

(No Model.)

G. W. EDDY.
DOOR BELL.

No. 570,202.

Patented Oct. 27, 1896.

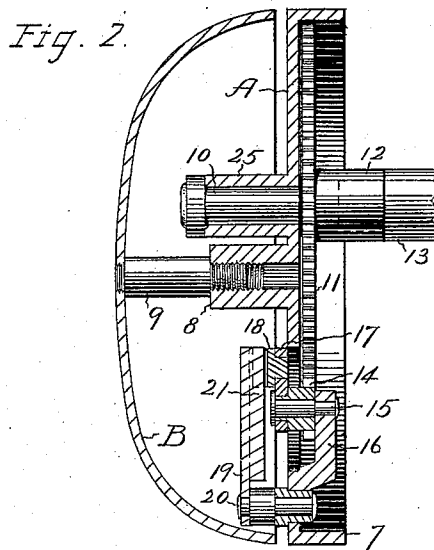
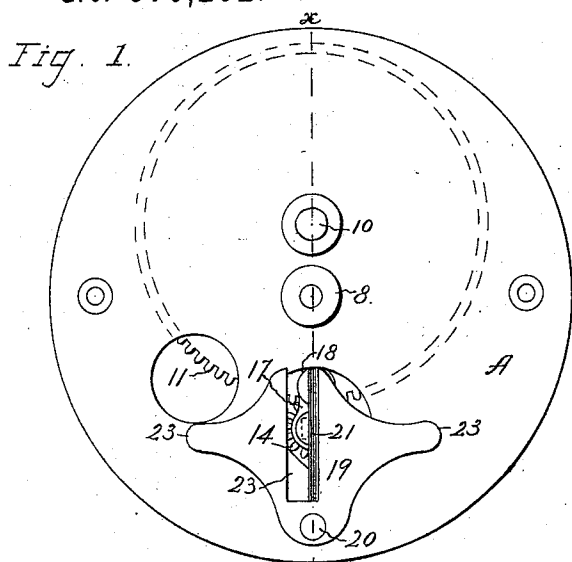


Fig. 3.

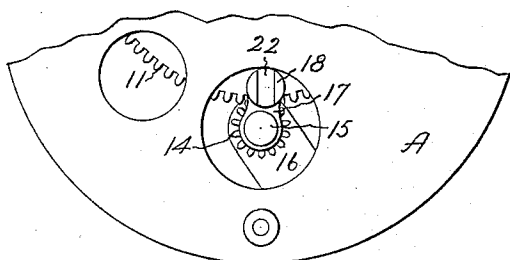


Fig. 4.

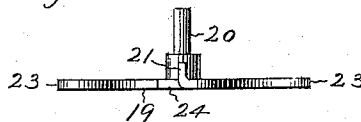


Fig. 5.

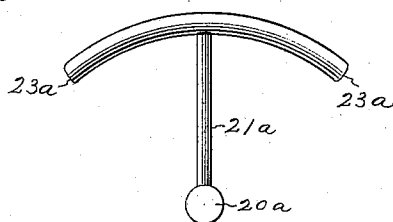
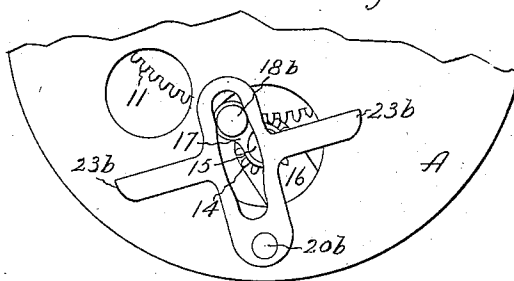


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. EDDY, OF BRISTOL, CONNECTICUT, ASSIGNOR TO AMERICUS J. CLAYTON AND HORATIO C. CLAYTON, OF SAME PLACE.

DOOR-BELL.

SPECIFICATION forming part of Letters Patent No. 570,202, dated October 27, 1896.

Application filed April 15, 1896. Serial No. 587,692. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. EDDY, a citizen of the United States, residing at Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Door-Bells, of which the following is a specification.

My invention relates to improvements in door-bells; and the objects of my improvement are simplicity and economy in construction and efficiency and convenience in operation.

In the accompanying drawings, Figure 1 is a rear elevation or inner view of my bell, the gong being removed. Fig. 2 is a vertical section of my bell on the line *xx* of Fig. 1. Fig. 3 is an elevation, corresponding with Fig. 1, of a portion of my bell with the hammer removed. Fig. 4 is a detached plan view of the hammer. Fig. 5 is an elevation of a modified form of hammer, and Fig. 6 is a view corresponding with Fig. 1 of a portion of my bell in a modified form.

