(No Model.)

O. OHLSON.

STEM WINDING AND SETTING WATCH.

No. 587,158. Patented July 27, 1897.

FIG. 1

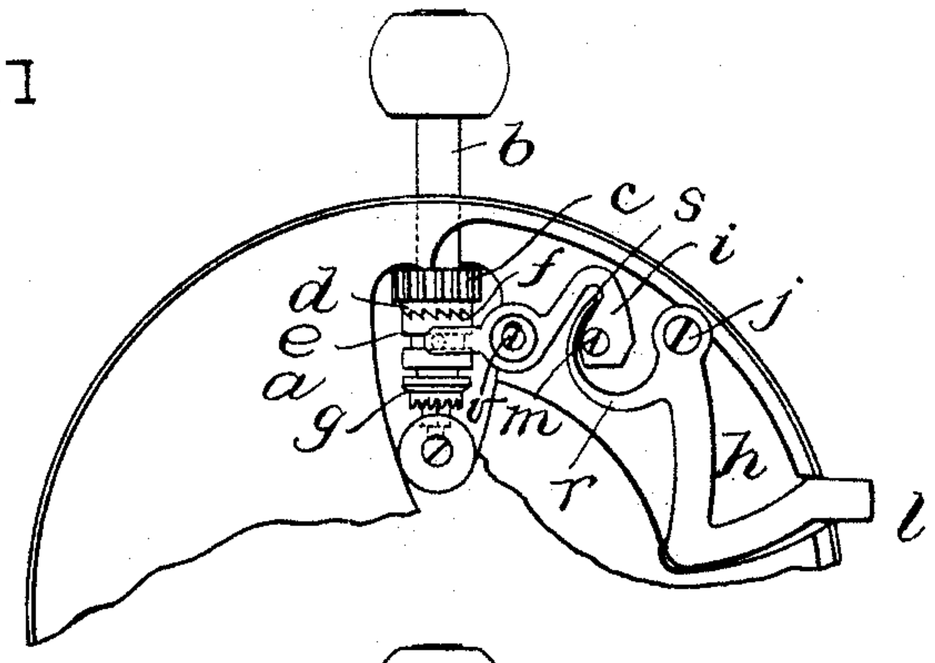


FIG. 2.

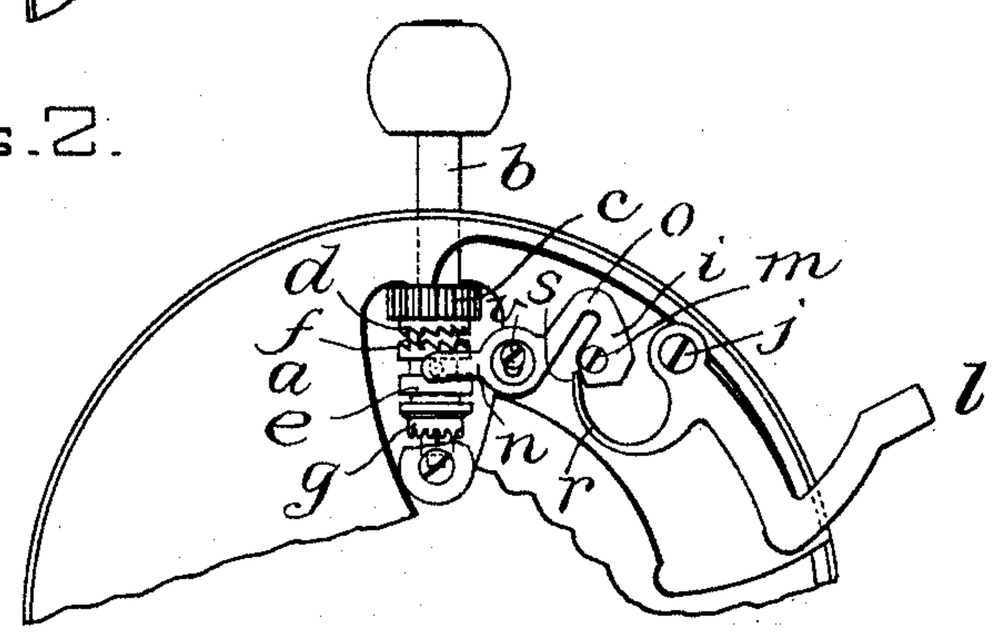
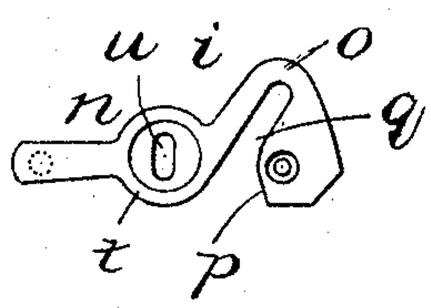


