(No Model.)

A. F. ROCKWELL.

DOOR OR ALARM BELL.

No. 414,124. Patented Oct. 29, 1889.

Fig. 1.

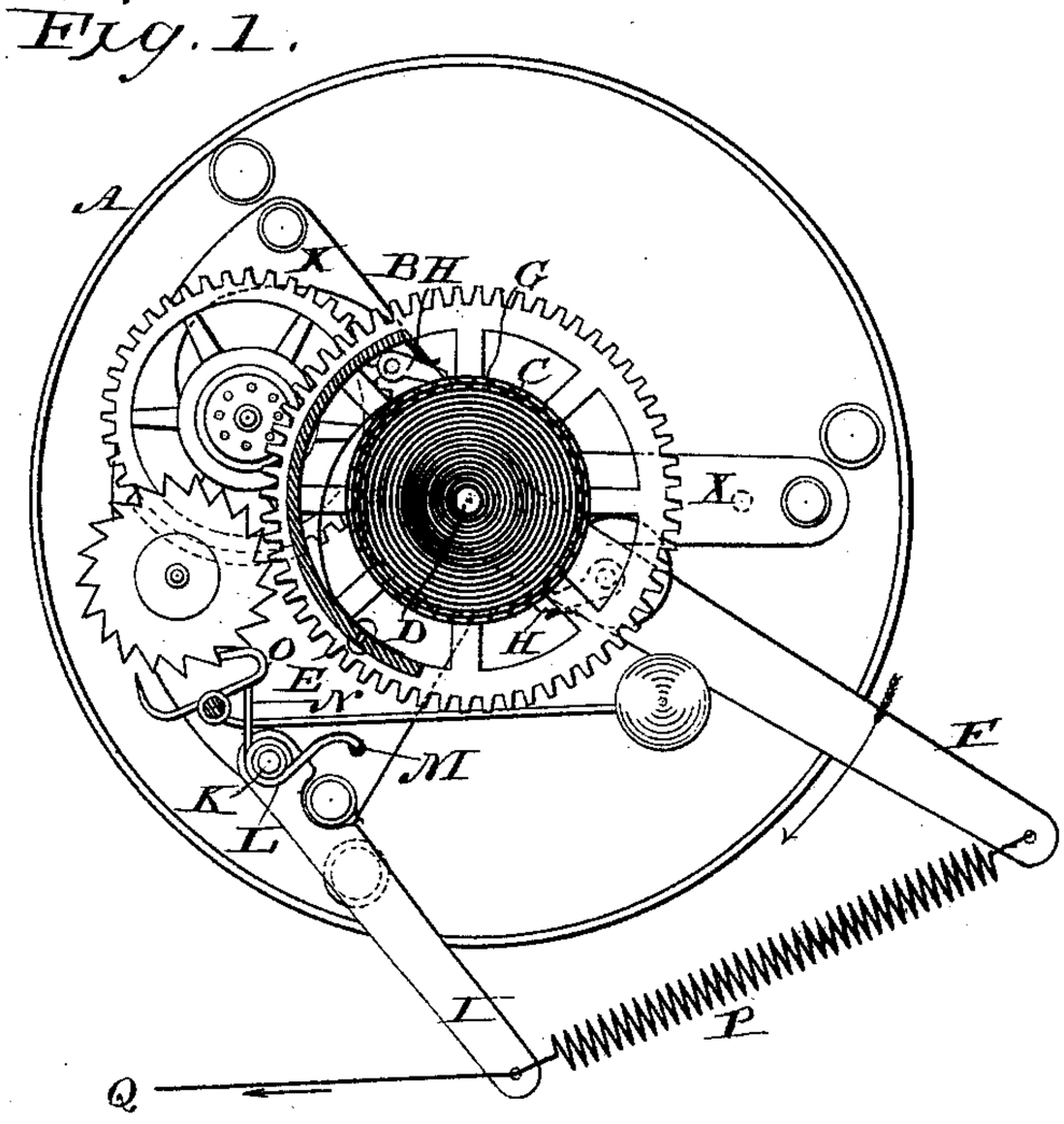
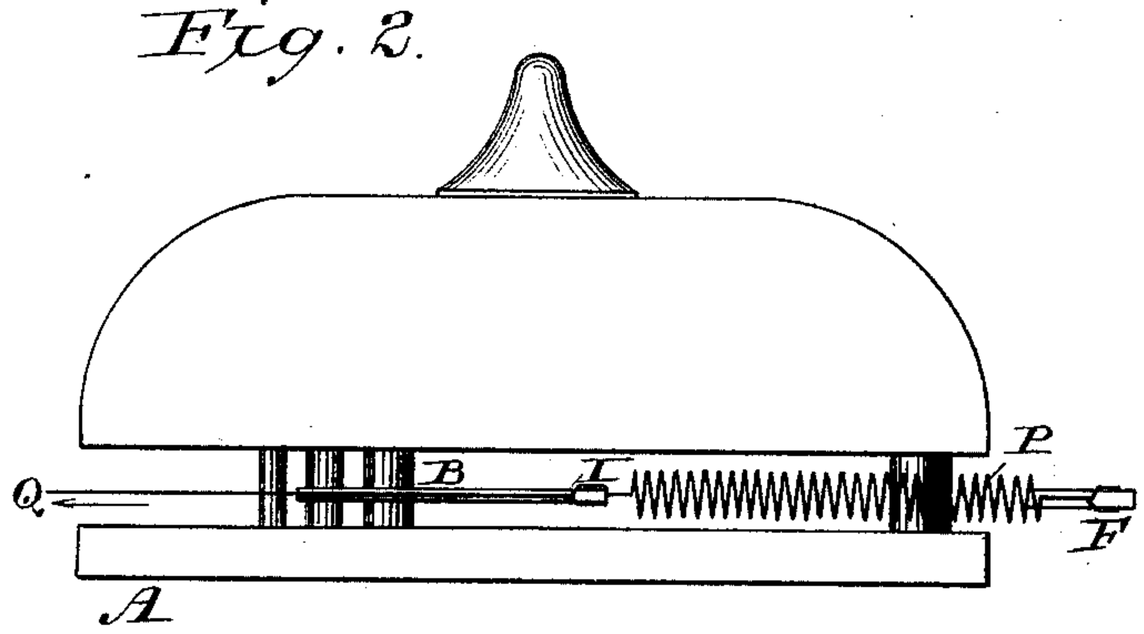


