(No Model.)

J. REDDING.

GONG.

No. 528,112. Patented Oct. 23, 1894.

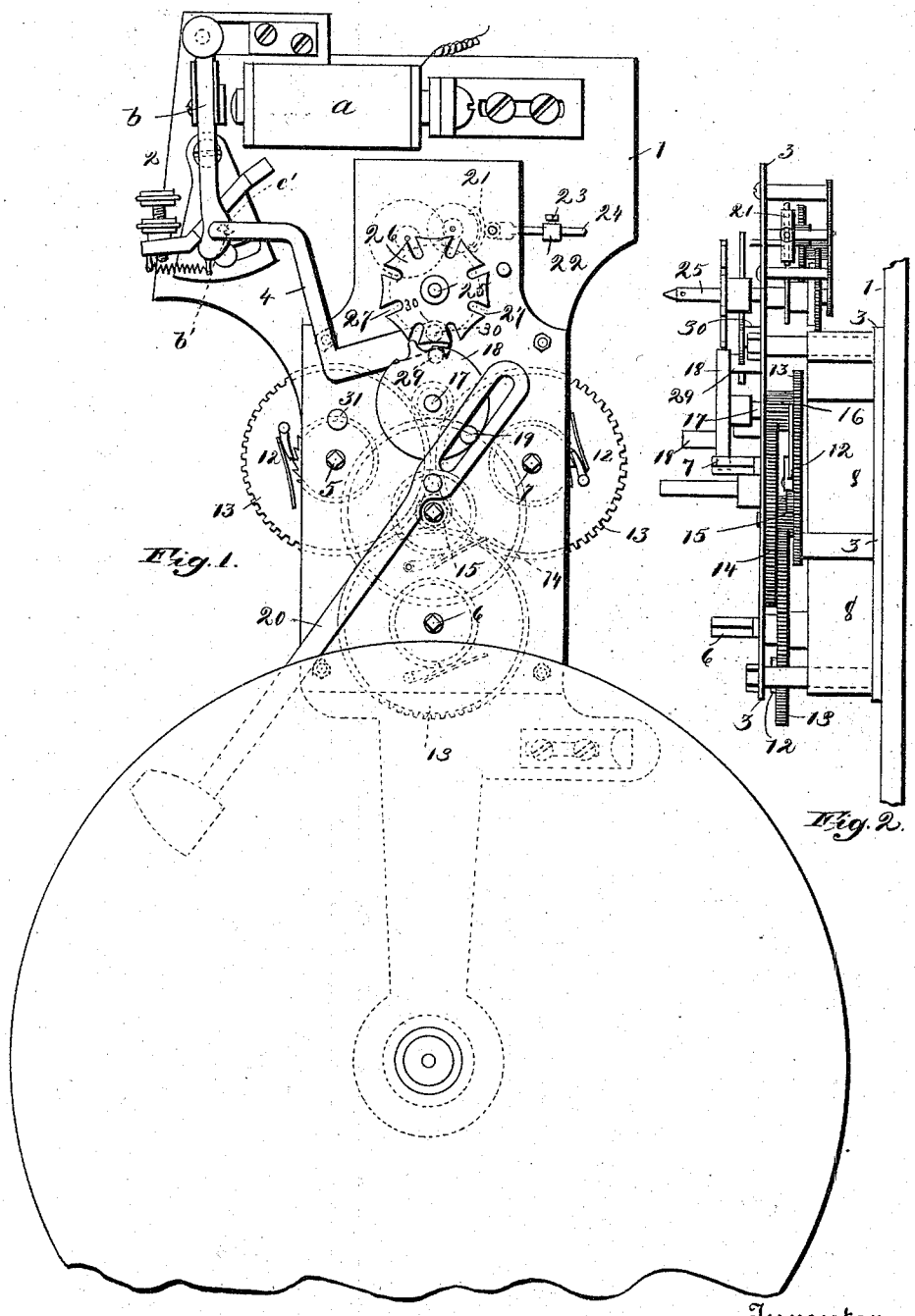

Fig. 1.

Fig. 2.

Witnesses
C. L. Cushman
E. K. Stuntevant.

Inventor
Jerome Redding
By Wright, Brown & Crosley
Attorneys

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UNITED STATES PATENT OFFICE.

JEROME REDDING, OF MALDEN, MASSACHUSETTS.

GONG.

SPECIFICATION forming part of Letters Patent No. 528,112, dated October 23, 1894.

Application filed July 20, 1891. Serial No. 400,031. (No model.)

To all whom it may concern:

Be it known that I, JEROME REDDING, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Electric Gongs, of which the following is a specification.

My invention relates to that class of gongs in which the hammer is operated by a train of gearing which actuates it through the medium of an electrically operated let-off device. Heretofore devices of this class have not given satisfaction in power and evenness of stroke, being both too rapid and lacking in force.

The object of this invention is to provide an inexpensive, durable and more effective mechanism for operating the hammer of a gong; also to provide a means for regulating the strokes of the hammer, whereby an exact time is allowed to lapse between the strokes.

