No. 891,084. PATENTED JUNE 16, 1908.

W. J. LARKIN.

ALARM CLOCK.

APPLICATION FILED APR. 20, 1908.

Fig 1.

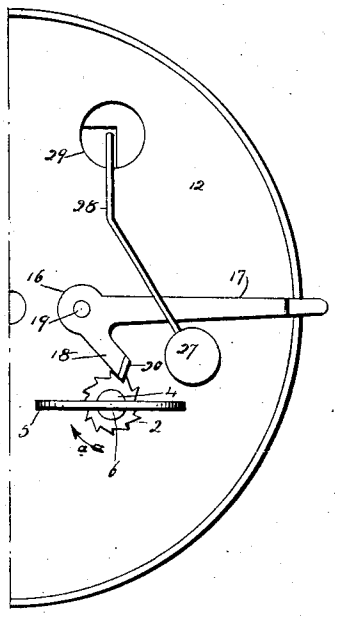


Fig 2

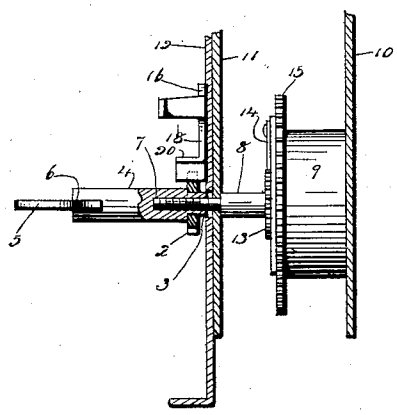


Fig 6.

Fig 4

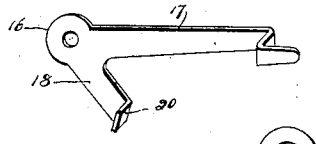


Fig 5

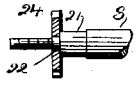


Fig 3

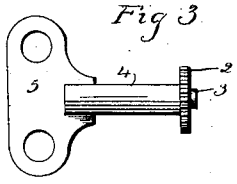
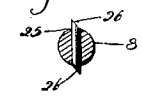


Fig 7.



Witnesses
C. J. Reed.
C. L. Reed

William J. Larkin
Inventor
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Attys

UNITED STATES PATENT OFFICE.

WILLIAM J. LARKIN, OF WATERBURY, CONNECTICUT, ASSIGNOR TO WATERBURY CLOCK CO., OF WATERBURY, CONNECTICUT, A CORPORATION.

ALARM-CLOCK.

No. 891,084. Specification of Letters Patent. Patented June 16, 1908.

Application filed April 20, 1908. Serial No. 428,229.

To all whom it may concern:

Be it known that I, WILLIAM J. LARKIN, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Alarm-Clocks; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a view in rear elevation of an alarm mechanism constructed in accordance with my invention. Fig. 2 a broken sectional view thereof. Fig. 3 a detached view in side elevation of the alarm key. Fig. 4 a detached perspective view of the alarm switch. Fig. 5 a broken view of the rear end of a modified form of the winding arbor provided with a cut-off wheel represented in section. Fig. 6 a detached plan view of the said wheel. Fig. 7 a detailed sectional view showing the winding arbor as provided with a transversely arranged pin having projecting beveled ends.

My invention relates to an improvement in alarm clocks, the object being to guard against the failure of the alarm to "go off" due to the neglect of the user of the clock to throw off the alarm-switch at the time of winding the alarm spring—something that often happens in the use of alarm clocks as at present constructed.

With these ends in view, my invention consists in the combination with the winding-arbor of an alarm-mechanism, of an alarm-switch and means rotating with the winding arbor for co-action with the switch to throw the same off when the winding arbor is turned for winding the alarm spring.

