M. N. FREDERICK.

WATCH.

No. 79,968. Patented July 14, 1868.

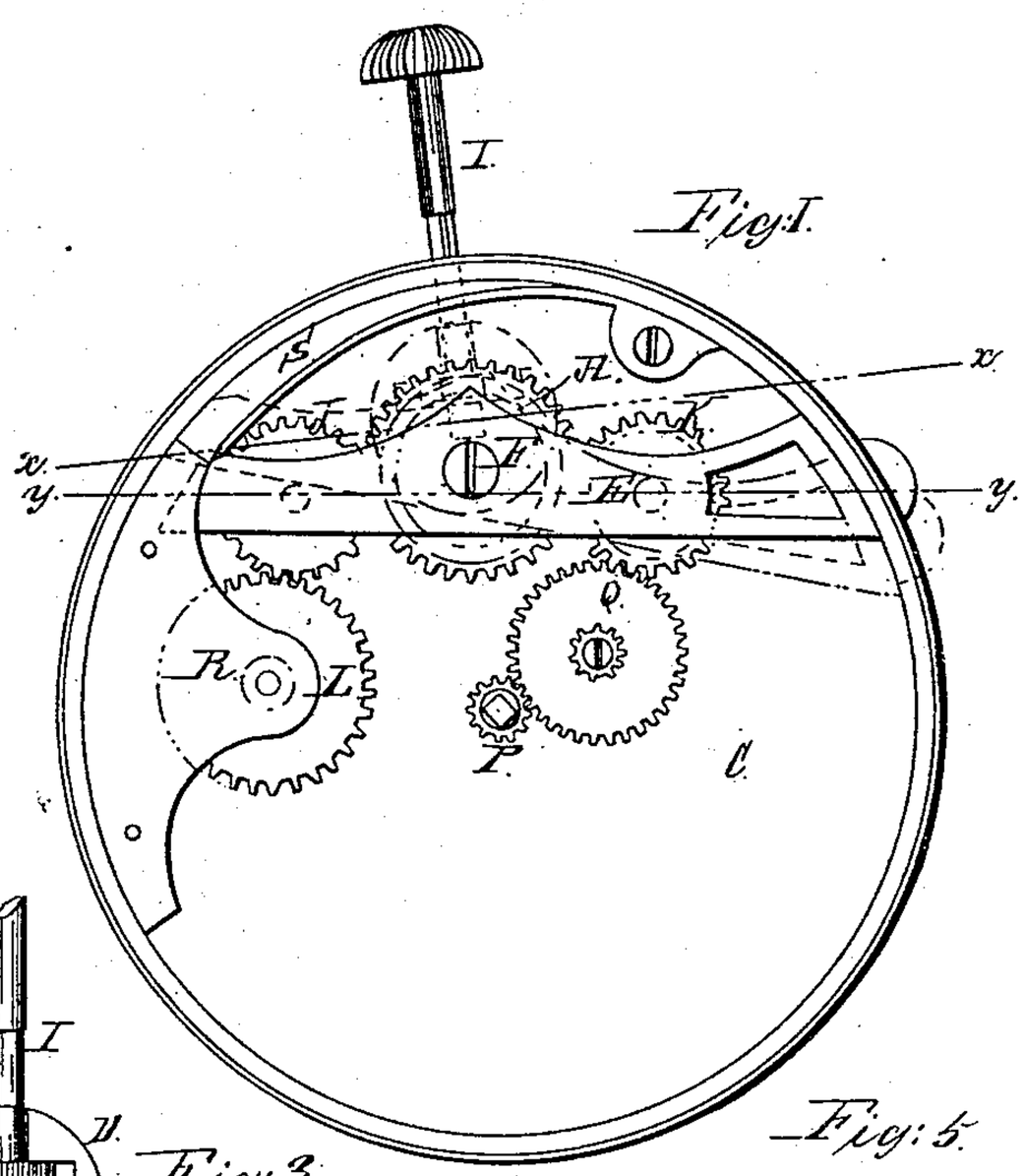

Fig: I.

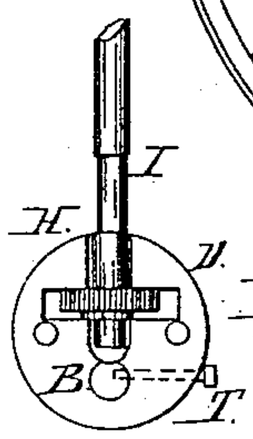

Fig: 3.

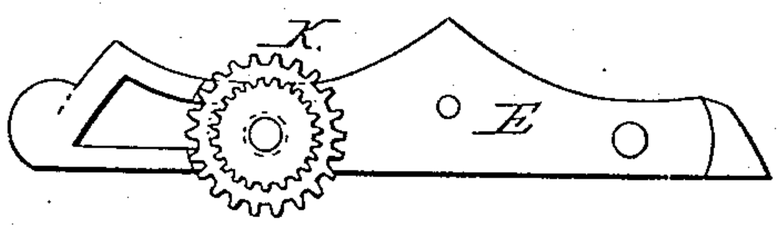

Fig: 5.

