

C. V. WOERD.

Watch.

No. 65,034.

Patented May 21, 1867.

Fig. 1.

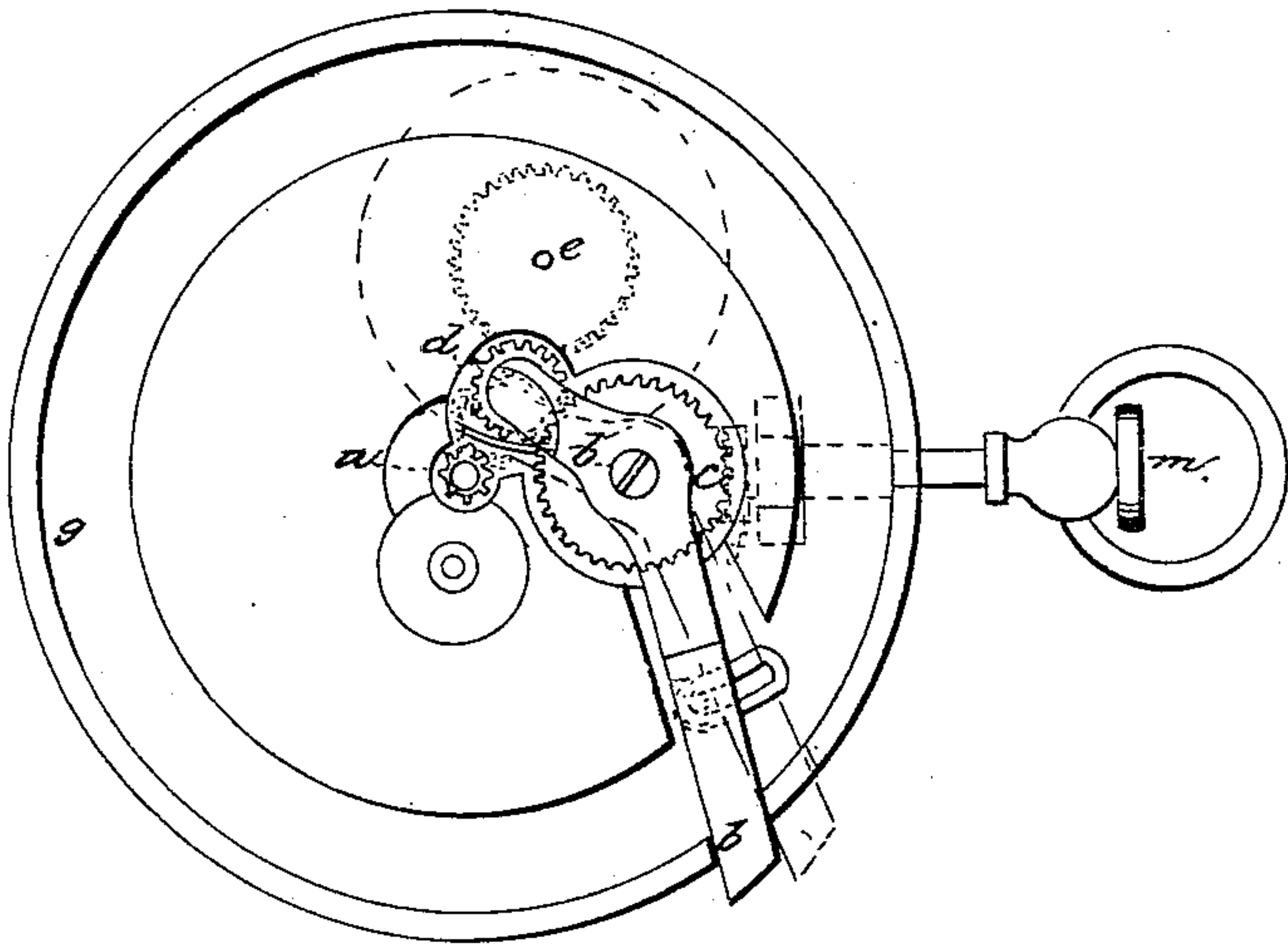
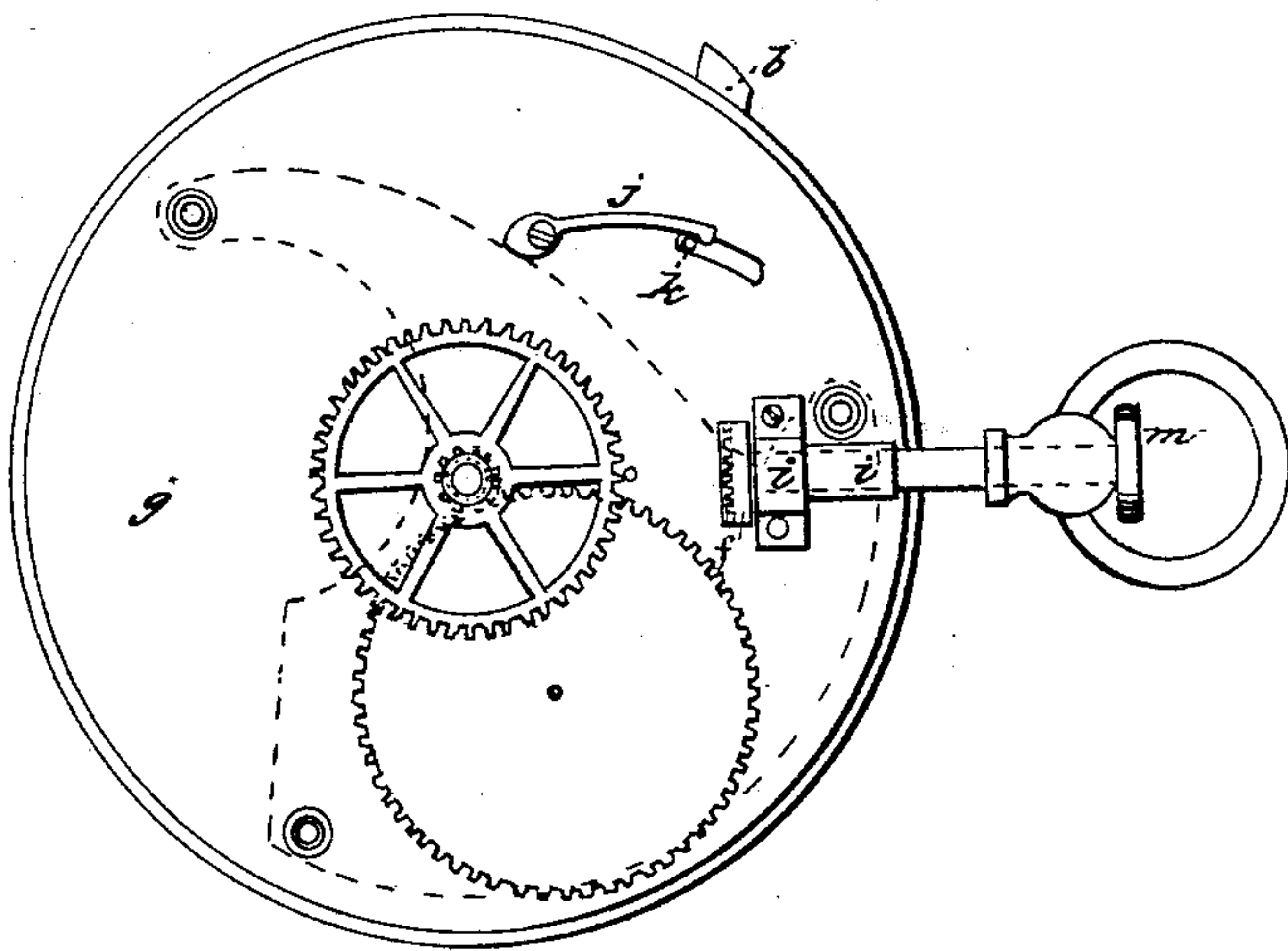


