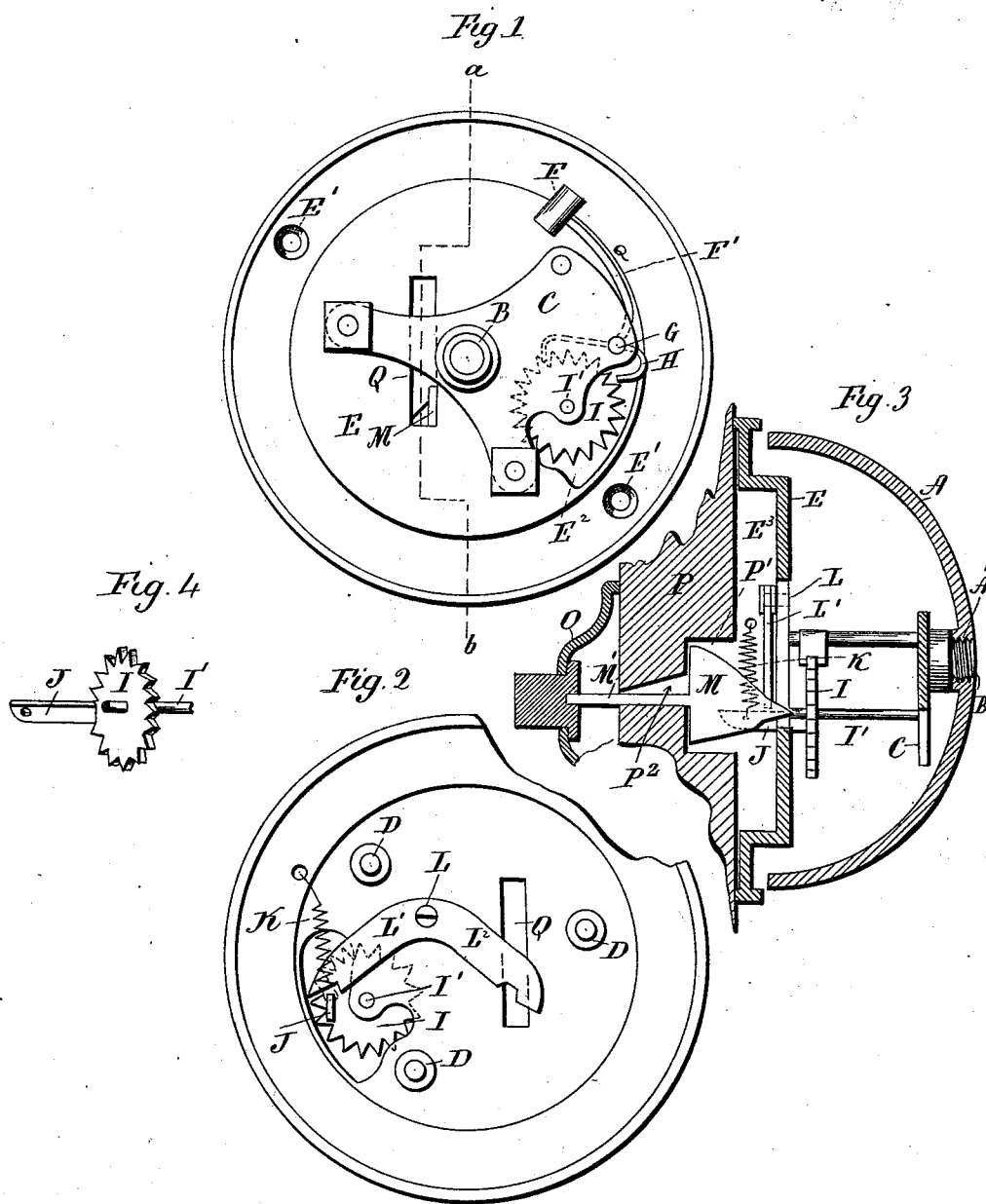


(No Model.)

W. A. BARNES.
NON-WINDING DOOR BELL.

No. 520,980.

Patented June 5, 1894.



Witnesses:
J. H. Shumway
Lillian D. Kellogg

William A. Barnes,
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By Atty.
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UNITED STATES PATENT OFFICE.

WILLIAM A. BARNES, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE
BROWNE & DOWD MANUFACTURING COMPANY, OF SAME PLACE.

NON-WINDING DOOR-BELL.

SPECIFICATION forming part of Letters Patent No. 520,980, dated June 5, 1894.

Application filed February 9, 1894. Serial No. 499,655. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. BARNES, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Non-Winding Door-Bells; and I do hereby declare the following, when taken in connection with 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 plan view of one form which a bell constructed in accordance with my invention may assume, with the bell proper removed; Fig. 2, a reverse plan view thereof; Fig. 3, a view of the bell in vertical section on the line *a-b* of Fig. 1; Fig. 4, a detached perspective view of the escape-wheel showing the post with which it is provided.

My invention relates to an improvement in non-winding door-bells of that class in which the initial movement of the means employed for actuating the bell places under tension a spring, which, in recovering, causes the bell to be sounded, the object of my invention being to produce a simple, compact, durable and effective bell, having few parts, not liable to get out of order, and capable of being produced at a very low cost of manufacture.