FIG. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

OLOF OHLSON, OF WALTHAM, MASSACHUSETTS.

STEM WINDING AND SETTING WATCH.

SPECIFICATION forming part of Letters Patent No. 587,158, dated July 27, 1897.

Application filed July 23, 1896. Serial No. 600,297. (No model.)

To all whom it may concern:

Be it known that I, OLOF OHLSON, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Clutch-Shifting Devices for Watches, of which the following is a specification.

This invention has relation to watches of the class known as "stem-winding" and "stem-setting," and relates more particularly to the means for shifting the clutch mechanism from the winding devices to the setting devices, and vice versa.

The object of the invention is to provide a shifting device which shall be constructed of the fewest possible number of parts and in such way that the clutch will be held yieldingly in engagement either with the winding or setting devices.

Another object of the invention is to provide a shifting device which may be employed with watches of different sizes and of different styles or with different-shaped cases.

To these ends the invention consists of the shifting device which I shall hereinafter describe in detail, and then point out in the claims which are hereto appended.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 illustrates a portion of a supporting-plate of a watch, the winding-bar, with the clutch mechanism sliding thereon, and my improved device for shifting the clutch from the winding device to the setting device, or vice versa, the clutch being illustrated as in engagement with the winding device. Fig. 2 is a similar view, in which the shifting lever is illustrated as having been operated to throw the clutch mechanism into connection with the setting device. Fig. 3 is a detail view of one of the levers.

Referring to the drawings, *a* indicates the supporting-plate of the watch, the winding-bar being designated by *b*. Upon the winding-bar is loosely mounted the winding-pinion *c*, by means of which the mainspring is wound up after it has become relaxed, and which is provided on its inner face with teeth *d*. Keyed upon the winding-bar *b*, so as to turn therewith, but to slide longitudinally thereon, is a clutch *e*, having teeth at *f* to engage the teeth *d* of the pinion *c* and having at the other end teeth *g* for engaging a rotating winding-pinion. (Not shown.)

When the clutch is in engagement with the pinion *c*, the rotation of the winding-bar *b* will effect the winding of the mainspring, (not shown,) and when the clutch is shifted to the position shown in Fig. 2 a similar rotation of the winding-bar will effect the setting of the hands of the watch. These parts are old and well known, and I lay no claim to the same.

I will now describe my improved device for shifting the clutch *e* from the winding-pinion to the setting-pinion, and vice versa.

The supporting-plate *a* is slightly recessed to receive the shifting lever *h* and the clutch-lever *i*. The shifting lever is pivoted close to the periphery of the supporting-plate by a screw *j* and is crooked, as shown—that is to say, it has a portion extending out through the bezel of the watch, so as to be grasped by the fingers, said outwardly-extending portion being designated by *l*.

The clutch-lever *i* is pivoted by a screw *m*, which is threaded into the supporting-plate *a* at a point between the screw *j* and the clutch *e*. The clutch-lever *i* is pivoted by a screw *m*, which is threaded into the supporting-plate *a* at a point between the screw *j* and the clutch *e*. The said clutch-lever is of a peculiar shape—that is say, it has a portion *n* lying in a line projecting from the screw *m* to the clutch *e* and with a U-shaped portion *o* at an acute angle to the said portion *n*. The inner edge of the U-shaped portion *o* is inclined, as at *p*, upon one side of the pivot *m*, there being an inclined edge *q* on the other side of the pivot *n* at an angle to the said inclined edge *p*. Thus it will be seen that pressure applied upon the inclined edge *p* upon one side of the pivot *m* will thrust the clutch-lever in one direction, and pressure applied to the inclined edge *q* on the other side of the pivot *m* will throw the clutch-lever in the opposite direction.

