No. 661,272. Patented Nov. 6, 1900.

W. R. MOORE.

DOOR BELL.

(Application filed Mar. 31, 1899. Renewed Oct. 6, 1900.)

(No Model.)

Fig. 1.

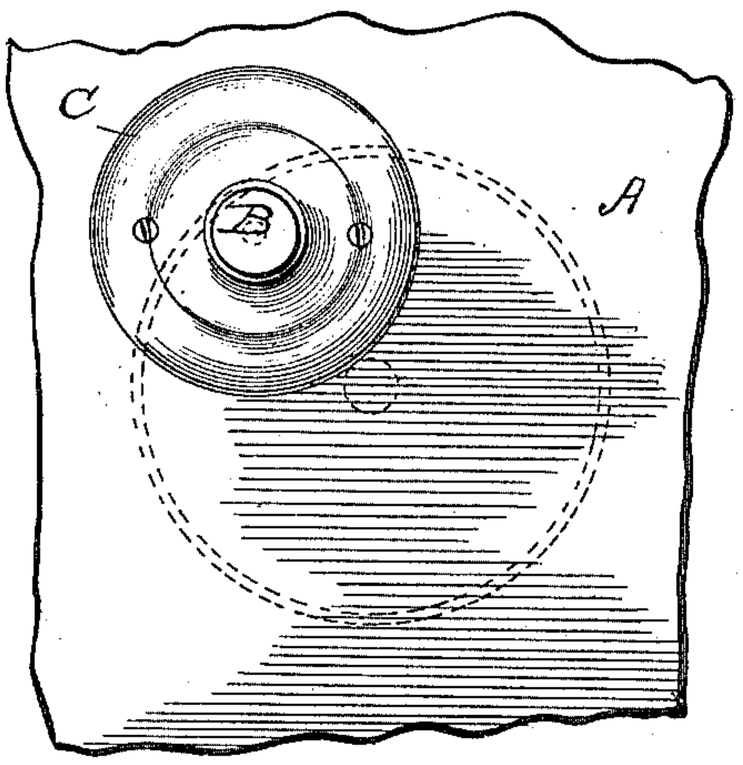


Fig. 2.

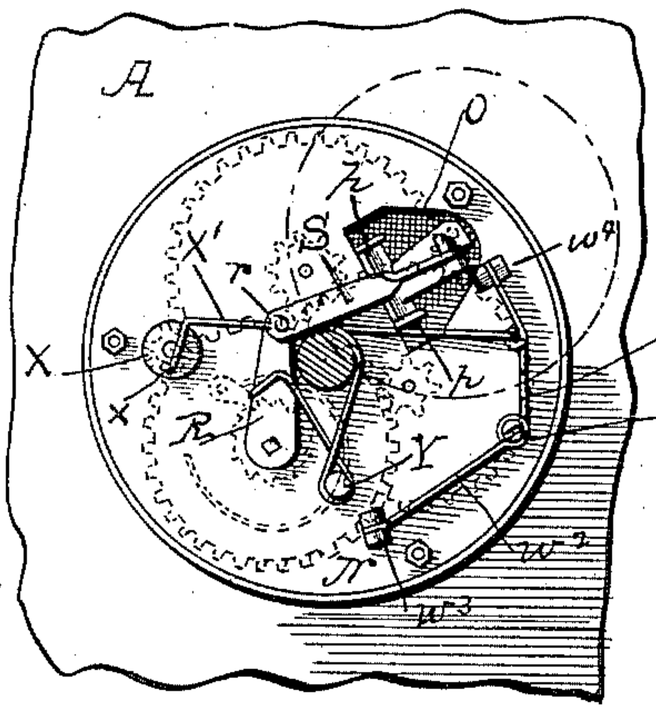


Fig. 3.

