V. HIMMER.

Watch Winder.

No. 94,825. Patented Sept. 14, 1869.

FIG. 1

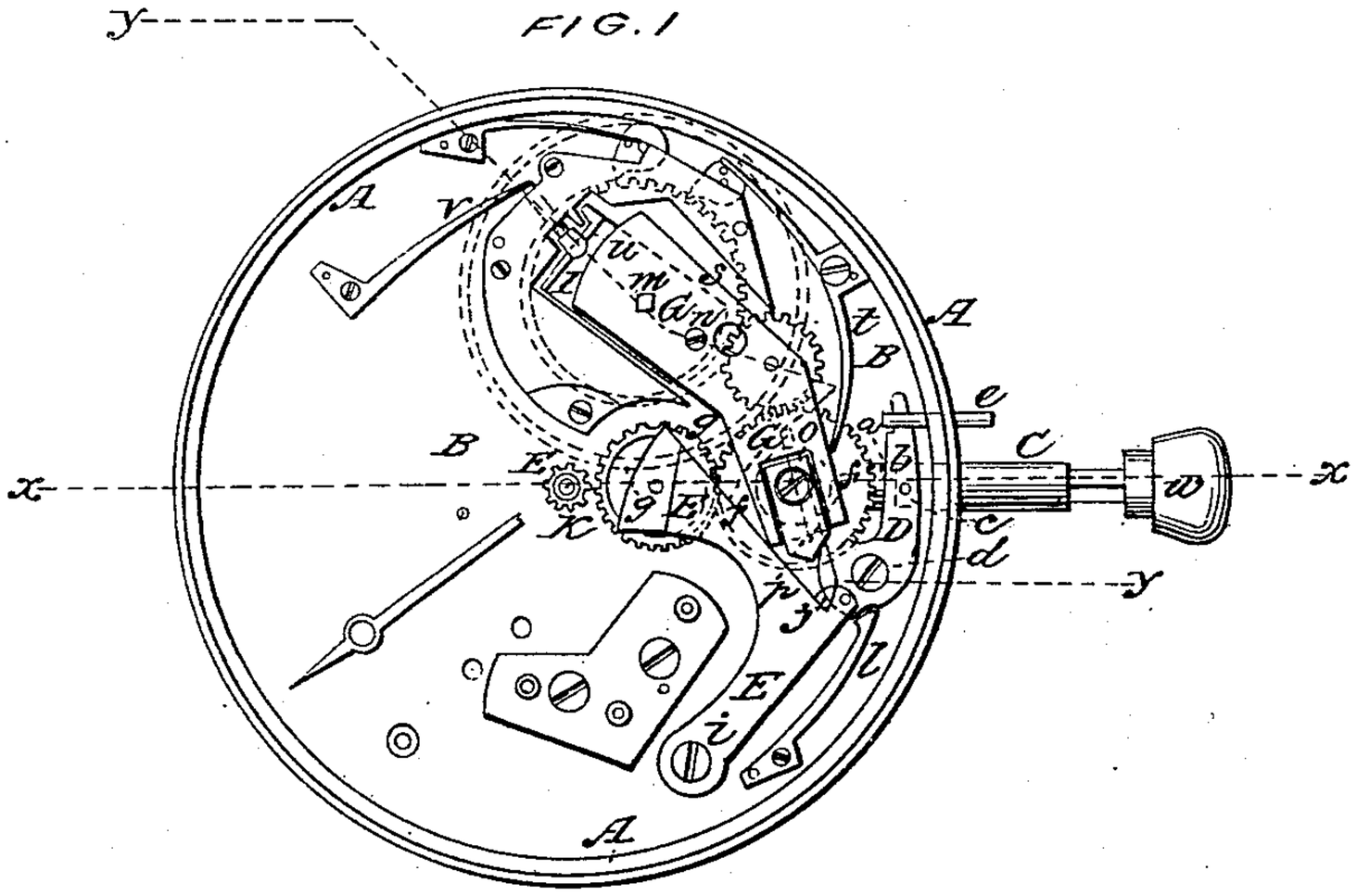


FIG. 2

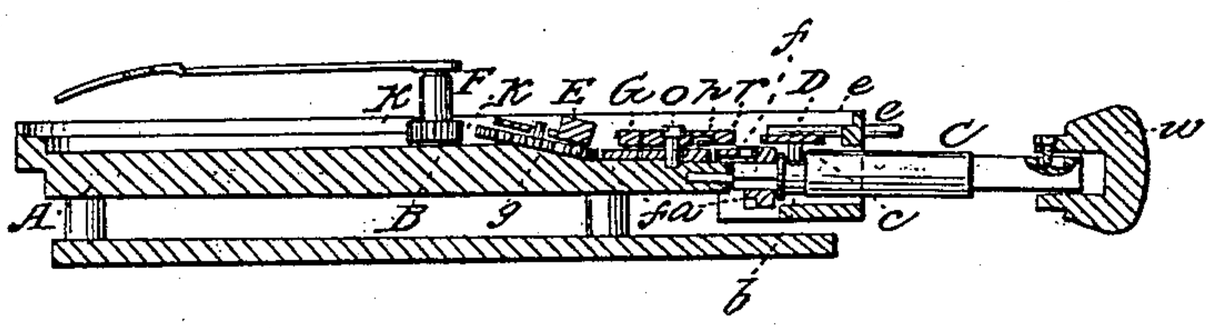
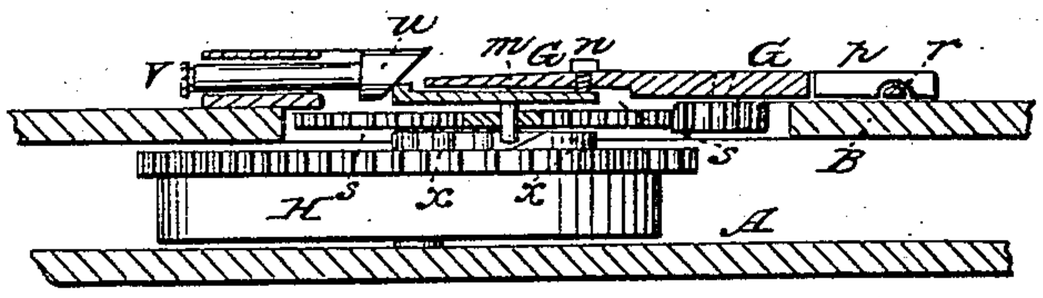


FIG. 3



WITNESSES:

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VITALIS HIMMER, OF BROOKLYN, NEW YORK.

Letters Patent No. 94,825, *dated September* 14, 1869.

IMPROVEMENT IN STEM-WINDING AND SETTING-ATTACHMENT TO WATCHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, VITALIS HIMMER, of Brooklyn, in the county of Kings, and State of New York, have invented a new and improved Winding and Setting-Attachment to Watches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents an enlarged face view of a watch provided with my improvements.

Figure 2 is a central section of the same, taken on the plane of the line *x x*, fig. 1.

Figure 3 is a detail transverse section of the same, taken on the plane of the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention is based upon the improvements in stem-winding watches for which Letters Patent No. 86,751 were granted to me, on the 9th day of February, 1869, and has for its object to simplify the winding-attachment therein described, to make both the setting and winding-attachments controllable by the stem of the watch, and to prevent the closing of the case in hunting-case watches, as long as the setting-attachment is in gear.

The invention consists, first, in the use of a jointed plate, in place of the spring-plate acted upon by the pin on the drum. Thereby less friction and consequent easier action are obtained.

The invention also consists in a novel manner of hinging, or rather fastening the aforesaid jointed plate.

A, in the drawing, represents the case of the watch.

B is the upper plate, under the dial.

C is the stem, and

a, the crown-wheel turned by the same.

The stem is so arranged, that it will slide in the case, and is polygonal where it fits loosely through the crown-wheel. It will, therefore, not affect the position of the same, when moved longitudinally, while, when turned, whether drawn out or pushed in, it will always turn the crown-wheel.