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT F. ROCKWELL, OF BRISTOL, CONNECTICUT, ASSIGNOR TO THE NEW DEPARTURE BELL COMPANY, OF SAME PLACE.

DOOR OR ALARM BELL.

SPECIFICATION forming part of Letters Patent No. 414,124, dated October 29, 1889.

Application filed June 26, 1889. Serial No. 315,629. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. ROCKWELL, of Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Door or Alarm Bells, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to that kind of door-bell or alarm-bell for bicycles or other purposes that is provided with an alarm-movement having a mainspring that winds up and that operates by releasing the movement and permitting it to run down and cause a clattering sound, like that of an electric bell, as long as the pull upon the bell-cord or the release of the alarm-movement by any other means is continued.

My improvements consist in providing such a door-bell or alarm-bell with means for winding it up by the pull of a bell-wire or other force, which releases and permits the alarm-movement to operate by the force of the mainspring.

Heretofore in door-bells, bicycle-bells, &c., of this class it has been necessary occasionally to wind up the mainspring of the alarm mechanism, because in frequent use it will soon expend its force and the alarm-movement will run down. To obviate the necessity of special winding of the mainspring, I have by my invention, as stated, provided for winding it automatically or by means of the same force which releases the alarm-movement and causes it to sound.

In the accompanying drawings, illustrating my invention, Figure 1 is a top view of the alarm mechanism with the bell and part of the frame of the alarm mechanism removed. Fig. 2 is a side elevation.

Referring to the letters upon the drawings, A indicates a suitable frame containing an ordinary alarm mechanism B, of which C is the mainspring, secured at one end to the arbor D and at the other to the main wheel E of the alarm-movement.

