

G. W. ROBINS.
 TIME INDICATOR.
 APPLICATION FILED JUNE 30, 1909.

989,807.

Patented Apr. 18, 1911.

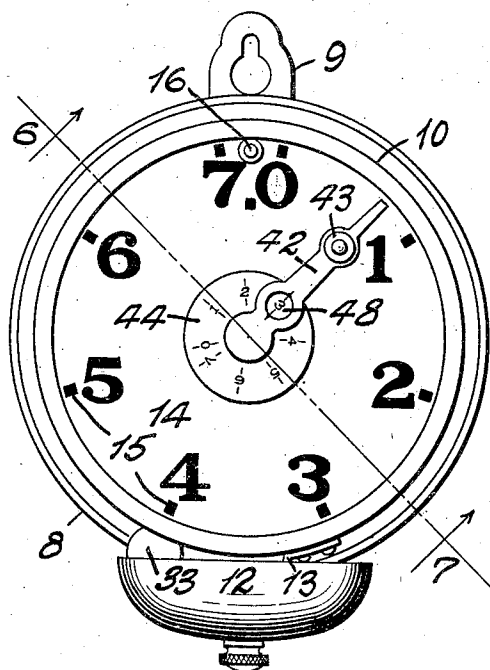


FIG. 1.

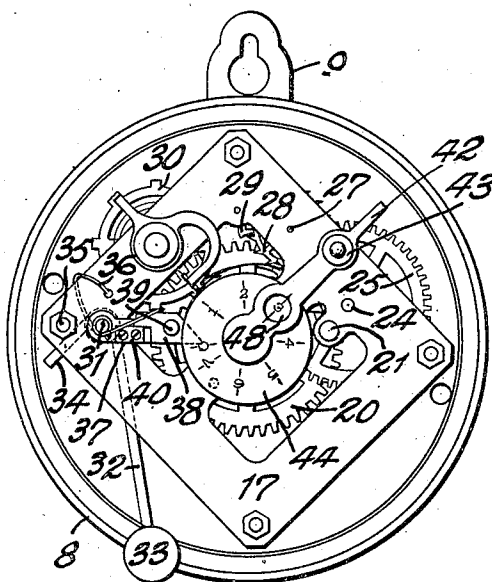


FIG. 2.

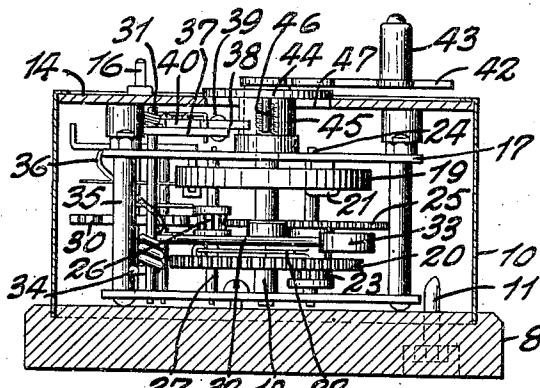


FIG. 3.

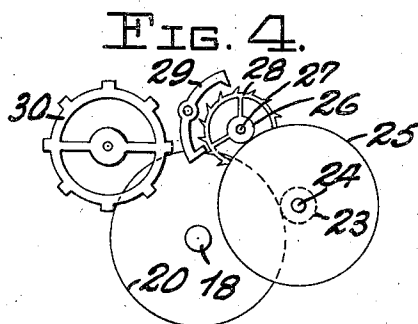


FIG. 4.

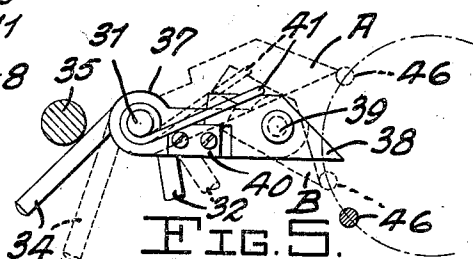


FIG. 5.

WITNESSES
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GUY W. ROBINS, OF LYSTER, QUEBEC, CANADA.

