

O. OHLSON.
WINDING INDICATOR FOR TIMEPIECES.
APPLICATION FILED OCT. 6, 1910.

1,038,634.

Patented Sept. 17, 1912.

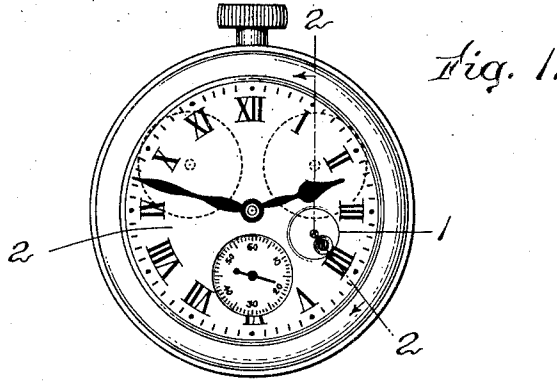


Fig. 1.

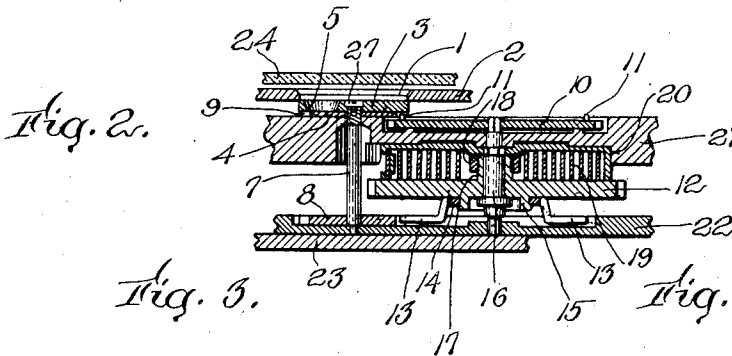


Fig. 2.

Fig. 3.

Fig. 4.

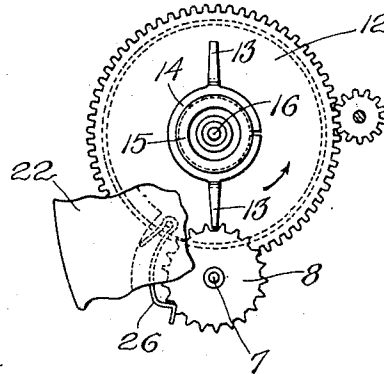
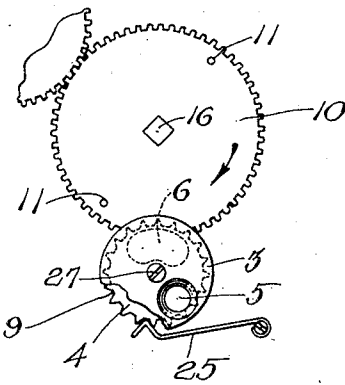
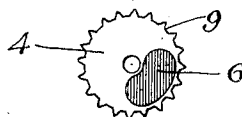


Fig. 5.



Witnesses:
P. W. Pizzetti
F. R. Paulstone

Inventor:
Olof Ohlson,
Wright & Brown, Lincoln, Mass.
by Charles F. Brown
Attorneys

UNITED STATES PATENT OFFICE.

OLOF OHLSON, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO WALTHAM WATCH COMPANY, OF WALTHAM, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

WINDING-INDICATOR FOR TIMEPIECES.

1,038,634.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed October 6, 1910. Serial No. 585,581.

To all whom it may concern:

Be it known that I, OLOF OHLSON, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Winding-Indicators for Timepieces, of which the following is a specification.

The present invention has for its object primarily to provide a winding indicator which may be applied to a time-piece wherein the main-wheel and the arbor, or other element by which the mainspring is wound, turn in the same direction of rotation without requiring the interposition of devices for producing a reversal in the direction of movement of the indicator when the spring is being wound up and is running down, respectively.

A secondary and equally important object from a practical point of view, is to simplify the indicator to the last possible degree and reduce the number of its parts to the lowest terms, whereby it may be made at slight cost and applied to any watch or clock movement of the character above indicated without necessitating material modification of any of the parts of the movement.

Stated in other words, my object has been to make an indicator in which the parts corresponding or equivalent to a pointer and dial are both movable in the same direction, one of them being moved when the spring is wound up, and the other by the main-wheel while the spring is running down.

The manner in which the invention has been carried into effect is described in detail in the following specification and illustrated in the accompanying drawings, in which,

Figure 1 represents a face view of a watch or clock showing the interior through an opening in the dial thereof. Fig. 2 is a sectional view of the movement of the time piece taken on the line 2—2 of Fig. 1. Fig. 3 is a plan view of the interior showing the means by which the same is actuated when the spring is wound up, the dial of the time piece having been removed. Fig. 4 is an under plan view of the parts which actuate the interior when the time piece is running down. Fig. 5 is a plan view of one of

the members or disks composing the interior.

In the embodiment of the invention shown in Fig. 1, the indicator is represented as being visible through an opening 1 in the dial 2 of the timepiece. The indicator consists of two plates or disks 3 and 4 respectively, one of which, as 3, corresponds to a pointer, and the other, as 4, corresponds to a dial. The pointer member 3 has an opening 5 through which a portion of the face of the dial member 4 may be seen. The latter may be provided with indications or symbols of any desired character such as numbers indicating hours or days, but as here shown is a patch or spot 6 shown in Fig. 5 of a color contrasting markedly from that of the major portion of the disk, and contrasting also with the color of the face of the index disk 3. The manner in which the colored patch or spot is arranged with respect to the index opening 5 is such that when the color is seen through the opening the possessor of the time piece realizes that the necessity for winding is near, and when no color appears through the opening, or a color of different character appears, he is assured that either the spring is fully wound, or winding will not be necessary for some time at least.

