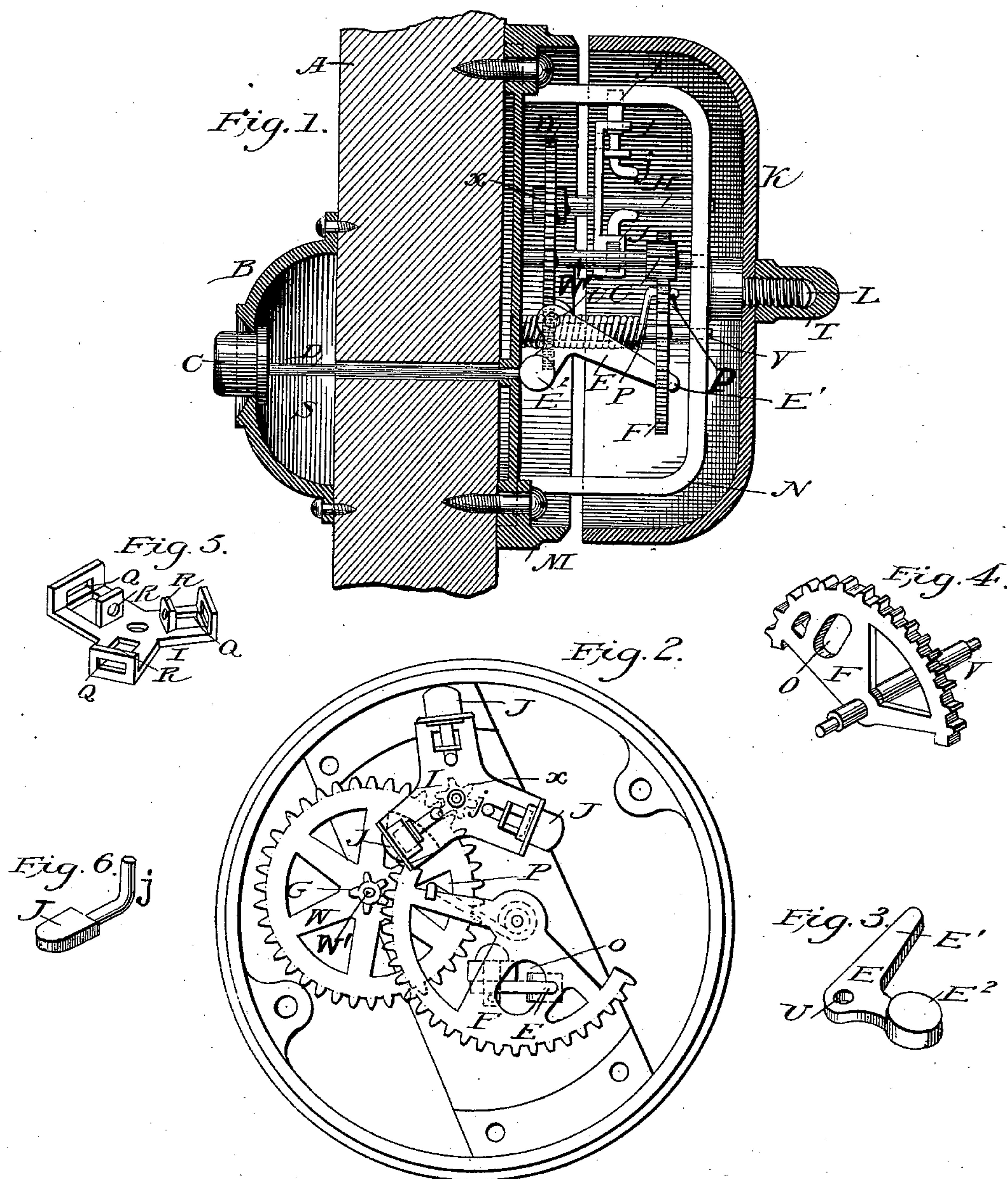


(No Model.)

I. L. GARSIDE.
BELL FOR DOORS, TABLES, &c.

No. 512,435.

Patented Jan. 9, 1894.



Witnesses.
Florence Brown
Chas. J. Dooney

Inventor.
Irad L. Garside
by his Attorney

Harold Stacey

UNITED STATES PATENT OFFICE.