Fig. 2.



Witnesses:
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United States Patent Office.

CHARLES V. WOERD, OF WALTHAM, MASSACHUSETTS.

Letters Patent No. 65,034, dated May 21, 1867.

IMPROVEMENT IN 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, CHARLES V. WOERD, of Waltham, in the county of Middlesex, and State of Massachusetts, have invented a new and useful Improvement in Watches; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

To be able to wind a watch and set its hands without the employment of a detached key, and without the necessity of opening the case of the watch for the application of such a key, is an object which has long been sought, and which has been accomplished prior to my invention, but not in a simple and unobjectionable manner.

My invention consists in the peculiar and special arrangement of parts shown and described, by which, through the same instrumentalities, changed only as to position, I am enabled either to wind the main-spring or to set the hands of the watch to which they are applied. Of the drawings, (which are on an enlarged scale)—

Figure 1 shows a plan of the front plate of a watch movement from which the dial, hands, and other parts have been removed, showing of old and well-known matter in full lines, the cannon pinion *a*, and in dotted lines the main-spring barrel. Of new matter there is shown in said view in full lines a lever, *b*, pivoted on the axis of wheel *c*, and carrying the shifting intermediate gear *d*; and a crown-wheel, *f*, is also partly shown in full lines; and in said figure there is also shown of new matter, in dotted lines, a spur-gear fixed on the well-known barrel-shaft *e*, to which the main-spring is attached, and by which it is wound.

Figure 2 shows a reverse plan from that seen in fig. 1 of the front or full plate *g*, and exhibits of the new matter only the crown-wheel *f* and its tube or sleeve-bearing *i*, and the spring-catch or lock *j*, and the pin *k* in the lever *b*, by which said lever is secured in one of two positions, shown in fig. 1; the one being seen in black lines and the other in red lines. In fig. 2 the position and shape of the partial back-plate, covering the spring-barrel and other parts, is shown by dotted lines; and the gear on the barrel, the pinion into which it meshes, and one of the train gears connected with said pinion, are clearly seen; the centre-shaft or spindle on which the cannon-pinion *a* is fitted being driven, as is common, by a friction tight-fit. The shaft of the crown-gear *f*, which may be considered the prime mover of the new train for the purpose of winding and setting, is extended in practice through the case and stem thereof, so as to terminate in a milled head, *m*, as seen in the drawing, and the prime mover meshes into the gear *c*, which may be considered the second motor, which in turn drives the third motor or intermediate gear *d*, which is hung so that it may be made to mesh into either the cannon-pinion for the purpose of setting the hands, or into the gear on the barrel-shaft, for the purpose of winding the main-spring therewith, connected. The lever *b* being pivoted on the axis of gear *c*, and the gear *d* to the short arm of said lever, it will be seen that the teeth of *d* must always mesh into the teeth of *c*, and that the teeth of *d* will mesh either into the cannon-pinion, or into the wheel on the main-spring shaft *e* in the barrel, according to the position of the lever *b*, which the possessor of the watch may change at pleasure. It should be observed, however, that the wheel *d* should be left in gear with the cannon pinion *a* only while setting the hands, for if so left in gear, the new train would have to be driven by the main-spring through the old or time-train, which would derange the rate of movement of the watch. The gear *d* should be left in mesh with the gear on the winding arbor, this being still, while the time-train is moved by the rotation of the barrel, and thus no effect on the rate of movement of the watch is produced by the addition. To prevent accidental movement of the lever *b*, the long end of which projects through the case of the watch, a slot is cut in plate *g* concentric with the axis of gear *c*, so that pin *k* in lever *b* can project through said plate, and can traverse said slot, the spring *j* shaped, located, and arranged substantially as seen in fig. 2, operating to hold the lever *b* in either of the two positions shown in fig. 1 till considerable force is purposely applied to change the position thereof. The ends of the curved slot in the plate *g*, or the ends of the necessary slots in the rim of plate *g*, or in the rim of the watch case, may be made to act as stops to prevent too great extent of movement of lever *b*.

It will be seen in my arrangement that by so hanging the lever that its fulcrum is at the centre of the wheel *c*, the hands are made entirely independent of the winding, in a manner that could not be attained by hanging the lever at any other point, without disturbing the proper relation between the teeth of the wheels *d* and *c*. Other stem-winding and setting mechanisms with which I am acquainted have one or both of the fol-

lowing defects: In setting the hands they can be moved but one way, consequently the hour-hand has oftentimes to be moved nearly over all the hour marks on the dial. The hands cannot be moved without slightly winding the spring, consequently, when the spring is fully wound, the hands cannot be set. But in my improvement the hands can be set in either direction, and the spring is not thereby affected.

I claim, in combination with the wheel *c*, and means for rotating the same, the lever *b*, provided with the wheel *d*, when arranged to operate substantially as described.

Also, in combination with the lever *b* and wheel *d*, a spring-catch, latch-pin, and stops, substantially as and for the purpose described.

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Witnesses:

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