My invention further consists in certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention as shown in Figs. 1 to 4 inclusive, I employ what, for want of a better term, I shall call a "throw-off" wheel 2 which is rigidly mounted upon a short stem 3 formed by reducing the counterbored and threaded end of the body 4 of the alarm-key which, as shown, is provided with a sheet metal bow 5 set into a longitudinal slot 6 in the outer end of the said body. This key is adapted by its threaded counterbore to be applied to a threaded stem 7 formed at the projecting outer end of the winding-arbor 8 of the alarm-spring 9 forming a part of an ordinary alarm-mechanism which needs neither illustration nor description. The arbor 8 is journaled between the front and rear movement plates 10 and 11 and projects at its rear end through the disk-shaped sheet-metal back 12 of the clock case. A ratchet wheel 13 rigidly secured to the arbor coacts with a pawl 14 carried by the first or main wheel 15 of the alarm train. An alarm switch 16 having a long arm 17 and a short arm 18 is pivotally mounted upon a pin 19 in the back 12 of the clock-case in position to bring the beveled rearwardly turned stop-finger 20 of its short arm 18 into position to coact with the teeth of the wheel 2 so that when the wheel is turned with the key from left to right in the direction of the arrow *a* as required for winding the alarm spring 9, the teeth of the throw-off wheel 2 will coact with the finger 20 of the arm 18 so as to swing the switch 16 bodily on its pivot 19 into its retired position in which its stop-finger 20 will be cleared from the teeth of the wheel 2 so that the winding arbor 8 will be free to rotate in the opposite direction when the alarm train is let off. It will be apparent, therefore, that supposing the switch to be "on" at the time of winding the alarm-spring 9, it will be impossible to wind the said spring without moving the switch into its retired position, making it unnecessary to remember to throw off the switch at the time of winding the alarm-spring as the switch is thrown off automatically, as it were, by the very act of winding the alarm spring without in any way interfering with the use of the switch to shut off the sounding of the alarm at any time.

Instead of mounting the throw-off wheel 2 upon the key it may be mounted directly upon the winding arbor as shown in Figs. 5 and 6 in which the winding arbor 8 has its rear bearing 21 flattened at its projecting outer end as at 22 to conform to an elongated opening 23 in the throw-off wheel 24 which would then coact with the switch precisely as described for the throw-off wheel 2. Or instead of employing a throw-off wheel as a means of utilizing the winding rotation of the winding arbor to automatically throw off the switch, I might use a pin 25 passed transversely

through the winding-arbor 8 and having its projecting ends 26 beveled to co-act with the stop-finger of the alarm switch. In case the pin 25 is employed, the switch would probably be arranged on the inside of the back 12 of the clock case, but it would then function precisely the same as the throw-off wheel with the difference that the switch might not be thrown into its retired position until the winding arbor had been rotated for a half turn. As shown the bell hammer 27 is carried by a hammer wire 28 projecting through an opening 29 in the back 12. The switch is manually operated in any case by its long arm 17 for causing its short arm to engage with the throw-off wheel 2 or 24 or pin 25 so as to stop the unwinding rotation of the winding arbor 8 and hence stopping the alarm-train and the sounding of the alarm.

I claim:—

1. In an alarm clock, the combination with the winding arbor of the alarm mechanism, of a switch, and means rotating with the said arbor for coaction with the said switch to throw the same off when the arbor is rotated to wind the alarm-spring.

2. In an alarm clock, the combination with the winding arbor of the alarm mechanism, of a switch, and a throw-off wheel rotating with the winding arbor and coacting with the switch for throwing the same off when the arbor is rotated by its key for winding the alarm spring.

3. In an alarm clock, the combination with the winding arbor of the alarm mechanism, of a switch, a key applied to the projecting rear end of the said arbor, and means located upon the key for coacting with the switch to throw the same off when the key is rotated in the direction required for winding the alarm spring.

4. In an alarm clock, the combination with the winding arbor of the alarm mechanism, of a switch, a key applied to the said winding arbor, and a throw-off wheel mounted upon the key and coacting with the said switch for throwing the same off when the key is turned for winding the alarm-spring.

5. In an alarm clock, the combination with the winding arbor of the alarm mechanism, of a pivotal switch having a long and a short arm, the latter being provided with a stop-finger, and means rotating with the said winding arbor for coacting with the said stop-finger for stopping the rotation of the arbor in one direction and for throwing off the switch when the arbor is turned by its key for winding the alarm spring.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WILLIAM J. LARKIN.

Witnesses:
CLIFFORD H. HALL,
CLEMENT I. GRIGGS.