A designates a base-plate having a rim 7 and adapted, in any ordinary manner, to be secured to the inside of a door. It is also provided with a central hub or post 8, upon which to secure an ordinary gong B. Said gong is provided with a screw 9 by which to connect it with said hub or post 8, but the manner of securing the gong to the base-plate is not essential to my invention. The base-plate is also provided with a tubular boss 25, Fig. 2, of considerable length, within which I mount the shaft 10 of the driving gear or wheel 11, whereby said wheel is supported in a single bearing only and the necessity for two movement-plates is avoided. The hub 12 of the wheel 11 may be connected in any proper or ordinary manner to the shank 13 of any ordinary knob or analogous device for operating the bell from the outside of the door. A pinion 14 is mounted to rotate freely on a pin or stud 15, which is preferably supported by a bridge 16. Said pinion engages with and is driven by the driving-gear 11 and carries the crank-arm 17. In this crank-arm is loosely pivoted a slotted post 18. Near the outer edge of the base-plate I pivot the oscillating hammer 19 by means of the pin or pivot 20. Said hammer 19 carries a radiating arm

21, which rests in the slot 22, Fig. 3, of the slotted post 18, said arm being narrower than said slot, as shown by a comparison of Figs. 3 and 4. I prefer to form the hammer of sheet metal cut out by means of dies, with the two striking-points 23, and to form the radial arm by cutting out the central portion in the body of the sheet, bending it down in the form of a right-angular flange, as shown, leaving a slot 24 in the body of the hammer, from which slot said arm was bent. The slot of itself has no function further than to afford a cheap way to form the arm integral with the hammer and of sheet metal.

If a knob, free crank, or thumb-turn is connected with the hub 12 of the wheel 11, said wheel may be turned continuously in either direction to any extent that may be desired, thereby imparting a rapid rotary movement to the crank-arm and causing the hammer to strike the gong alternately with its two striking-points 23. The looseness of the arm 21 in the slotted part 18 permits the hammer to be thrown by its inertia a little in advance of the crank-arm, so that it may strike the bell and rebound at each stroke. The striking may be continued as long as the wheel 11 is turned. If instead of a continuously-rotating operating device a well-known vibratory operating-arm were connected to the hub of the wheel, then a series of rapid strokes would be given while said arm and wheel 11 moved in one direction, and another series of strokes given when said arm and wheel made their return movement. Inasmuch as the slotted post 18 is engaged by the radial arm 17, so that it cannot rotate on said arm, it is necessary to have the said post turn within the crank-arm. The hammer at one end and the crank at the other will prevent the said post from working endwise out of place even if it is only loosely set into its bearing in the crank-arm.

While I have described a double-stroke hammer, which I prefer, it is obvious that the construction of the other parts would not be changed if one of the striking-points 23 of the hammer were cut off and made too short to strike the bell. While I prefer to form the hammer 19 of sheet metal, as described, it may be formed as shown in Fig. 5, in which

20^a is the pivot-pin, 21^a the radial arm, and 23^a the striking-points. This hammer may be substituted for the hammer 19 by merely pivoting it to the base-plate at the same point and letting the arm 21^a rest in the slot 22 of the slotted post 18, the operation being the same as that hereinbefore described.

In Fig. 6 I have shown another form of sheet-metal hammer having striking-points 23^b and pivot 20^b, but instead of the radial arm 21 I make a radial slot 21^b. Instead of the slotted post in the crank-arm 17 I employ a crank-pin 18^b, which pin may be rigidly secured to the crank-arm, if desired. I leave the slot at each end of a size that the crank-pin will substantially fill, so as to get a good throw as the crank-pin is passing the dead-center at either end of the slot, but in order to permit a rebound of the hammer as it strikes the bell I enlarge the middle portion of the slot, as shown, so that the crank-pin does not fill it. The operation is substantially the same as before excepting as I make a little better connection with the crank-pin and hammer at the turning-points of its strokes.

By my improvements I am enabled to employ a hammer which strikes direct blows and operate the same by a rapidly - revolving crank-arm, whereby I obtain a series of rapid strokes without any dragging action of the hammer. I am also enabled to construct the hammer of sheet metal and thereby produce the same at a small cost. The parts are few and of simple construction and at the same time durable and efficient. I mount all the parts on a single plate and thereby dispense with the posts and second movement-plate usually employed in similar bell - striking movements.

I claim as my invention—

1. The combination of a driving-gear, a pinion in engagement therewith, a crank-arm carried by said pinion, a slotted stud loosely mounted in said crank-arm and the oscillating hammer having a radial arm in engagement with said slotted stud, substantially as described.

2. The combination of the base A adapted to be secured to the inside of a door, a gong B mounted concentrically thereon, the driving-gear 11, having the hub 12 for connecting with the shank of an operating-handle, said gear being free to be rotated by hand in either direction, the pinion 14 in engagement with said driving-gear, a crank-arm carried by said pinion and arranged to revolve in either direction through said driving-gear, a hammer pivoted upon said base-plate near the outer edge thereof in a radial line with the axis of said crank-arm and operatively connected therewith, all within the circle of the gong substantially as described.

3. The combination of the driving-gear, a pinion driven thereby, a crank-arm carried by said pinion, the pivoted hammer in the form of a plate with the radial arm in the form of a flange, and a slotted post with which said radial arm engages substantially as described.

4. A door-bell having the base-plate with tubular post, the gear-wheel 11 mounted on the shaft 10 within said tubular post, a hammer and intermediate devices operatively connecting said hammer and gear-wheel, all mounted on the one base-plate and without any secondary movement-plate substantially as described.

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Witnesses:

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