TIME-INDICATOR.

989,807.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed June 30, 1909. Serial No. 505,150.

To all whom it may concern:

Be it known that I, GUY W. ROBINS, of the village of Lyster, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Time-Indicators, and do hereby declare that the following is a full, clear, and exact description.

This invention relates to improvements in time indicators and the main object is to provide a device which will measure off certain predetermined intervals of time and will give an audible warning prior to the termination of such intervals.

A further object is to provide a device which may be adjusted to give a signal at the ends of periods of time of varying length.

To accomplish the above objects I provide a clock-work adapted to move an indicating hand around the clock face. A setting dial is mounted on the hub of the hand and is provided with a post adapted to trip a bell hammer to give an audible signal.

In the drawings which illustrate my invention:—Figure 1 is a front elevation of the device showing the relation of the face, setting dial and hand. Fig. 2 is a view similar to Fig. 1 but with the casing removed to disclose the operating mechanism. Fig. 3 is a sectional view of the indicator on the line 6—7 of Fig. 1. Fig. 4 is a diagram of the gear train. Fig. 5 is an enlarged detail view of the hammer tripping mechanism.

In the above defined figures 8 designates a base of any suitable material provided with a hanger 9. A casing 10 is fixed to the base by means of bolts or screws 11, the edge of the casing being preferably embedded in the material of the casing, as shown in Fig. 3, in order to render the casing rigid and dust-proof. A bell or gong 12 is supported below the casing on a suitable post 13. The face 14 of the indicator is divided into any desired number of divisions of equal length by lines or dots 15, said divisions being numbered consecutively from the stop pin 16 around the face to the right, so that the stop pin lies between the first and last numbers. Within the casing is a clock-work compris-

ing a framework 17, a main shaft 18 having thereon the spiral spring 19 and driving gear 20, the outer end of the spring being fixed to the pin 21 in the usual manner, and the driving gear being provided with the usual ratchet and pawl arrangement, indicated at 22, for winding up the spring without reversing the direction of rotation of the gears. The driving gear 20 meshes with a pinion 23 mounted on the same shaft 24 as the gear 25. The gear 25 meshes with the pinion 26 mounted on the shaft 27 carrying the escapement wheel 28. The escapement lever and balance wheel are designated 29 and 30 respectively. A shaft 31 is mounted in the framework 17, parallel with the above mentioned shafts, and carries a wire or lever 32 to one end of which the hammer 33 is fixed. The opposite extremity 34 of the lever 32 projects beyond the shaft 31 so as to engage one of the posts 35 of the framework 17. The angle between the body of the lever 32 and the extremity 34 thereof is adjusted so that when the extremity 34 is in engagement with the post 35 the hammer 33 will be held just clear of the bell 12, in order that when the same is struck by the hammer the hammer will not remain in contact with the bell and deaden the sound thereof, as is well known. A small spring 36 is provided to actuate the hammer to strike the bell if the device should not be in a position to allow the hammer to fall by gravity. The upper end of the shaft 31 carries a fixed trip lever 37 having a beveled tip 38 pivoted thereto at 39. A small stop 40 is fixed to the trip lever 37 whereby the tip 38 is limited to movement in one direction. A spring 41 is fixed to the shaft 31 and operates to maintain the tip 38 normally in line with the lever 37. An indicating hand 42 is secured to the end of the main shaft 18, preferably by a left hand thread as the lever is also used as a lever for winding up the clock-work, a small handle 43 being provided to facilitate the operation. A small dial 44 is mounted on the hub of the hand by means of a collar 45 fixed to the dial. The collar 45 is a very tight fit on the hub of the hand so that under ordinary cir-

cumstances the dial will revolve with the hand, but may be revolved independently thereof if sufficient force is used. A post 46 is fixed to the dial 44 and projects downwardly through an aperture 47 in the face. The dial is spaced and numbered to correspond exactly with the spacing and numbering of the face, and a small aperture 48 is provided in the hand through which the numbers on the dial may be read and any one of them alined with the hand whereby the post 46 will bear a known relation to the hand.

