

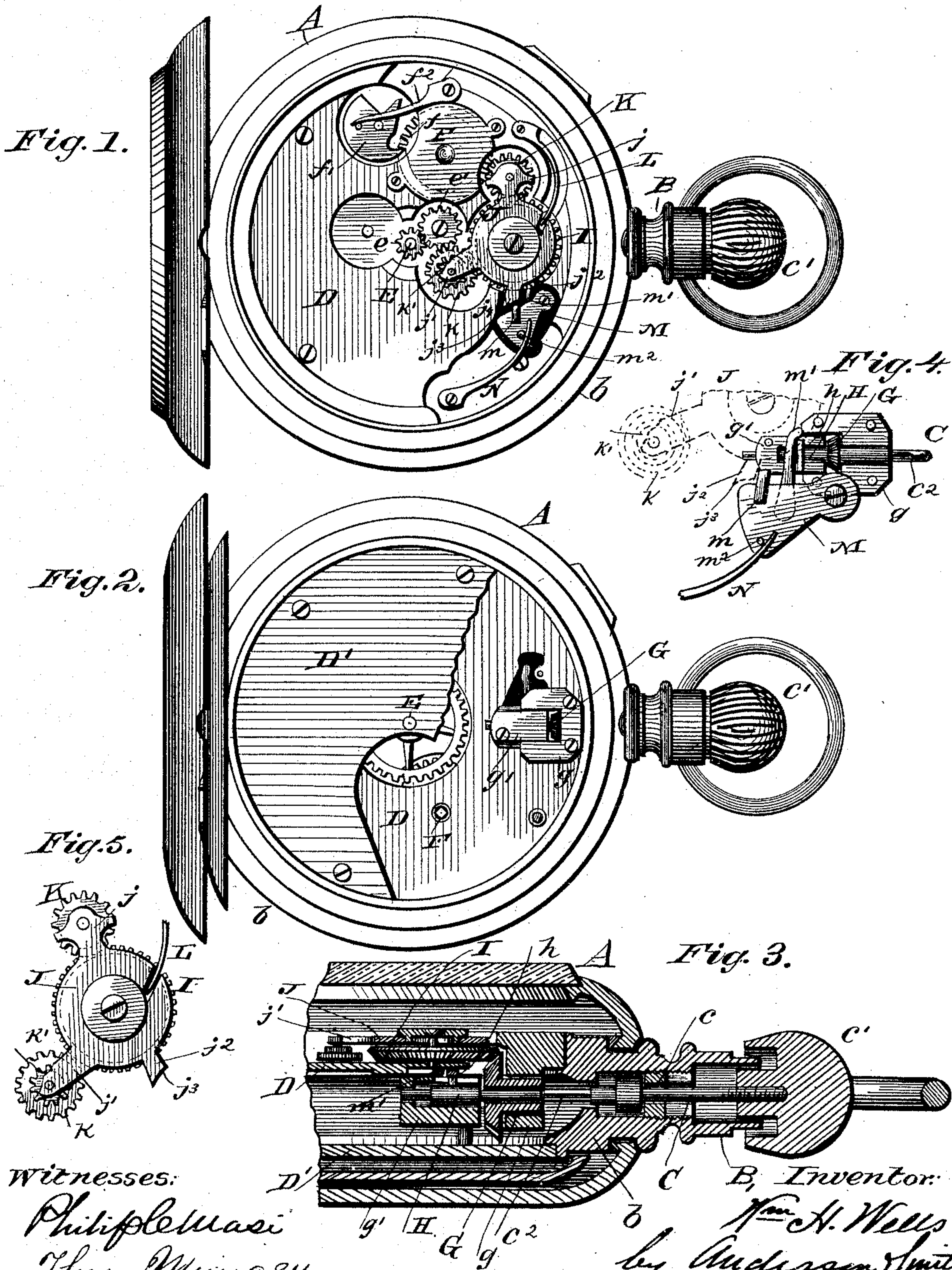
(No Model.)

W. H. WELLS.

STEM WINDING AND SETTING WATCH.

No. 356,021.

Patented Jan. 11, 1887.



Witnesses:

Philip Massi
Theo. Mungen.

B, Inventor:

W. H. Wells
by Anderson & Smith
his Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM H. WELLS, OF SPRINGFIELD, ILLINOIS.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 356,021, dated January 11, 1887.

Application filed September 15, 1886. Serial No. 213,625. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. WELLS, a citizen of the United States, and a resident of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Stem Winding and Setting Watches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a plan view of a watch, showing the front or pillar plate. Fig. 2 is a reverse view of the same, partly broken away. Fig. 3 is an enlarged vertical section of one end of the watch. Fig. 4 is a detail view of the cam-plate and its connections, and Fig. 5 is a detail view of the vibrating plate.

The invention relates to improvements in stem winding and setting mechanism for watches; and it consists in the construction and novel arrangement of parts hereinafter described, illustrated in the drawings, and pointed out in the claims hereto appended.

Referring by letter to the accompanying drawings, A designates the watch-case, having in front the bezel and crystal and on the back the outer and inner hinged covers of ordinary construction.

