the radial grooves. The plate or cap *f* is then pressed down against the upper end of the pinion by a spring, *n*, and nut *o*. The spring *n*, which may be either spiral or in the form of a bow, slips down over the staff until it rests upon the plate, and the nut *o* is screwed down upon the staff, so as to compress it against the plate *f* with any desired amount of pressure.

The radial indentations or corrugations on the under side of the cap *f* need not extend entirely to the center of the cap, but they may be made only around the outer rim where it rests upon the teeth.

It will thus be seen that if the mainspring should break there will be no danger of breaking pinions or pivots, as the cap *f* will yield and allow the pinion to rotate.

This arrangement is also a valuable addition to stem-winding watches, as it will prevent the pinion from being broken in case it should be strained after the mainspring is fully wound up.

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

The staff A, with its center-wheel B and loose pinion D, in combination with the cap or disk *f*, with its corrugations or indentations *i* arranged to receive the ends of the teeth of the pinions, and the compressing-spring *n* and nut *o*, all combined and arranged to operate substantially as and for the purpose above described.

In witness whereof I hereunto set my hand and seal.

JOHN GORDON. [L. S.]

Witnesses:

JNO. L. BOONE,

C. M. RICHARDSON.