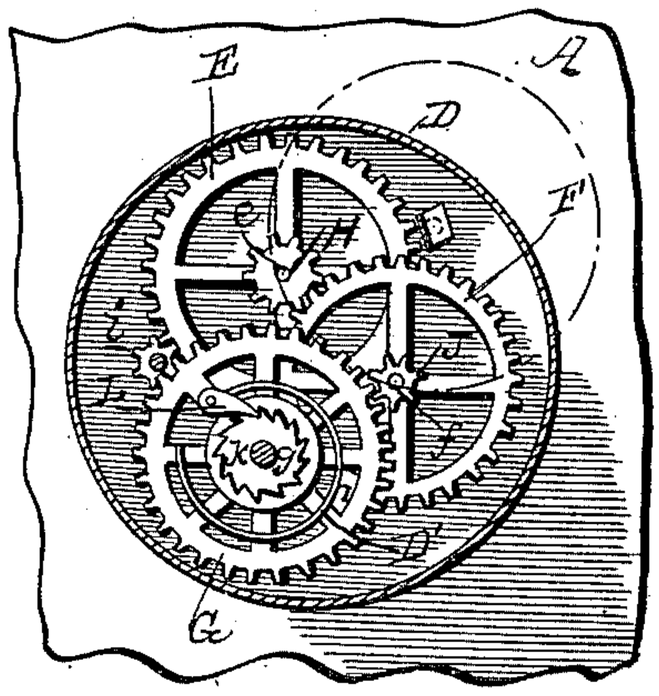
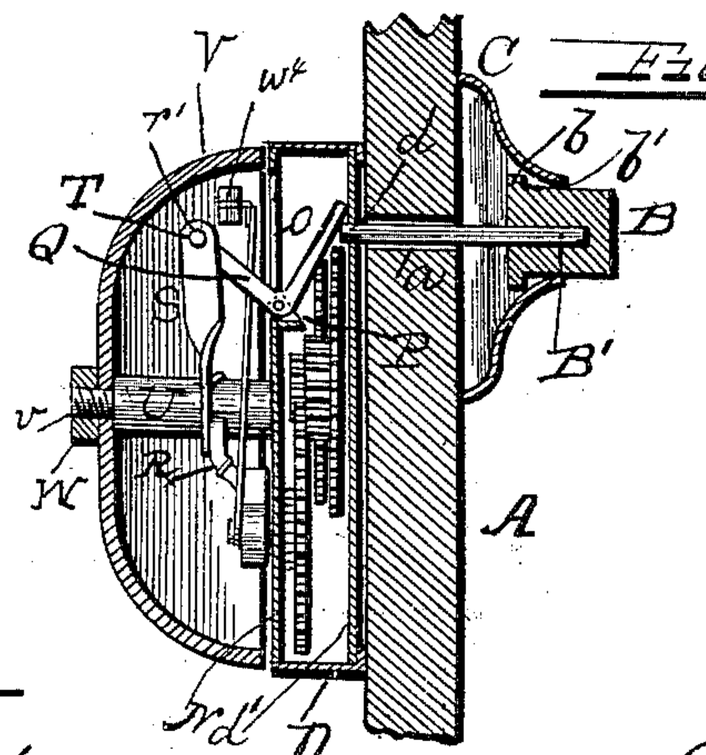


Fig. 4.



Witnesses.

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DOOR-BELL.

SPECIFICATION forming part of Letters Patent No. 661,272, dated November 6, 1900.

Application filed March 31, 1899. Renewed October 6, 1900. Serial No. 32,285. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. MOORE, a citizen of the United States, residing at Eden, in the county of Erie and State of New York, have invented certain new and useful Improvements in Door-Bells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of bells commonly known as "gong-bells;" and the object is to provide a bell that is adapted to be secured upon the inner side of doors and similar structures; and the invention consists in the novel construction and arrangement of mechanism inclosed in a shell or base and whereby the bell is conveniently and easily operated by a push-button secured upon the outside of the door and communicating with the operating mechanism by means of a rod or stem passing through an opening in the door and also through the forward plate or shell.

In the accompanying drawings, which fully illustrate my invention, Figure 1 is a front elevation showing a base for the bell in dotted lines and the push-button and cap applied to the outer surface of a door. Fig. 2 is a sectional elevation showing the gearing within the base in dotted lines and striking mechanism secured to the rear plate of the base and inclosed in the bell. Fig. 3 is a similar view of the gearing inclosed in the base or shell; and Fig. 4 is a transverse section showing the push-button, base, bell, and operating and striking mechanism in both base and bell.

Referring to the drawings, A designates a portion of a door, having an opening *a* formed therethrough.

B designates a push-button within which one end of a stem or rod B′ is secured, the opposite or free end of this stem or rod being passed through the opening in the door and an opening in the forward plate of the base or shell contacting with a bell-crank lever to be hereinafter described.

The push-button B is retained in place by means of a shoulder *b*, held in an opening *b*′, formed in the outer and smaller portion of a circular cap C, secured to the outer surface or front of the door A by means of screws or other suitable fastening.

D designates a hollow base or shell secured to the door upon its inner surface and having a small perforation *d* formed in its forward plate *d*′, which is in alinement with the opening *a* in the door, whereby the stem or rod B′ is passed through the openings *a* and *d* and contact made with the bell-crank lever, as hereinbefore stated, and in this base or shell D (shown more clearly in Fig. 3 of the drawings) is contained the train of gearing or wheels E F G, pinions H *i* J, ratchet K, pawl L, which pawl and ratchet hold wheel C from reverse movement, and spring D′, the latter being secured to the wheel G and actuating the same, and each wheel and pinion being mounted upon its respective shaft *e*, *f*, *g*, and *h*, the train of gearing intermeshing and resembling that of a clock. Hence a designation only of the elements is deemed necessary. Motion is imparted to the wheel G and thence through the train of gearing by the spring D′.

N designates the rear plate of the base or shell D, which is provided with a large opening O for the passage of the lever end. This opening is located diametrically opposite to the perforation *d* in the forward plate and the opening *a* in the door.

