

(No Model.)

J. P. TIRRELL.  
ELECTRO MECHANICAL GONG.

No. 389,423.

Patented Sept. 11, 1888.

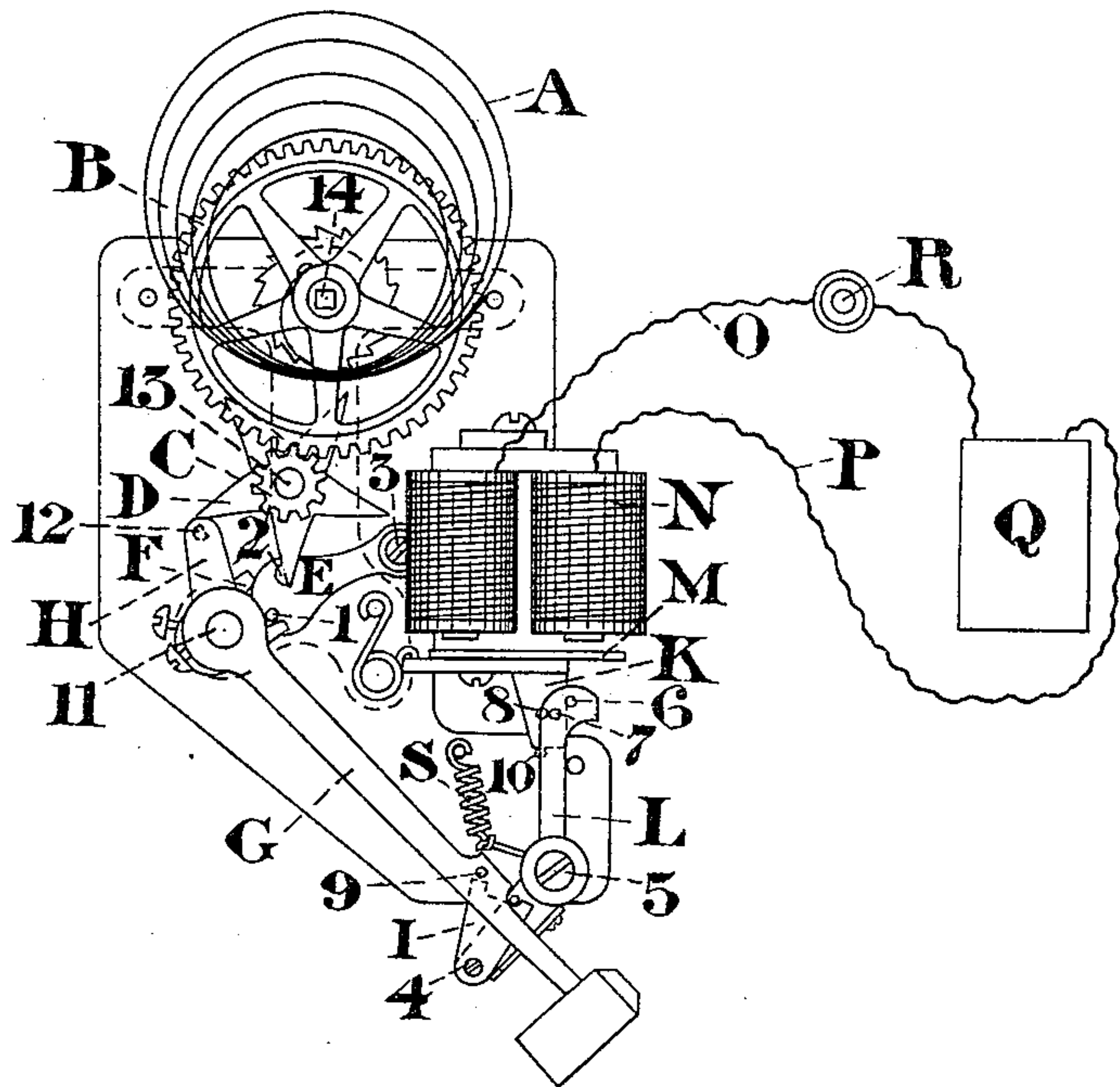


FIG. 1.

