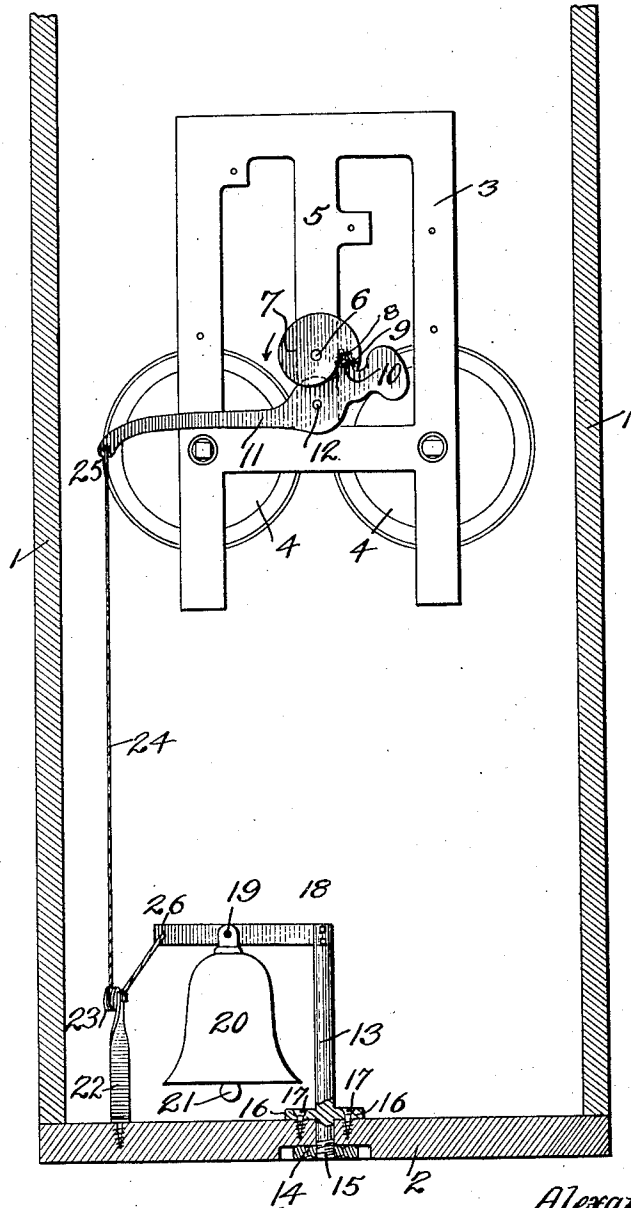


A. MANGANI.
CLOCK SIGNAL.
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1,054,580.

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Witnesses
E. H. Wagner
J. W. Kirkley

By

Beeler & Robb
H. C. Robb

Attorneys.

UNITED STATES PATENT OFFICE.

ALEXANDER MANGANI, OF DANBURY, CONNECTICUT.

CLOCK-SIGNAL.

1,054,580.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALEXANDER MANGANI, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Clock-Signals, of which the following is a specification.

The present invention relates to clock signals and has particular reference to a device comprising a bell or other audible signal, which is so connected with the minutes-shaft of a clock that the signal will be sounded a short time before the hour is struck by the striking mechanism of an ordinary clock.

The object of the present invention is to provide a device of this character which will serve to give warning to a person that the hour is about to be struck, the warning being given a few seconds before the exact moment at which the hour begins to strike, thus serving to attract the attention of the auditor so that he will have his attention directed to the striking operation, and will be able to count the strikes and ascertain the exact number of strikes. This feature is a valuable adjunct to a clock, inasmuch as during the night hours, it is often impossible for persons to ascertain exactly what hour was struck by the clock as their attention was not directed to the striking operation at the time it began.

For a full understanding of the present invention, reference is to be had to the following description and to the accompanying drawing which shows a vertical sectional view of the mechanism provided by my invention mounted in an ordinary clock case.