F indicates a lever pivoted to the mainspring-arbor or to the frame in such relation to the ratchet-wheel G, which is fixed to the arbor, as to operate the spring-pawl H, pivoted to the lever, and cause the mainspring to be wound up whenever the lever is tilted in the direction of the arrow.

H′ indicates another spring-pawl, which serves to retain the tension of the mainspring as it is wound in the usual manner.

I indicates another lever pivoted to the frame by means of a pivot-post K. This post is provided with a coiled spring L, secured to it at one end and at the other secured to the frame at M. An arm N projects from the post K against some moving part of the alarm mechanism—for example, in this instance, the verge O. The coiled spring L tends to keep the post K, the arm N, and lever I turned into the position shown in Fig. 1, so that the arm N forms a stop that bears against the verge and prevents the alarm-movement from sounding.

X is a disk or plate to support the mechanism.

P indicates a wire cord or link, preferably a coil of wire, connecting the free ends of the two levers, and Q indicates an ordinary pull-bell wire. When a pull is exerted upon this wire, the levers will be moved simultaneously in the direction of the pull, the arm N will be released from the verge, and the alarm will sound as long as the pull is continued, or at least until the mainspring has completely relaxed itself. At the same time that the arm N is released from the verge O the pawl upon the lever F will move the ratchet-wheel G part of a revolution, and, as that wheel is fixed to the mainspring-arbor, the mainspring will be wound up correspondingly. I thus provide for winding up the spring at the same time that I provide for releasing it.

In some cases it might happen that the mainspring would become entirely wound up, and if a rigid connection were employed between the free ends of the levers it might happen that there would not be play enough between the ratchet and pawl to permit the alarm-movement to be released by sufficient movement of lever I; but by employing an extensible or yielding connection between the ends of the two levers—such, for example, as a coil-spring or a rubber spring—it can never happen that the resistance to further winding of the mainspring will prevent the alarm-movement from being released, because the

pull upon the lever I, will always operate it sufficiently whether the lever F moves on its pivot or not.

As door-bells, bicycle-bells, and other species of call-bells or alarm-bells are usually run only momentarily, I find in practice that the ordinary force applied for ringing will wind up the mainspring, and thus keep the alarm-movement ready to be sounded, and no special winding is required. I thus secure a door-bell which is a perfect imitation of an electric bell, and which does not require batteries to be used and renewed or mainsprings to be specially wound up, but is always automatically wound and kept ready for use.

Instead of a pull-wire, any other means of applying force to operate the levers F and I may of course be employed without departing from the substance of my invention. Of course the mechanism for moving the stop and releasing the alarm-movement and the mechanism for winding up the mainspring might be modified formally to a great extent without departing from the substance of my invention, the material thing being to have two mechanisms simultaneously operating—one to release the alarm-movement and the other to wind up its mainspring.

What I claim is—

1. The combination, with an alarm-movement provided with a mainspring for operating it, of a stop for normally engaging with the movement and preventing its operation, mechanism for moving the stop, releasing the alarm-movement, and ringing the bell by the pull of the bell-wire, and mechanism having a yielding connection with the stop-releasing mechanism for winding up the mainspring by the pull that releases the alarm-movement, whereby the bell is caused to ring ordinarily as long as the pull upon the bell-wire is continued and is silenced by the discontinuance of the pull, like an electric bell, substantially as set forth.

2. The combination, with the alarm-movement provided with its mainspring, of the levers F and I, connected together at their free ends by a spring, the pawl and ratchet operated by the lever F to wind up the mainspring, and the pivot-post K, its spring L, and the arm N, arranged substantially as and for the purpose set forth.

3. The combination, with an alarm-movement having a mainspring for operating it, of a stop for normally engaging with the movement and preventing its operation, the lever F, operatively connected with the mainspring-arbor, so as to turn it and wind the mainspring, the lever I connected with the stop, so as to move it and release the alarm mechanism, and a yielding connection between the free ends of the levers, whereby the lever I may be operated without operating the lever F when the mainspring becomes fully wound, substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

ALBERT F. ROCKWELL.

Witnesses:
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