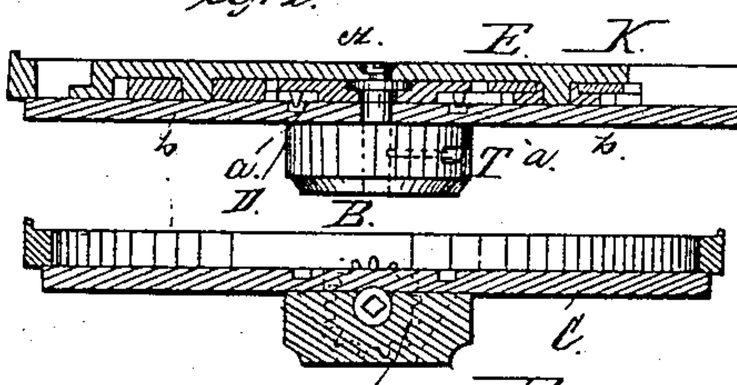

Fig: 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

MARSHALL N. FREDERICK, OF ELGIN, ILLINOIS, ASSIGNOR TO HIMSELF AND CHARLES S. MOSELEY, OF SAME PLACE.

IMPROVEMENT IN WATCHES.

Specification forming part of Letters Patent No. **79,968**, dated July 14, 1868.

To all whom it may concern:

Be it known that I, MARSHALL N. FREDERICK, of Elgin, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Watches; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and the letters and figures marked thereon, which form a part of this specification, and in which—

Figure 1 represents a top or plan view of my improved watch with the dial removed; Fig. 2, a vertical section taken at the line *y* in Fig. 1. Fig. 3 represents a plan view of the spur-wheel which the stem-key turns and the box containing the same; Fig. 4, a section at the line *x* in Fig. 1, and Fig. 5 an inverted view of the vibrating bar E with the double wheel K.

The nature of my invention consists in a novel device for winding watches and turning their hands by means of stem-keys, as hereinafter described.

The same letters of reference represent the corresponding parts in the different figures.

To enable those skilled in the art to manufacture and use my invention, I will proceed to describe the same with particularity.

A represents a drive-wheel with teeth or cogs upon its edge, and also extending down from its under side, as shown at *a* in Fig. 2. This wheel is held in position by the stud or post B, the head of said stud being sunk into the wheel, while the stud extends through the plate C and box D, as indicated by the dotted lines in Fig. 2, and being made long and receiving such a long support it is held firm, and it in turn holds the wheel A perfectly steady and even, so that it is much less liable to break. The box D is firmly secured to the under side of the post-plate C by screws, and contains the spur-wheel H. The spindle or hub of this spur-wheel is made hollow to receive the stem-key I of the watch and have a bearing in the box D, and also on the under side of the post-plate C in such a manner that when the box D is removed from the post-plate the spur-wheel H can be lifted out of the said box. When the spur-wheel H is in position it extends up through a slot in the post-plate C and gears to the cogs on the under side of the drive-wheel A, so that when the spur-wheel H is turned by the stem-key it turns the drive-wheel A. There is a female screw in the top of the stud or post B, and also a slight projection, which extends up into the vibrating bar E, and the said vibrating bar vibrates on this projection and the screw F, which passes through the vibrating bar and screws into the top of the stud or post B. The stud or post B is held and raised and lowered, so as to tighten or loosen the drive-wheel A, by means of the screw T, the end of which is so shaped that when it is screwed into the stud B it draws it down and tightens the wheel A. There are two auxiliary wheels, J and K, arranged beneath the vibrating bar E, which turn on spindles *b*, extending down from the under side of said bar, and, being a part of it, are thereby made firmer and less liable to get out of repair than separate pieces attached to the bar, as spindles would be. These wheels gear to the drive-wheel A, and the wheel J gears to the wheel L, which is an ordinary cog-wheel placed upon the mainspring-arbor, while the wheel K, which is a double wheel, as more clearly shown in Fig. 5, gears its under and finer set of cogs to the wheel Q, which turns the hand-post P. The plate R is fastened to the plate C and extends out over the wheel L and forms a bearing for one end of the main-spring-arbor, while at the same time it passes over one end of the vibrating bar E. There is a spring, S, which presses against one end of the bar E, and serves to keep the wheel J constantly in gear with the wheel L and the wheel K thrown back, so that it is not in gear with the wheel Q.

To wind up the watch, one simply turns the stem-key; but the wheels are so arranged with respect to each other that the cogs on the wheel J will slip over those on the wheel L, and perform the "back click," if the stem-key is turned in the wrong direction, so there can be no harm done the watch whichever way the stem-key may be turned.

When it is desired to turn the hands the vibrating lever E is thrown into the position indicated by the dotted lines in Fig. 1, which brings the under set of cogs in the wheel K in gear with the wheel Q, when by turning the stem-key I the hands are moved in either direction, as desired. When the vibrating lever E is thrown into the position of the dotted lines

the inner end of the said bar strikes against the plate C, and also a shoulder near the outer end of said bar strikes against the said plate at the end of the slot in said plate, through which the end of the bar passes. This arrangement prevents the wheel K from being pressed too hard against the wheel Q, and at the same time enables the operator to hold the bar E perfectly firm when the hands of the watch are being turned; also, when the vibrating bar E is in the position shown in Fig. 1 a shoulder near the outer end of said bar strikes against the post-plate C, so that the wheel J cannot be pressed too hard against the wheel L, while it serves with the spring S to keep the bar E firm and steady when the watch is being wound.

Having thus fully described the construction and operation of my invention, what I desire to secure by Letters Patent is—

1. The stud or post B, having a bearing through the plate C and box D, thereby holding the drive-wheel A firm and steady, substantially as described.

2. In combination with the stud or post B and drive-wheel A, the screw T, constructed substantially as described.

3. The double wheel K, in combination with the wheels A J and the vibrating bar E, provided with spindles *b*, arranged to operate substantially as specified, and for the purposes set forth.

4. The spur-wheel H, in combination with the box D and post-plate C, when arranged so that the bearing of the spur-wheel is partly in the box and partly in the plate, substantially as set forth.

5. The plate R, in combination with the wheel L and mainspring-arbor, when arranged substantially as specified.

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Witnesses:
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