IRAD L. GARSIDE, OF PATERSON, NEW JERSEY.

BELL FOR DOORS, TABLES, &c.

SPECIFICATION forming part of Letters Patent No. 512,435, dated January 9, 1894.

Application filed April 14, 1893. Serial No. 470,546. (No model.)

To all whom it may concern:

Be it known that I, IRAD L. GARSIDE, of Paterson, New Jersey, have invented a new and useful Improvement in Door-Bells and Similar Apparatus, of which the following is a description, referring to the accompanying drawings, which form a part of this specification.

My invention relates to the class of bells in which rapid vibration of the hammer or hammers against a gong is produced by mechanical devices, the sound produced being similar to that of the usual vibrating electric bells.

My invention is adapted to be used for door bells, bicycle bells, alarm bells, and many other purposes, it being only necessary to suitably arrange and connect the bell either directly or by well-known bell-hangers' connections, so that the bell may be operated directly or from a distance, according to the requirements.

Under my invention, I preferably operate the bell by means of a press button closely resembling the usual electrical rosette press-button switch. The energy of the pressure is mechanically transmitted to the bell-hammers, causing them to rapidly strike the bell, giving a sound similar to the usual electric bells. When the press button is released, the motion of the hammers is reversed under the action of a spring, and the bell rings while the parts are being restored under the action of the spring, to their normal position.

My invention is embodied more particularly in the arrangement of the press button, the mechanical train for giving motion to the hammers or strikers, and the arrangement and mounting of the hammers or strikers themselves. My purpose is to produce a bell closely resembling an electric bell, and giving a maximum number of strokes for minimum effort. In addition to this, I am able by my invention to produce a simple, durable, reliable, and inexpensive bell, not easily gotten out of order, and capable of being readily repaired.

To these and certain other incidental ends and purposes, my invention is embodied in the apparatus and its several parts, con-

structed, arranged, combined, and used substantially in the manner hereinafter described, illustrated and claimed.

In the accompanying drawings, Figure 1 is an elevation showing one embodiment of my bell mounted upon a door or partition, the bell, door, and rosette being in cross-section to expose the working parts. Fig. 2 is a plan view of the bell with the gong removed, showing the mechanical train and the arrangement and mounting of my hammers or strikers. Fig. 3 is a detail perspective view of my bell crank lever, for transmitting the pressure from the press button to the train of gears. Fig. 4 is a detail perspective view showing the sector gear which receives motion from the bell crank, and Figs. 5 and 6 are detail perspective views of the hammer or striker support or plate, and one hammer or striker.

Throughout the figures, like letters of reference indicate like parts.

In the drawings I have selected for illustration one of the simplest and preferred forms of my bell, as arranged upon a door or partition A, the bell or gong K with its actuating mechanism being upon one side, and a push button C mounted in a rosette B being upon the other side arranged to transmit pressure from the push button by the pin D directly to the bell mechanism. The rosette and push button are designed to resemble closely the usual electric push-button switches. The push-button is held in its normal position as shown in the figure, by means of the bell crank E, transmitting the pressure of the return spring P as will hereinafter more fully appear.

M indicates the base or frame of the bell adapted to be secured to the door or partition A, as shown, and provided with the yoke, giving bearings for the arbors of the gears, and carrying the screw stud L by means of which the gong K is supported. The gong is slipped upon the screw stud L against a shoulder, as shown, and a nut T screwed down, holding it in place, as in the figure. The hammers or strikers J, loosely supported in the supports or plate I, mounted upon the shaft H, are located in such a position that the rotation of