B is the pendant-sleeve standing from the ring-frame *b*, and C is the pendant-stem turning in the same and having a slight longitudinal movement therein, which motion is limited by an enlarged portion of the stem engaging against a circumferential shoulder on the interior of the sleeve, and a similar shoulder on the interior of a screw-sleeve block, *c*, within the sleeve.

c' is a screw-cap or pendant-crown on the threaded outer end of the stem C, and with its edge overlapping the outer end of the sleeve B, and *c''* is the inner end of the pendant-stem squared, for a purpose hereinafter explained.

D is the front or pillar plate of the watch-movement, and D' the back plate of the same, the said plates being bound together by screws in the usual manner.

E is the hand-arbor bearing the pinion *e*, and *e'* is a gear-wheel meshing with said pinions and forming part of the setting-train.

All the gears, springs and vibrating plates of the setting and winding mechanism, with the exception of a bevel-pinion actuated directly by the pendant-stem, are situated on the front surface of the pillow-plate, preferably, in suitable recesses therein.

F is the spring-arbor bearing the gear-wheel *f*, which is prevented from rotating in reverse direction of winding by the pivoted pawl *f'*, controlled by the spring *f''*.

G is a bevel-gear, with its boss journaled in the body or cross-piece of a bifurcated block, *g*, which is secured to the inner surface of the pillar-plate radially inward from the pendant-sleeve. The said boss is hollow, and has its outer orifice squared to receive the squared end of the pendant-stem, so that the bevel-gear will rotate with the latter.

g' is a block that slides between the arms or bifurcations of the block *g*, and is secured to the pillar-plate with its outer end adjacent to the inner surface of the bevel-gear G.

H is a pin moving longitudinally in a recess or channel in the block *g'* and in the opening through the bevel-gear, the outer end being in contact with the inner end of the pendant-stem. The said pin does not rotate with the bevel-gear, and it is provided with a cross-bar, *h*, the function of which is hereinafter explained.

I is a beveled wheel journaled on the front surface of the pillar-plate, and meshing through a suitable slot in said plate with the bevel-gear G.

J is a vibrating plate journaled on the outstanding boss of the beveled wheel, and provided with the three extensions *j*, *j'*, and *j''*, respectively. The extension *j* has journaled upon it, near its end, a gear-wheel, K, adapted to be engaged with the gear *f* on the main-spring-arbor. The extension *j'* has journaled on it, near its end, the two pinions *k* *k'*, secured on the same axis, the former of which always meshes with the beveled wheel and the latter of which is adapted to be moved into engagement with the pinion *e*, and consequently forms part of the setting-train. The winding-train is composed of the beveled wheel

and the gears k and f , the setting-train consisting of the contrate wheel and the gears k , k' , e' , and e . The extension j^2 has a downwardly and outwardly inclined and slightly concave end, j^3 , for a purpose hereinafter explained. The lower edge of said extension is arranged to impinge against a shoulder, j^4 , on the face of the pillar-plate, to limit the movement of the vibrating plate J.

10 L is a spring secured to the face of the pillar-plate, with its end entering a notch in the edge of the plate J. The action of said spring is to disengage or break the setting-train and engage or unite the winding-train.

15 M is a vibrating cam-plate pivoted on the face of the pillar-plate, with its cam-lug m engaging against the projection j^2 of the plate J. M' is an arm standing from the rear surface of said plate in a suitable slot in the pillar-plate, and having its end upturned or turned outward and impinging against the lower surface of the cross-bar h of the pin H.

20 m^2 is a pin on the front surface of the cam-plate, and N is a spring secured to the face of the pillar-plate and its end bearing upon said pin so as to force the cam-plate toward the vibrating plate J. When the cam-lug m lies on the outer edge of the projection j^2 , the spring N forces the plate J into position to

25 complete the setting-train and disconnect or break the winding-train. The edge of the projection j^2 then lies against the shoulder j^4 . When the pendant-stem is pushed inward, it drives inward the pin H, and the cross-piece

30 h thereon depresses or drives inward, the end of the arm m' , so that the cam-plate M is moved outward and the cam-lug m released from the

upper edge of the extension j^2 . The spring L then moves the plate J so as to complete the winding-train and disconnect the setting-train, 40 as described.

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

1. In a stem setting and winding watch, the combination of the setting-train, the winding- 45 train, the vibrating plate J, having the projection j^2 , the spring L, the vibrating cam-plate having the cam-lug m and arm m' , and the pin H, provided with the cross-piece h , with a pendant-stem moving longitudinally in the 50 pendant-sleeve, and with its inner end impinging on the outer end of the pin H, so as to impart longitudinal motion to the latter, substantially as specified. 55

2. In a stem setting and winding watch, the combination of the pendant-stem having longitudinal motion in its sleeve, the bevel-gear G, the pin H, provided with the cross-piece h , the vibrating cam-plate M, provided with the cam- 60 lug m and arm m' , and the spring N, actuating said cam-plate, with the vibrating plate J, provided with the arms j j' j^2 , the beveled wheel I, the gear-wheels K k k' , attached to the plate J, the setting-pinions e e' , and winding- 65 gear f , all constructed and arranged substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. WELLS.

Witnesses:

OSCAR ANSELL,
GEORGE KRIEGER.