With these ends in view, my invention consists in a non-winding bell having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

For the purpose of illustrating my invention, I have chosen to show a bell adapted to be operated by a push-button. As shown, the bell proper *A*, is constructed with a central internally threaded opening *A'*, adapting it to be applied to an externally threaded hub *B*, projecting from the outer face of a movement-plate *C*, which is secured to the outer ends of three pillars *D*, the inner ends of which are firmly attached to the base *E*, which is adapted by means of screw-holes *E'* *E'* to be attached to a door or door-jamb, or to be put up in any other place where the bell is to be used. The bell is struck upon its inner surface by means of a hammer *F*, attached to the outer end of a hammer-arm *F'*, the inner end of which is rigidly secured to a verge-ar-

bor *G*, having one end journaled in the movement plate *C*, and the opposite end journaled in the base *E* aforesaid, and provided with a verge *H*, arranged to take into the teeth of an escape or crown-wheel *I*, mounted upon an escape-arbor *I'*, the opposite ends of which are journaled in the said plate and base respectively. The rotation of the said escape-wheel in either direction, operates through the medium of the verge, to vibrate the bell-hammer, and thus sound the bell. The said escape-wheel is provided with a post *J*, rigidly connected with it near its periphery, and extending inward from it at a right angle through an opening *E²* formed in the base, into a chamber *E³* formed in the back thereof, as clearly shown in Fig. 3. A spiral spring *K*, connected at one end with the base and at the other end with the said post, is located within the said chamber, and operates the escape wheel which it turns in one direction to sound the bell. I do not limit myself, however, to using a spiral spring for this purpose, but may replace the same by a spring of any other form. For initially rotating the escape-wheel, I employ, as herein shown, a two-armed operating lever, struck from a single piece of metal, located in the chamber *E³* of the base, and hung upon a screw *L*, the arm *L¹* of the said lever being notched, and adapted to engage with the post *J* of the escape-wheel, while the arm *L²* of the lever is notched and adapted to be engaged by one edge of a double cam plunger *M*, furnished with a stem *M'*, the outer end of which enters a push-button *N*, mounted in an escutcheon *O*, located on the opposite side of the door *P* from the bell proper. The said plunger is partly located in a recess *P'* formed in the door and partly in the chamber *E³* of the bell its stem passing through a passage *P²* formed in the door *P*. The said plunger passes through a guide-way or slot *Q*, formed in the base *E*, one of its beveled edges engaging with one of the end walls of the said slot, and the other of its edges engaging with the arm *L²* of the operating-lever. When the plunger is pushed inward, its opposite edges respectively bear against the said arm of the lever and the said wall of the guard slot, and as the said wall cannot be moved, the whole movement of the plunger has to be

in the direction of the lever, which it correspondingly moves, turning the lever on its pivot, and causing its opposite arm L' to engage with the post J of the escape wheel and
5 turn the said wheel against the tension of the spiral operating-spring K. In the construction shown, the plunger has a slight lateral as well as a longitudinal movement, this being provided for in the passage P² before
10 mentioned. When the wheel is turned as described, it will operate through the medium of the verge H to vibrate the bell-hammer. Then when pressure upon the push-button N is removed, the tension of the spring K at
15 once operates to rotate the bell in the opposite direction, and not only vibrate the hammer, but also turn the lever back to its normal position, in doing which the lever in turn forces the plunger back to its normal or retired position.
20 It will thus be seen that the bell is not only rung directly, as may be said, by the hand of the user when he pushes inward on the push-button and initially operates the bell, but also after his hand has been removed
25 from the push-button, when the spring which was placed under tension in the initial operation of the bell, recovers and sounds the same.

It will be seen from the foregoing description that my improved bell is composed of
30 few parts, which are simply constructed, that it is not liable to derangement, and that it may be produced at a low cost.

Having fully described my invention, what I claim as new, and desire to secure by Letters
35 Patent, is—

1. In a non-winding door-bell the combination with the bell thereof, of an escape-wheel, a verge engaging therewith, a verge-arbor carrying the verge, a bell-hammer connected
40 with the arbor and vibrated thereby, a post

attached to the escape-wheel, a spring connected with the post for rotating the wheel in one direction, a double-cam plunger, means for operating the same, and connection between the plunger and the escape wheel for
45 rotating the same in the other direction, substantially as described.

2. In a non-winding door-bell, the combination with the bell thereof, of an escape-wheel, a verge engaging therewith, a verge-arbor, a hammer carried thereby, a post secured to the wheel, an operating-lever pivoted between its ends, and engaging at one end with the said post, a spring connected with the wheel for rotating it in one direction, a double cam
55 plunger engaging with the opposite end of the operating-lever, and means for actuating the said plunger, substantially as described.

3. In a non-winding door-bell, the combination with the bell thereof, of an escape wheel, a verge engaging therewith, a verge-arbor, a bell-hammer connected with the said arbor, a spring connected with the wheel for rotating it in one direction, and means connected with the wheel and adapted to be manually
65 operated for rotating it in the opposite direction, the said means including a two-armed operating-lever, one arm of which is adapted to be connected with the said wheel, and the other arm to receive an impulse for moving
70 the lever to actuate the wheel, substantially as described.

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

WILLIAM A. BARNES.

Witnesses:

GEORGE E. PROUDMAN,
BURTON L. SAGE.