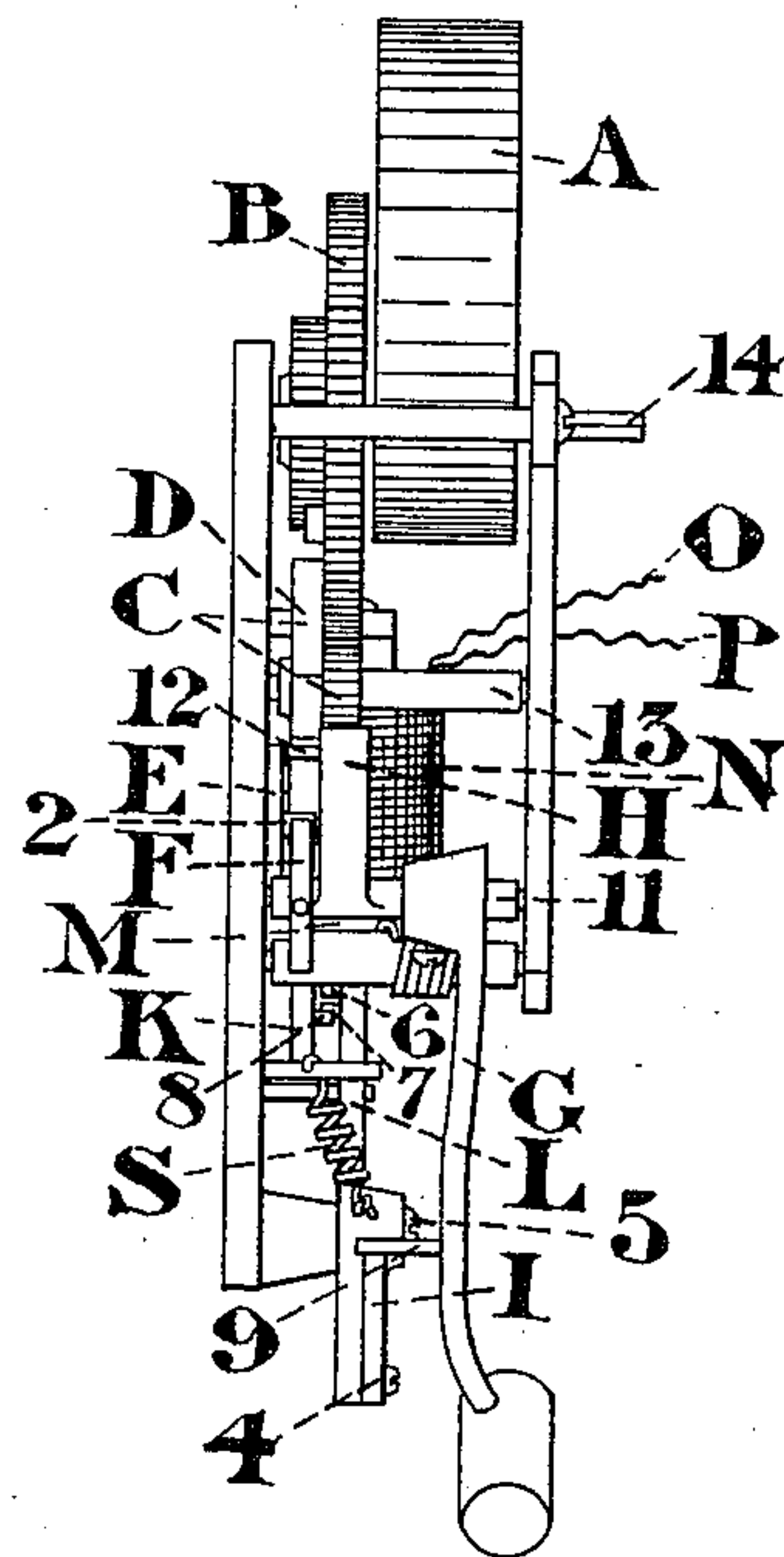


FIG. 2.