the shaft H causes them to fly out and strike the bell in rapid succession. The support or plate I, best shown in Fig. 5, is struck up from a flat blank, as clearly seen; the parts Q and R being turned up, as shown, and provided with perforations or slots, fitting the strikers or hammers J, Fig. 6. The strikers J are also struck up or stamped in the form shown, with the rearward-extending pin or guide *j* turned up at right-angles at the end. The hammers or strikers J are mounted in the support or plate I by inserting the guide pin *j* through the guide R and then pushing the hammer forward through the guide Q into the position shown in Figs. 1 and 2. The shaft or arbor H is then inserted through the central hole in the plate I, and soldered in place. This interferes with the withdrawal of the hammers, as they cannot be pushed back, after the arbor is in place, far enough to withdraw the hammers from the guides Q. It is to this simple and very effective construction of hammers and hammer plate, that many of the great advantages of my invention are due, for, clearly, the hammers and their supports may be manufactured at a most trifling cost, and in their operation, they are more simple, direct-acting, and reliable, than any similar arrangement with which I am acquainted. When the shaft is rotated, the centrifugal force throws the hammers outward into contact with the bell, and after striking, they rebound and are thrown back to pass clear of the bell until they can revolve into position to strike. To this sliding motion of the hammers I attach considerable importance, because not only is it more simple and more easily formed than the pivotal connections heretofore used, but I find that either because the shock of impact is less, or from some other cause, less power is required to give a certain number of blows, than with other forms.

The shaft H is provided with a pinion α , driven by the larger gear W mounted upon a shaft W' with the small pinion G. This small pinion G receives its motion from the sector gear F mounted on the shaft V. This shaft is surrounded by the helical spring P secured to the base or frame at one end and to the sector gear F at its other end, as shown. This sector gear is provided with the perforation or slot O through which extends one end E' of the bell crank lever E. The bell crank lever is pivoted at U transversely to the shaft V, so that, as it rocks, the end E' gives or receives motion to or from the sector F. The other arm of the bell crank E is provided with the rounded bearing face or end E'' which presses against the end of the pin D secured to the push-button C. The spring P tends to turn the sector gear F in direction to cause the bell crank E to drive the push-button C outward, as shown in Fig. 1. When pressure is applied to the push-button, the pin D turns or rocks the bell crank E, rotating the sector

gear G against the action of the spring and transmitting the motion with greatly increased speed, through the gearing, to the hammer-plate I. With the gearing shown, one thrust of the push-button C is designed to give about seventy-five or one hundred strokes of the bell. When the push button is released, the recoil of the spring P gives the same number in the reverse direction. Of course the gearing may be modified to give a greater or less number. The intermediate shaft with the gears W and G, may be dispensed with, and more powerful and direct action with a less number of strokes, obtained. So, also, some parts of the invention may be used without others, and various modifications may be made in the forms, proportions and details of the parts, to adapt the bell for a table call bell, or for use on bicycles, and in similar employments.

I have now set forth one embodiment of my invention, and the way in which it may be employed. I have purposely omitted all description of wiring and bell-hangers' connections by which the bell may be operated from a distance; and have omitted the enumeration of many modifications that may be made without departing from the principles of my invention, because, to set forth such constructions and details would obscure rather than make clear the more essential features of my device.

Having, however, clearly explained my invention in one form, I claim, desiring to secure by these Letters Patent all such changes and modifications as may be made by mere skill in the art, the following:

1. In combination in a bell, an actuating push rod or pin D, a bell crank E, and gearing for actuating the hammers or strikers, the said bell crank E projecting through a perforation contained in the said gearing, for driving it, substantially as and for the purposes set forth.

2. In combination in a bell, an actuating push rod or pin D, a bell crank E, sector gear F containing a perforation O through which the said bell crank projects, and a bell ringing mechanism operated by the said gear F, substantially as and for the purposes set forth.

3. The improved bell hammer or striker consisting of a support or plate I having one or more pairs of perforated or slotted guides Q R, and one or more hammers or strikers mounted in the said guides of the said plate, substantially as and for the purposes set forth.

4. The improved bell hammer or striker consisting of a support or plate I formed of a blank having turned-up portions Q R forming guides, and one or more hammers or strikers J therefor, provided with guide pins *j* having heads or turned-up ends restricting the outward movement of the hammers or strikers

ers, and an arbor or shaft H restricting the inward movement of such hammers or strikers, substantially as and for the purposes set forth.

- 5 5. The improved hammer or striker support I for bells formed of a plate or blank having turned up or struck-up portions slotted or

perforated to form guides for the hammers or strikers, substantially as and for the purposes set forth.

IRAD L. GARSIDE.

Witnesses:

MINNIE A. GARSIDE,
LAWTON B. GARSIDE.