For applying pressure first to the inclined edge *p* and then to the inclined edge *q* I employ a curved spring *r*, projecting out from

the shifting lever *h* and having its end adapted to pass into the recess formed by the U-shaped portion *o* of the clutch-lever. The spring is so formed that only its extreme end rests upon the clutch-lever.

When the levers are in the position illustrated in Fig. 1, the end *s* of the spring *r* presses against the inclined edge *q* of the clutch-lever *i* and thrusts the clutch *e* into engagement with the pinion *c*, the said spring holding the last-mentioned parts in engagement by a yielding pressure. If the end *l* of the shifting lever be grasped by the fingers and be drawn outward away from the bezel of the watch, the end *s* of the spring will ride up the inclined edge *q*, and as the said inclined edge *q* is not concentric with the circle described about the pivot *j* the pressure of the spring upon the said inclined edge *q* will increase as the end *s* approaches the juncture of the edges *p* and *q*. As soon, however, as the end *s* passes the junction of the edges *p* and *q* and rests upon the edge *p* its pressure shifts the clutch-lever about the pivot *m* and throws the clutch *e* into engagement with the setting device, where the said clutch is likewise held by a yielding pressure.

It will be observed that the inclined edge *q* is longer than the inclined edge *p*. It is formed in this way to adapt the shifting lever to bezels of different widths, since by having a long incline the end *l* of the shifting lever may be drawn out to a considerable extent without effecting the engagement of the clutch.

In order to limit the movement of the clutch-lever, it is swelled, as at *t*, and provided with a transverse slot *u*, through which a screw *v* is threaded into the supporting-plate.

By employing the shifting devices which I have described I am enabled to attain several important results. They may be employed upon watches of different sizes and having bezels of different widths. The clutch mechanism is held in engagement with the winding devices or the setting devices by a yielding pressure, and while the clutch-lever is shifted with great accuracy at the same time such shifting is accomplished by a spring-pressure, whereby the shifting lever may be moved to its fullest extent without breaking any of the parts should the clutch or clutch-lever be prevented from movement by an obstruction of any kind.

There are numerous other advantages to which I might refer, but which are unnecessary to be set forth at length, inasmuch as they will be apparent to any one skilled in the art to which this invention relates.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. A device for shifting a clutch from the winding devices of a watch to the setting devices, or vice versa, comprising a clutch-lever and a shifting lever having a yielding portion bearing upon the clutch-lever so as to hold it yieldingly in either one of two positions, irrespective of any springs bearing upon either of the said levers.

2. A device for shifting a clutch for the winding devices of a watch to the setting devices, or vice versa, comprising a clutch-lever pivoted to the supporting-plate and having two inclined edges one on either side of the clutch-lever pivot, and a shifting lever formed with a spring having its end arranged to bear on either of said edges and hold said clutch-lever in either of two positions.

3. A device for shifting a clutch from the winding devices of a watch to the setting devices, or vice versa, comprising in its construction, a clutch-lever having a U-shaped portion with two edges inclined to each other, and a shifting lever having a spring-arm with its end resting against either of said inclined edges, said end being adapted to enter into the recess formed by the U-shaped portion.

4. A device for shifting a clutch from the winding devices of a watch to the setting devices, or vice versa, comprising in its construction a clutch-lever having a straight portion and a U-shaped portion at an angle to the straight portion and also having a short inclined edge and a long inclined edge, and a shifting lever having a curved spring whose end is adapted to extend into the recess formed by the curved portion and to rest upon either of the inclined edges.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 16th day of July, A. D. 1896.

OLOF OHLSON.

Witnesses:
J. H. SNOW,
E. A. MARSH.