(No Model.)

J. P. CONNELL.

GONG DOOR BELL.

No. 477,649. Patented June 28, 1892.

Fig. 1

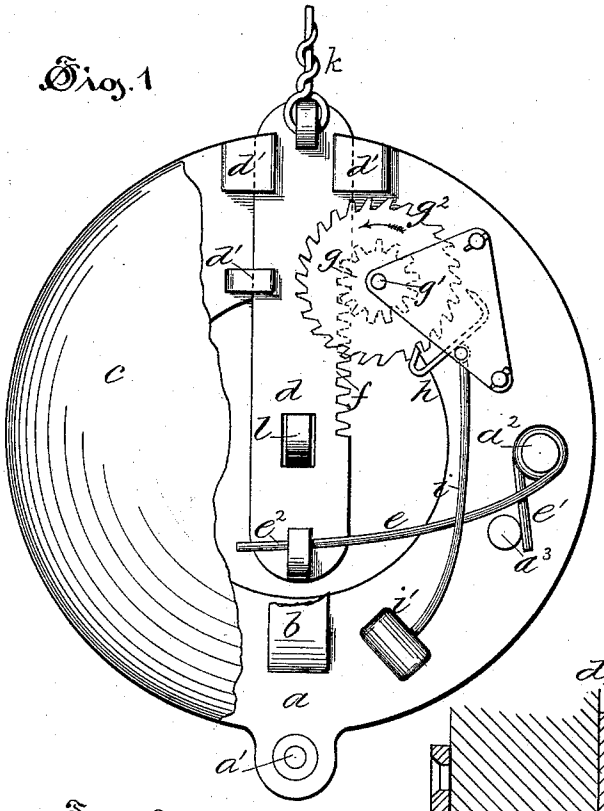


Fig. 4

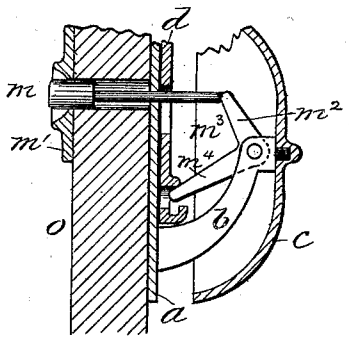


Fig. 2

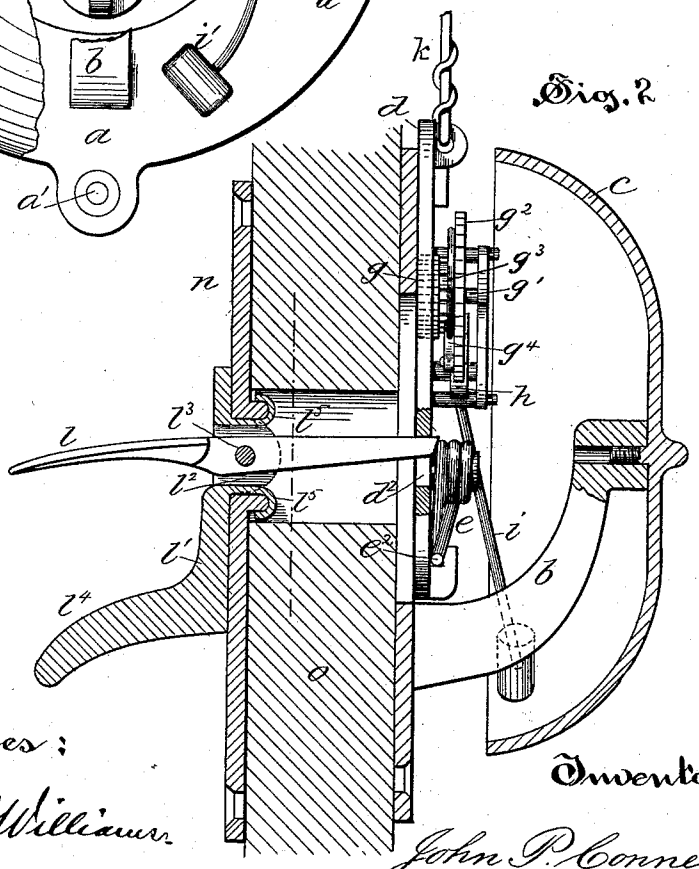
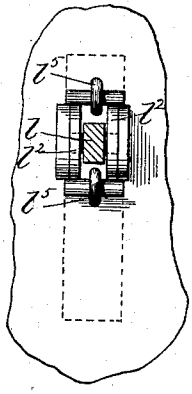


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN P. CONNELL, OF KENSINGTON, CONNECTICUT.

GONG DOOR-BELL.

SPECIFICATION forming part of Letters Patent No. 477,649, dated June 28, 1892.

Application filed June 7, 1890. Serial No. 354,545. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. CONNELL, of Kensington, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Gong Door-Bells, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a gong door-bell that is so arranged as to be operated either by means of a pull-wire, a latch, or a push-button, and one that will sound an alarm by a succession of rapidly-repeated blows of the hammer in imitation of the ringing of an electric bell.