The manner in which the members of the indicator are operated is as follows:—The disk 3 is rigidly secured upon a staff or arbor 7, which also carries rigidly fixed upon it and conveniently at its opposite end, a toothed wheel 8. The disk 4 is loosely mounted on the arbor 7 and is provided at its periphery with notches 9 by means of which the disk is turned when the spring is wound. The winding wheel 10 of the mainspring arbor carries one or more pins 11 (two being shown here) which are so arranged as to enter successive notches of the disk 4 when the spring is wound, turning said disk. Connected to the main wheel 12 of the movement of the timepiece is an arm 13 which is so arranged as to engage at each revolution with the teeth of the wheel 8 and turn the latter with the arbor 7 and disk 3 united thereto. In the embodiment of the invention here shown, the arm

13 is formed upon a split collar 14 which surrounds and grasps frictionally an annular rib 15 projecting from the under side of the main wheel and surrounding the main wheel arbor 16. The under edge of the annular rib is made to overlap the collar 14 somewhat, to prevent the latter from falling off.

The main wheel arbor and the winding wheel or ratchet represented herein are of one of the standard and well-known forms, the main wheel being arranged to rotate upon the arbor and having a hub 17 carrying a collar 18 to which one end of the main spring 19 is hooked. The other or outer end of the main spring is caught over a hook formed on the side of the main spring barrel 20, which latter is engaged non-rotatively with the arbor 16. The winding wheel or ratchet 10 is also non-rotatively engaged with the arbor and is held from rotation, except in a direction necessary to wind the spring, by the usual click, not shown.

The arbor 7 carrying the indicator and its actuating wheel 8 is journaled in the top and bottom plates 21, 22 of the movement, the index disks lying upon the upper side of the top plate and the actuating wheel 8 being in a recess in the upper side of the bottom plate. The numeral 23 in Fig. 3 designates the back of the timepiece and 24 the crystal.

The manner in which the indicator acts is as follows: Supposing that the timepiece has run down. The colored patch 6 is then visible through the index aperture 5. Upon winding up the spring the disk 6 is turned step by step by repeated impacts of the pins 11 until the colored part has been moved away from beneath the aperture. As the movement runs down the arm or arms 13 carried by the main wheel rotate the wheel 8 step by step and move the disk 3 correspondingly in the same direction until finally its aperture again uncovers and exposes the colored spot.

The number of pins 11, of arms 13, and of teeth and notches in the peripheries of the disks 4 and 8 may be made anything required to give the results desired, whether to indicate a running down of the timepiece every twenty-four hours, or after any predetermined number of days. The timepiece herein illustrated is an 8-day watch or small clock, and is so proportioned that the indicator shows the color under the aperture 5 when the watch has run eight days. It is obvious, however, that changes in the number of pins, arms and teeth, and in the diameters of the toothed disks may be made of any character necessary to secure other results, without departing from the spirit of the invention.

The disk 4 is retained against accidental displacement by any suitable means such as a spring or spring pawl 25 which is sufficiently yielding to enable the disk to be turned by the pins 11. Similarly the wheel 8 is yieldingly retained by the spring pawl 26. Prevention of relative rotation between the disk 3 and wheel 8 at opposite ends of the arbor 7 is secured by the manner in which the disk is detachably connected with the arbor, the end of which is non-circular and enters a correspondingly shaped hole in the disk, being secured therein by a screw 27, as shown in Fig. 2. Detachment of this disk is necessary in order to enable the parts to be assembled in the watch or clock movement, and removed. The toothed wheel 8, however, is permanently fixed upon the arbor.

The disks 3 and 4 which form the tell-tale members of the indicator, one of them having an aperture and the other a colored patch, constitute one special form of the common pointer and dial indicator. Obviously there would be no departure from the spirit of the invention if a pointer were substituted for the disk 3 with its aperture, and a graduated, numbered or lettered dial for the disk 4. It would also be no departure from the spirit of the invention to reverse the relative arrangement of the disks 3 and 4 as to their mode of drive, having the disk 4 fixed upon the arbor 7 and driven by the main wheel, and the disk 3 loose on said arbor and driven by the winding wheel 10. I consider, therefore, that such possible modifications are within the spirit and scope of my invention, and are covered by such of the claims which follow as do not specify the particular form and arrangement hereinbefore described and illustrated.

I claim,—

1. A time piece comprising an arbor, a pointer disk fast on one end thereof and provided with a sight opening, an indicator disk loose on the arbor and provided with indicating means adapted to be displayed through the pointer disk opening, said indicator disk being provided with peripheral teeth, a toothed wheel fast on the opposite end of the arbor, a winding wheel provided with lugs for engaging the teeth of the indicator disk to intermittently rotate said disk, and a main wheel provided with arms for engaging the teeth of the toothed wheel to intermittently rotate the arbor.

2. The combination in a time piece, of a movement therefor including a main arbor, a winding wheel carried thereby, a main wheel on the arbor and provided with a pendent annular rib, a split collar seated on said rib and provided with an outwardly

projecting arm, and a winding indicator
comprising a supporting arbor, an indicator
member fast thereon, a second indicator
member loose on the supporting arbor and
5 intermittently rotated by a winding wheel,
and a wheel fast on the supporting arbor
and intermittently rotated by the said arm.

In testimony whereof I have affixed my
signature, in presence of two witnesses.

OLOF OHLSON.

Witnesses:

E. A. MARSH,
CONOVER FITCH.