The stem is cylindrical outside of the crown-wheel, as shown in fig. 2, and has a groove, *b*, cut around it, into which a pin, *c*, projecting from a plate, D, is fitted.

The plate D is, by a pin, *d*, pivoted to the plate B, and is, when the stem is drawn out, swung out against the rim of the case.

A pin, *e*, fitted loosely through the rim of the case, is connected with the plate D, and is pushed out when the stem is drawn. The outward motion of the stem is arrested by the plate D, when the same strikes against the rim of the case.

The crown-wheel *a* meshes into the teeth of a wheel, *f*, which turns on the plate B, and which transmits motion to one of two pinions, *g* and *h*.

The pinion *g* is hung on an elbow-plate, E, which is pivoted at *i* to the plate B, and which, by a pin, *j*, is connected with the plate D. When the stem is drawn out, the plate E is so swung by D that its pinion *g* is thrown into gear with the pinion *k*, on the minute-hand spindle F, and the setting-device is thus thrown into gear, as *g* still remains in gear with *f*.

A spring, *l*, locks the plate D in the drawn-out and pushed-in positions. When the stem is drawn out, the setting-device is thrown into gear, and at the same time the winding-device is thrown out of gear, as the plate D acts on the plate G, to which the transmitting-wheel *h* of the winding-attachment is pivoted, as hereinafter more fully described.

While the setting-apparatus is in gear, the pin *e* is pushed out of the case, and prevents the locking of the case. The setting-apparatus can, therefore, not be accidentally retained in gear after the hands are set, as the case cannot be closed. For hunting-case watches this device is of great value. For open-cased ones it is, of course, to be dispensed with.

The drum H of the watch carries the fingered wheel *x* substantially as described in my aforesaid Letters Patent, and acts on the pin *m* to elevate the same, when the spring is wound up, as fully described therein.

The pin *m*, when pushed up, acts on a plate, I, that is, by a pin, *n*, pivoted to the plate G. The plate G is fitted upon a pin, *o*, that is the centre of the wheel *f*. The pin *o* locks to the plate B a small plate, *p*, which fits into a slot of the plate G, and over a cross-bar, *r*, formed on the same, as indicated in fig. 2, and by dotted lines in fig. 1. The plate G can thus swing on the pin *o* with the plate *p*, and can also swing vertically on the cross-bar *r*.

The pin *m*, when pushed up, raises the plate I, which forms part of G, and thereby causes the latter to swing up on *r*. When the plate I is thus raised, its end slides on the bevelled end of a pin, *u*, and it is thereby pushed in toward the stem. But as a direct motion cannot thus be produced, the plate I will turn on its pivot *n*, to make a knee, and the plate G will also turn in a similar manner on the pin *o*, and will thereby throw the wheel *h* out of gear with the wheel *s*, that is mounted on the spindle of the main-spring.

The winding-attachment is, therefore, disengaged as soon as the main-spring is entirely wound up. It is

also disengaged when the stem is drawn out, as then the plate D will act on the plate *p*, to swing G, whereby the wheel *h* is carried away from S.

A spring, *t*, has the tendency to hold the plate G in such position that the winding-attachment is in gear.

The pin *u* is connected with a strong spring, V, to be yielding to a certain degree.

The wheel *g* rests on an inclined surface, as in fig. 2, to be in gear with the wheels *f* and *k*, which are in different planes, as shown.

The stem-head *w* is for hunting-case watches, movable on the body of the stem, to operate independently of the mechanism for opening the case.

Instead of the jointed plate G I, a spring plate may be used, substantially as in my former patent.

Having thus described my invention,

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

1. The jointed plate G I, acted upon by the pin *m* of the main-spring drum, for throwing the winding-attachment out of gear, substantially as herein shown and described.

2. The plate G, when slotted and fitted around the swivelled plate *p*, which rests on a cross-bar *r* of the plate G, so that the latter can be turned horizontally and vertically, substantially as herein shown and described.

VITALIS HIMMER.

Witnesses:
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