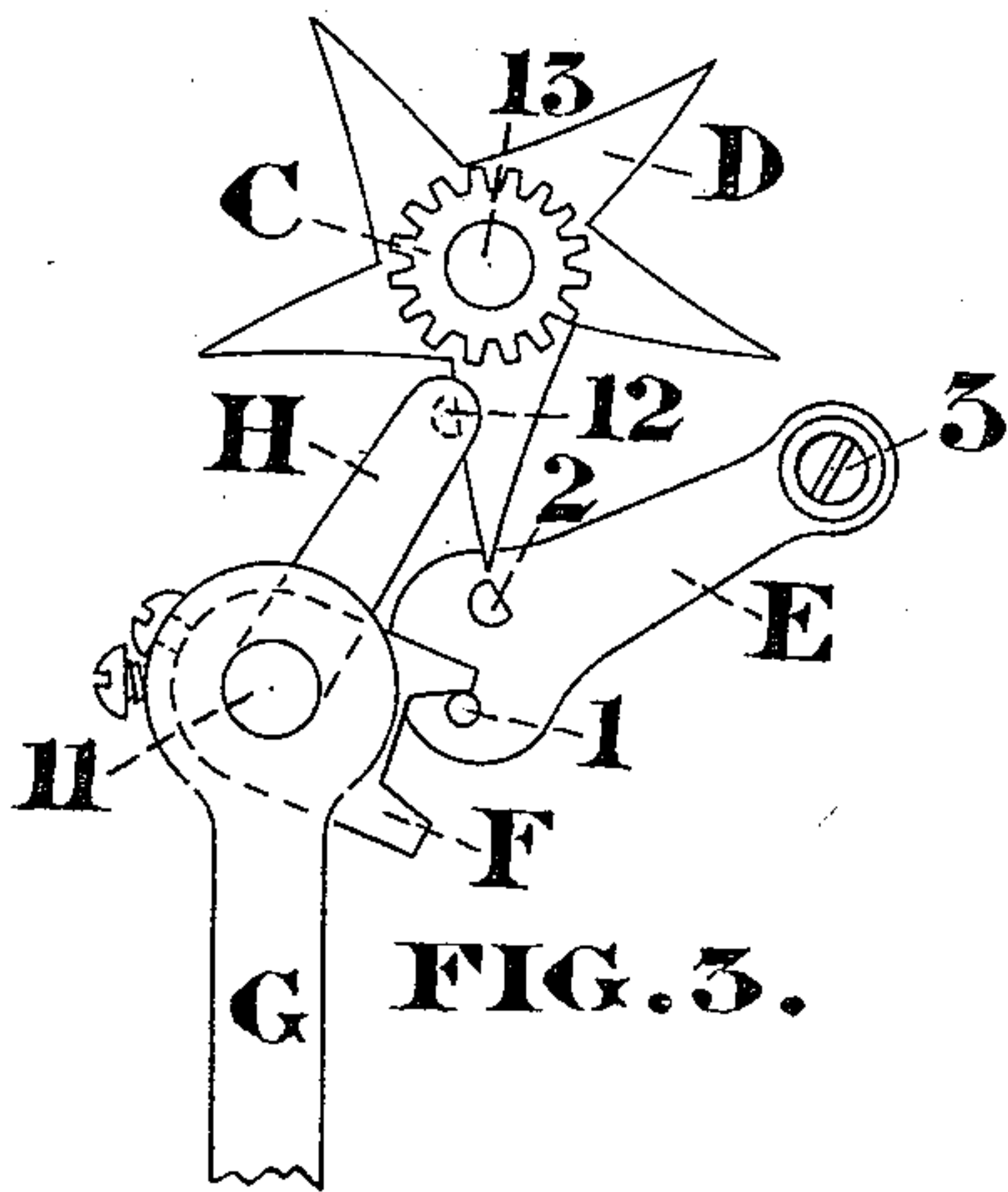


FIG. 3.

WITNESSES

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## ELECTRO-MECHANICAL GONG.

SPECIFICATION forming part of Letters Patent No. 389,423, dated September 11, 1888.

Application filed November 7, 1887. Serial No. 254,462. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB P. TIRRELL, of Boston, in the State of Massachusetts, have invented an Improvement in Electro-Mechanical Gongs, of which the following is a specification.

The invention consists both in the selection, shaping, and arrangement of the elements entering into the apparatus and in a novel lever combination for such apparatus, thus eliminating surplus mechanism and securing a more simple and effective machine as a whole.

In general construction the appearance of a gong such as I have invented differs but slightly from ordinary electric gongs. The mechanism is contained in a clock-shaped box with an open or closed face, and the bell attached below the box covers the hammer projecting therefrom. The mechanism is held by an iron frame attached to the under surface of the box, as shown in Figures. 1 and 2.

Reference to the drawings will now be made, in which similar letters denote similar parts.