To this end my invention consists in details of the several parts making up the structure as a whole, and in their combination, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a front or plan view of a bell embodying my improvement with part of the gong and its supporting-bracket cut away to show construction. Fig. 2 is a detail view in central vertical section through a door and in section of a bell and its operating parts, shown as connected to a door. Fig. 3 is a detail view in section through a portion of the cam-lever socket. Fig. 4 is a detail view in vertical section through a door and part of the bell-operating mechanism, illustrating the method of using the push-button to operate the striking mechanism.

In the accompanying drawings, the letter a denotes a base-piece that is preferably of metal, cast to shape and provided with screw-holes a', through which screws or like fastening devices may be driven for the purpose of securing the bell as a whole in position for use. This base-piece is provided with an integral bracket or arm b, that is arranged to support a gong C, that is secured to the arm, as by means of a screw taking into a threaded socket in the end of the arm, that is preferably centrally located with reference to the base-piece and the striking mechanism. A reciprocating slide d is mounted on the base-piece and is supported in a guideway formed in the guides d', that project from the base-plate. A spring e is attached to the base-plate by being twisted about the stem a^2, with the arm e' thrusting against another stem a^3 and a longer arm e^2 projecting across the base and engaging with the inner end of the slide d in such manner as to tend to hold the slide normally at the inner limit of its play. One edge of this slide d bears a series of teeth, forming a rack f, and the teeth of this rack are in engagement with the teeth of a cog-wheel g, that forms part of the hammer-operating mechanism. This cog-wheel g is borne on an arbor g', fast to which is a ratchet-wheel g^2, the cog-wheel being secured to a ratchet-wheel g^3, that is engaged by a spring-pawl g^4 in such manner as to allow the cog-wheel g and ratchet-wheel g^3 to turn freely in one direction, while the pawl g^4 tends to hold the wheel against movemement in a reverse direction. The escapement-wheel g^2 is in engagement with a pallet h, and projecting from the rock-shaft of which is a hammer-arm i, on the end of which is supported a hammer i', located in proper position to be thrown into contact with the gong C by the vibration of the pallet and the hammer-arm that is rigidly connected therewith.

The hammer is caused to operate to strike by causing the slide d to be moved outward, the cog-wheel g turning freely while the slide is moving outward; but as soon as the slide is released the pull-spring e tends to draw it inward, and in its inward movement, owing to the engagement of the rack f with the cog-wheel g, the escapement-wheel g^2 is rapidly rotated in the direction indicated by the overlying arrow in Fig. 1, so as to cause the pallet to vibrate rapidly, and this causes the hammer to strike a series of rapid blows against the gong. This slide d may be caused to move radially outward by means of a pull-wire k, secured to the slide, or the slide may be operated by a thumb-lever l or push-button m.

The thumb-lever l is mounted in a base-piece l', extending through a socket and between ears l^2, being supported by a pivot-pin l^3. An integral part of the base-piece is the finger-hold l^4, and clamping-arms l^5, projecting from the inner surface of the base-piece, are used to secure the base-piece with the thumb-lever and finger-hold in position on the latch-plate n, the latter being secured to the door o, as by means of screws, in the or-

dinary manner. The end of the lever l engages the slide by extending through the opening d^2, as shown in Figs. 1 and 2 of the drawings. This thumb-lever is operated by pushing down upon the outer extremity, which causes the inner end to be lifted up in such manner as to cause the slide to move radially outward. As soon as the pressure of the thumb-lever is released the recoil of the spring e draws the slide inward and causes the bell to ring.

When the push-button is used as a means of operating the device, it is mounted in a base-piece m', adapted to be secured to the door o, the inner end of the pintle on which the push-button is supported being in engagement with the arm m^2 of a bent lever m^3, pivotally supported on the arm b, with the other arm m^4 of the lever in engagement with the slide d, so that when the push-button is thrust inward the bent lever is rocked on its pivot in such manner as to cause the slide to move radially outward. The return movement of the slide is produced by the recoil of the spring e, as before, and the bell is caused to sound.

I claim as my invention—

1. In a door-bell, in combination, a base-piece, a reciprocating slide attached to the base-piece and provided with a rack, the main-spring e, operating to retract the slide, a cog-wheel of the bell-operating mechanism borne on an arbor secured at the base and in engagement with the rack, the ratchet-wheel g^3, secured to the cog-wheel and with its teeth in engagement with the spring-pawl g^4, the spring-pawl g^4, the ratchet-wheel g^2, fast to the shaft, with its teeth in engagement with a pallet, the pallet rigidly connected with the swinging hammer i, secured to the base, and means for withdrawing the slide, all substantially as described.

2. In a gong-bell, in combination with a reciprocating slide in operative engagement with the hammer-operating mechanism, a base-piece, and a thumb-lever fulcrumed on the base-piece, which has an integral finger-hold and with one end in operative engagement with the slide, all substantially as described.

3. In combination with a gong-bell, the hammer-operating mechanism located within the gong, a latch-plate adapted to be secured to a door, the base-piece secured to the latch-plate and having an integral finger-hold, the clamping-piece l^5 for securing the base-piece to the latch-plate, and the thumb-lever pivoted in the base-piece and with one end in engagement with the slide of the hammer-operating mechanism, all substantially as described.

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