Referring particularly to the drawing, 1 indicates the side walls of a clock casing and 2 the bottom wall. 3 represents the metallic frame of an ordinary clock movement and 4 the time and gong springs. In the standard 5 of the frame 3, the minutes-shaft 6 is mounted, on an end of which, for the purposes of my invention, I mount a cam 7 of the particular form shown in the drawing. It will be seen that the cam is formed in the shape of an involute, it having a recess 8, one wall of which, designated 9, will be practically straight, as is clearly shown. The recess 8 is adapted to receive a pin 10, mounted on the upper side of a lever 11, which latter is pivoted to the standard 5 at 12. The lever 11 will be placed either slightly forward or slightly rearward of the

cam 7, it being shown in the latter position in the accompanying drawing, as is indicated by the dotted line portion of the lever, the only requirement being that the pin 10 shall be able to positively engage in the recess 8. To the bottom wall 2 of the clock casing, a standard 13 is fixed by means of a nut 14 engaging its lower threaded end 15, and the standard is further provided with side extensions 16 engaging the upper portion of the wall 2 through which the screws 17, also engaging the wall, pass. The standard 13 has attached to its upper end a spring 18 which may extend at substantially right angles from the standard, as is indicated in the drawing, but this relative position of the spring is not a necessary feature of my invention as it may be disposed in any desired position with reference to the standard. At a point 19 on the spring 18 is pivoted an audible signal 20 which is adapted to sound when a quick movement is imparted to the spring 18. In the accompanying drawing, I have represented this signal in the form of an ordinary bell, having a clapper 21. To the bottom wall 2, a second standard 22 is attached, said standard carrying a small pulley 23 of ordinary construction, and arranged at any suitable point on the standard. The latter should be made slightly yieldable so as to allow for a slight amount of play for the connecting means between the lever 11 and spring 18. In the preferred embodiment of the invention, I have represented this connecting means as a silk cord 24, which is attached to the lever 11 at 25, passes over the pulley 23, and is attached to the spring 18 at its outer end 26.

The operation of the invention is as follows: The spring 18 will be placed under tension so that it tends to move in an upward direction, thus placing the silk cord under tension and exerting a downward pull at all times on the end 25 of the lever 11. This will result in constantly maintaining the pin 10 in contact with the periphery of the cam 7 during the rotation of the latter. The cam will be mounted on the minutes-shaft so that the straight wall 9 of the recess 8 will come in alinement during its rotation with the pin 10 a few moments before the hour is struck by the striking mechanism of the clock. Assuming the pin to be at the point against the cam where the involute starts, the pin will be gradually pressed outwardly in distance from

the shaft 6, thus depressing that portion of the lever which is to the right of the shaft 12, and raising the opposite end 25, with the result that the spring 18 will be very slightly and gradually pulled downwardly at its outer end 26. As the cam continues its rotation, the pin 10 will be in its most downward position when it becomes exactly opposite the straight wall 9 of the recess, at which point, the pin will quickly slide along the wall 9 into the innermost portion of the recess 8, this action being caused by the fact that the spring 18 has been placed under tension and is released at the moment the pin enters the recess. The spring will thus move upwardly, with the result that the bell 20 will be given a sharp ring.

For the best operation of the device, it is preferable that the spring 18 shall be arranged somewhat to the rear of the standard 22 so that when a pull is exerted on the spring by the upward movement of the end 25 of the lever, the movement of the spring will be both downwardly and laterally with respect to the standard 22. By this means, the spring will be placed under torsion and the bell 20 will be sounded in a more positive manner.

Having thus described the invention, what is claimed as new is:

1. In combination with a clock having a minutes-shaft, a cam mounted on said shaft, a lever adapted to engage said cam, a spring connected with the clock casing, a bell mounted on said spring, and a connection between said spring and said lever whereby the spring is gradually placed under tension during each rotation of the cam, and whereby the tension of the spring will be relieved during a sudden movement of the lever with respect to said cam.

2. In combination with a clock having a minutes-shaft, a cam mounted on said shaft,

said cam being formed with a recess in its outer periphery, a lever pivoted adjacent to said cam, said lever having a pin normally in engagement with the periphery of said cam and adapted to move into said recess during the rotation of the cam, a spring connected with the clock casing, a bell mounted on said spring, and a cord connecting said spring with said lever, whereby the spring will be placed under tension gradually as said pin is moved outwardly with respect to the minutes-shaft and will be released from its tension when said pin falls into said recess in position for repeated operation, the arrangement being such that the bell is sounded at the time of said release.

3. The combination with a clock having a minutes-shaft, an involute cam mounted on said shaft, said cam having a recess formed in its periphery, a lever pivoted adjacent to said cam and provided with a pin adapted to engage the periphery of the cam and to fall into said recess during the rotation of the cam, a standard mounted in the clock casing, a spring extending outwardly from said standard, a bell mounted on said spring, a pulley, and a cord connecting one end of the spring with one end of said lever, the arrangement being such that the spring is gradually placed under tension as said pin is moved outwardly with respect to said shaft, and will be released from said tension when said pin falls into said recess in position for repeated operation, said bell being adapted to be sounded at the time of such release.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER MANGANI.

Witnesses:

ARLENE B. DUNAWAY,
EMMA S. BENEDICT.