Fig. 1 is a view of my invention as it appears when at rest upon the frame-work, the hammer being held by the latch. Fig. 2 is a side view of the mechanism of Fig. 1. Fig. 3 is a front view of a part of the apparatus, showing the position of the star-throw, lever, and hammer when the gong is about to strike.

In general my invention includes a coiled clock-spring, A, of strength proportional to the size of the gong or hammer G, properly arranged with a clock or winding mechanism, by which the spring A can be restored to position. A large cog driving wheel or main wheel, B, upon which the clock-spring A bears and to which it communicates motion when permitted to act, as hereinafter explained, fits into a small cog or pinion, C, turning upon the axis I<sup>1</sup>, supported by bearings in the iron frame. Adjacent to this pinion C, upon the same axis, I<sup>1</sup>, is a star-shaped throw wheel or lever, D, having five or more points, each point being curved slightly upon its bearing-surface. A dog or clamp, F, controls the motion of this star-throw, being normally, as shown in Fig. 1, held against a pin on movable plate E by means of the hammer G, pivoted at I I to the lower and upper part of said frame, as is the lever H. Hammer G is normally held by an ordinary

latch, I, thereby causing the lower arm of the dog F to bear against said pin 1, while stop-pin 2 holds the star-throw in place, as shown in Fig. 1. Pins 1 and 2 are fixed in a movable lever, E, pivoted at 3. The latch I is pivoted at 4 on the lever L, which lever is pivoted at 5 on the top of a post in the frame-work. The latch-lever L has two pins or detents, 6 7, by which a corresponding pin, 8, on the extension K of the armature M holds the latch-lever in place until the armature is withdrawn by attraction of the magnet N. This magnet N is located by the side of the supporting frame-work in the box, and the extension or lip K of its armature M is connected with the lever L by means of the pins or detents 6 7 8. The wires *o p* lead to the battery Q, and the current is admitted by a push-button, R, in the usual form.

Having thus described the nature and arrangement of my said invention, I will now explain the operation thereof. Pressure upon push-button R admits the current to magnet N. The magnet, being energized, attracts the armature M, carrying the lip K, and thus moving pin 8 away from pin 7, and brings pin 6 in contact with pin 8, until the release of the armature, by breaking the circuit, allows these pins to separate, when the hammer G falls away by gravity. The hammer falling away brings the upper arm of the dog F against the pin 1 and carries it and E downward, while pin 2 thereby releases the star-throw D, which at once bears against a pin, I<sup>2</sup>, on the lever H, as shown in Fig. 3, whereby the force of the spring A, acting upon the main wheel B, is communicated to the pinion C, turning the axis or spindle, and thereby causing the star-throw D to revolve with great energy. In its revolution it presses the pin I<sup>2</sup> on the under side of the lever H with considerable force, causing H to move and thereby throw hammer G, which is also pivoted at I I, with great force against the gong. When the star-point slides off the pin I<sup>2</sup>, this movement of the hammer G has moved lever E and pin 2 to their normal position, where it catches the star-throw and holds it, as before. The hammer strikes a single blow upon the bell or gong, and is at the same time brought into a position to be retained by the latch I until the armature



be again attracted and the hammer released, when the operation is repeated as before. It will be noticed that lever L is returned to its normal position by coil-spring S.

5 The bell or gong is not shown in the drawings, but is to be so placed as to receive the blow of the hammer. A proper arrangement is to support the gong upon a post fixed in the wooden frame below the case containing the  
10 mechanism from which the hammer projects.

Having thus explained my invention and its operation, what I claim is—

1. In an electro-mechanical gong, the combination of the star-throw D with lever H,  
15 provided with pin I<sup>2</sup>, hammer G, dog F, standard I I, and plate E, movably pivoted at 3 and having pins 1 and 2, substantially as and for the purpose set forth.

2. In combination with a clock mechanism and electro-magnet, a locking and unlocking 20 device consisting of a lever or throw wheel, D, lever H, having pin I<sup>2</sup>, hammer G, dog F, standard I I, movable plate E, with pins 1 and 2, and a latching device consisting of latch-lever L, with pins 6 and 7, pivoted at 5, and hav- 25 ing latch I, pivoted at 4, and an armature, M, provided with a lip or extension, K, having a pin, 8, all substantially as and for the purposes described.

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Witnesses:

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