P designates an offset "struck up" or formed upon the inner face of and within the opening O of the rear plate N, having perforated lugs *p p* formed integral with the offset, within which is journaled or loosely pivoted a bell-crank lever Q, which has a rocking or vibratory movement imparted to it by means of the rod B′, contacting with the bell-crank lever Q, and through the medium of the operating and striking mechanism (shown in Figs. 2 and 3) the gong is sounded. The cog-wheel G, carrying the spring D′ and ratchet and pawl and mounted on the shaft *g*, as well as the pinion J and the shafts upon which the wheel G and pinion J are mounted, are journaled in the plate N and located upon the inner face thereof, this wheel G and pinion J meshing with these cogs and pinions E F H *i*, journaled in the front plate *d*′. To the rear end of the shaft *g*, which is projected

through the plate N upon its outer surface, is secured the lower end of a short arm R, and to the outer or free end of said arm is pivotally secured, as at r, a twisted link S, which in turn is loosely secured to an arm of the bell-crank lever by means of a pivot r', passed transversely through said projection.

U designates an arbor, having one end centrally secured to the plate N and projected rearwardly therefrom, upon which a gong V is mounted, the opposite or outer end of this arbor having a screw-thread v cut therein to engage with a nut W, which secures the gong in place upon the arbor.

W′ designates a stud secured to the plate N, around which is coiled a wire providing two hammer-arms w' w^2. To the outer or free ends of these arms are secured hammers w^3 w^4, which strike alternately upon the gong.

X designates an eccentric on the end of the shaft h, carrying the pinion i, which projects through the plate N, said disk being on the side of the plate opposite to the pinion J, and x is a pin on the eccentric. Around this pin is coiled one end of a rod X′, said end being bent at right angles to the body of the rod, the opposite end of this rod being bent outwardly at right angles to the body of the same, this last-mentioned end engaging a coil formed in the hammer-arm w', thus connecting the hammer-arms and hammers w^3 w^4 with the eccentric, the functions of the eccentric and its rod being to operate the hammers and sound the gong.

Y designates a stud around which the lower end of a V-shaped retractile spring is secured and then crossed, one of the free ends of which embraces the short arm R near its pivotal point, the other or free end of the opposite portion of the spring embracing the arbor U, the function of which spring is to limit the movement of the bell-crank lever Q. The forward and rear plates or disks are secured together by means of screws or other suitable fastening.

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

1. In a gong-bell, the combination with a door having an opening therein, a cap secured to the outer face of the door, a push-button secured within the cap, a rod having its outer end connected with the push-button, a base or shell secured to the inner face of the door having forward and rear plates, the former having a small opening therein, alined with the opening in the door through which the push-rod passes, the latter having a larger opening alined with the smaller openings in the forward plate and door, a bell-crank lever pivotally secured in an offset formed upon the rear plate and having one of its arms projected into the base or shell making contact with the push-rod, the offset having perforated lugs or ears for pivotally securing the bell-crank lever to the plate and within the opening, a train of gearing located within the base or shell to actuate the bell-hammers, substantially as described.

2. In a gong-bell, the combination with a door having an opening therein; a cap secured to the outer face of the door; a push-button secured within the cap; a rod having its outer end connected with the push-button; a base or shell secured to the inner face of the door having forward and rear plates; the former having a small opening therein alined with the push-rod opening in the door, the latter having a larger opening alined with the smaller openings in the forward plate and door, a bell-crank lever pivotally secured in an offset formed upon the rear plate and having one of its arms projected into the base or shell making contact with the push-rod, the offset having perforated lugs or ears for pivotally securing the bell-crank lever to the plate, and within the opening; a train of gearing located within the base or shell to actuate the bell-hammers; an eccentric mounted upon the rear end of the shaft of the pinion journaled in the rear plate; an angular rod extending from said eccentric to the hammer-rod, and the said hammer-rod with its hammers, substantially as described.

3. In a gong-bell, the combination with a door having an opening therein for the passage of the push-rod, a cap secured to the outer face of the door; a push-button secured within the cap; a rod having its outer end connected with the push-button; a base or shell secured to the inner face of the door having forward and rear plates, the former having a small opening therein alined with the push-rod opening in the door, the latter having a larger opening alined with the smaller openings in the forward plate and door; a bell-crank lever pivotally secured in an offset formed upon the rear plate, and having one of its arms projected into the base or shell making contact with the push-rod, the offset having perforated lugs for pivotally securing the bell-crank lever to the plate and within the opening; a train of gearing located within the base or shell to actuate the bell-hammers; an eccentric mounted upon the rear end of the shaft of the pinion journaled in the rear plate; an angular rod extending from said eccentric to the hammer-rod, a short arm secured to the outer end of the ratchet-wheel shaft, a link connecting the short arm to the bell-crank lever; a retractile spring having its lower end secured to a stud in the rear plate of the base or shell, one of its upper or free ends embracing the short arm and its opposite end the shaft or arbor of the bell, and a bell secured to the outer end of the bell-shaft, substantially as and for the purpose set forth.

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

WM. R. MOORE.

Witnesses:
FRED C. HAM,
WM. H. A. MILLS.