The operation of the device is simple and will be easily understood from the foregoing description. The clock-work is wound by moving the hand 42 to the left until it comes in contact with the pin 16. If it is desired that the bell should ring just prior to the end of a three minute interval of time the dial is rotated about the hand until the numeral "3" shows through the opening 48. When released, the dial moves with the hand and the post 46 travels in a circular arc until it comes in contact with the flat side of the tip 38 of the trip lever 37. The opposite end of the tip 38 rests against the stop 40 so that the trip lever moves with the tip 38 and post 46 revolving the shaft 31. The hammer lever 32 is fixed to the shaft 31 and moves therewith raising the hammer 33 until the parts assume the position shown in dotted lines at A, Fig. 5, when the tip 38 slips off the post 46 allowing the hammer 33 to drop by gravity or by the impulse of the spring 36 and strike the bell 12. Just before the hammer strikes the bell the extremity 34 of the hammer lever engages the post 35 of the framework but the momentum of the hammer 33 springs the lever 32 sufficiently to allow the hammer to hit the bell. The reflex motion of the lever 32 withdraws the hammer from contact with the bell so that the vibrations and consequent sound of the same are not deadened. The hand continues in motion, carrying the dial with it, until, it comes in contact with the stop pin 16 which arrests its motion and stops the clock-work. When returning the hand to its original position to wind the clock-work it is obvious that the post 46 on the dial will again engage the tip 38 of the trip lever 37. On this return movement the post 46, engages the beveled side of the tip 38 and the tip turns on its pivot 39 sufficiently to allow the post to slide along the beveled side, as shown in dotted lines at B, Fig. 5. After the post 46 has passed the tip 38 and released the same the spring 41 returns the tip to its original position.

The instant at which the bell rings prior to the termination of any of the periods of

time within the scope of the device is determined by the relation of the post 46 to the divisions of the dial. A secondary dial may be employed having a scale divided for seconds whereby the dial 44 may be shifted independently of the post 46 to set the device "fast" or "slow" any desired amount in order that the interval of time between the ringing of the bell and the termination of the period of time may be shortened or lengthened at will and the bell made to ring before or after the termination of such period. While I have shown the face and dial divided into seven spaces it is obvious that this division may be varied as desired and the ratio of the gears of the clock-work altered accordingly.

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

1. A device of the character described comprising the combination with a clock mechanism having a casing therefor, of a face having a series of numbered divisions thereon, a stop pin mounted on the face, a lever rotated in one direction by the clock mechanism and adapted when rotated in a reverse direction to wind the clock mechanism, a dial mounted on the hub of said lever and revoluble with said lever, said dial having a series of divisions corresponding with the divisions on said face, a pin projecting from said dial, a signal bell carried by the casing, and means operated by said lever for actuating the signal bell at predetermined intervals, substantially as described.

2. A device of the character described comprising the combination with a clock mechanism having a casing therefor, and a numbered face mounted in said casing, of a hand lever carried by the clock mechanism and adapted when rotated in one direction to wind the clock mechanism, a numbered dial mounted on the axle of said lever and adapted to rotate with the clock mechanism, a pin projecting from said dial, a signal bell carried by the casing, a revoluble shaft, a hammer mounted thereon, a trip lever fixed to the shaft, a pivoted tip on said trip lever lying in the path of the dial pin, a stop on the trip lever, and means for actuating the hammer when the trip lever is released from the dial pin, substantially as described.

3. A time indicator comprising the combination with a clock mechanism having a casing therefor, a numbered face plate carried by said casing, a stop pin in said face plate, a hand lever carried by the clock mechanism, a numbered dial revoluble with said hand lever, said hand lever being adapted to wind the clock mechanism when rotated

in a reverse direction, a pin projecting from the dial, a signal bell carried by the casing, said hand lever being provided with an aperture above the dial whereby said dial may be set to operate the signaling mechanism at predetermined intervals, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

GUY W. ROBINS.

Witnesses:

ALEXINA JONCAS,
G. W. BORLAS.