The invention consists in certain features of novelty more particularly pointed out in the claims, being first described with reference to the accompanying drawings, in which—

Figure 1 is a face view of the complete device with the outside casing removed. Fig. 2 is an edge view of the hammer operating mechanism.

The supporting plate 1 is located in any desirable manner within a casing (not shown) and to this bed 1 is secured the let-off device 2 consisting of an electro magnet *a*, and an armature lever *b* having a laterally projecting lug *b'* at its lower end, as shown in dotted lines. This lug is triangular in cross section, with its flat side uppermost. To the bed 1 is secured the casing 3 which contains my improved hammer operating mechanism. Said mechanism operates in connection with the let-off device 2 through the medium of the trigger lever 4 which carries at its outer end a triangular shaped lug *c'* with its flat side underneath, and adapted to rest on the lug *b'*. Within the casing 3 are mounted arbors 5, 6, 7 each actuated by a helical spring 8. These arbors operate (through ratchet wheel and pawl 12) spur gears 13 which combine in applying the power of the three springs 8 to the spur gear 14 through the medium of its pinion 15. Thus the power of the three springs 8 is applied to the spur gear 14 which gears with the pinion 16 mounted on the shaft 17. This shaft 17 carries a disk 18 provided with a pin 19 which operates the hammer 20.

I do not claim herein the plurality of actuating springs and their arbors and gears fixed on the said arbors, and a central arbor having a pinion engaging each one of the said gears, the same being the subject matter of a new application filed by me August 26, 1892, Serial No. 444,232.

In order to give an even stroke to the hammer, I have provided an adjustable regulating device consisting of a train of gearing operating the ordinary escapement wheel and verge 21 which latter is provided with a rod or arm 24 carrying a collar 22 and set screw 23. By the adjustment of said collar 22 on the rod 24 the time between the strokes of the hammer may be regulated. On the shaft 25 of the regulating device, is secured a disk 26 formed with radial notches 27 which are engaged by a pin 28 on the periphery of the disk 18. The periphery of the disk 26 is formed between the notches 27 with concavities concentric with the axis of the shaft 17, thus securing the disk 26 against rotation except by the pin 28. This however is not essential to the perfect working of the device as an ordinary notched disk would perform the same duty. The disk 18 is provided on its under side with a pin 29 which engages the hooked end of the trigger lever 4, which lever has its fulcrum at 30 and carries at its outer end, the lug or pin *c'* above referred to. A stop 31 limits the movement of the lever 4, and the pin 29 on the disk 18 returns said lever to operative position, the inclined faces of the two lugs *b'* and *c'* permitting the upward movement of the lever 4 to carry the pin or lug *c'* past the pin or lug *b'*, so that the flat sides of the two pins may rest again in their normal position as shown. As shown in the drawings the arbors 5, 6, and 7 are squared so that a key may be fitted thereover and operated to wind the springs 8; but instead of winding the three springs separately, I may square the end of the arbor supporting the pinion 15 as shown and by the application of

a key thereto wind the said springs at a single operation, and this provision is in many instances very desirable.

The operation is as follows: The let-off device 2 is operated through the medium of an electro magnet, and the lever 4 being released, the pressure of the pin 29 on its hooked end, swings said lever on its fulcrum 30 and releases the disk 18. The pin 28 now acts on the notched disk 26 and moves it one notch in the time determined by the regulator. While this operation is going on, the hammer is being slowly drawn backward, and when the disk 26 has moved one notch, the pin 28 is released, and the force of the springs 8 is united in throwing the hammer forward against the gong. Simultaneously with the stroke of the hammer, the pin 29 returns the trigger lever 4 to its normal position and the parts assume the position shown in Fig. 1, provided the electro magnet has ceased to attract its armature; but as long as the said magnet holds its armature in such position that the lever 4 will be free to drop, the mechanism will continue to act, the hammer striking the gong with more or less rapidity according to the position of the weight or collar 22 on the pallet 21.

I do not limit myself to the particular means for operating the hammer lever from the disk 18; nor to operating the let-off device by an electro magnet, as it is obvious that the latter may be operated mechanically; nor do I confine myself to the exact form and arrangement of other parts of the contrivance, since these may be varied without departing from the nature or spirit of the invention.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination in a gong striking mechanism including a motor, a gong, and hammer, of a let-off mechanism for releasing said striking mechanism, and an adjustable regulating device for altering the degree of rapidity of the strokes of the gong, substantially as described.

2. The combination with a gong striking mechanism consisting of three driving springs and intermediate gearing, a pivoted hammer lever, a crank or disk and connecting means for operating the hammer lever from said crank or disk, and a pin for engaging a trigger lever, a let-off mechanism, and an adjustable regulating device for altering the degree of rapidity of the strokes of the gong.

3. The combination with a gong striking mechanism, of a regulating device, operated by said striking mechanism, and operating through a train of gearing, an escapement and verge provided with a rod and adjustable collar for the purpose of regulating the time between the strokes of the hammer, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 13th day of July, A. D. 1891.

JEROME REDDING.

Witnesses:
ARTHUR W. CROSSLEY,
EWING W. HAMLEN.