

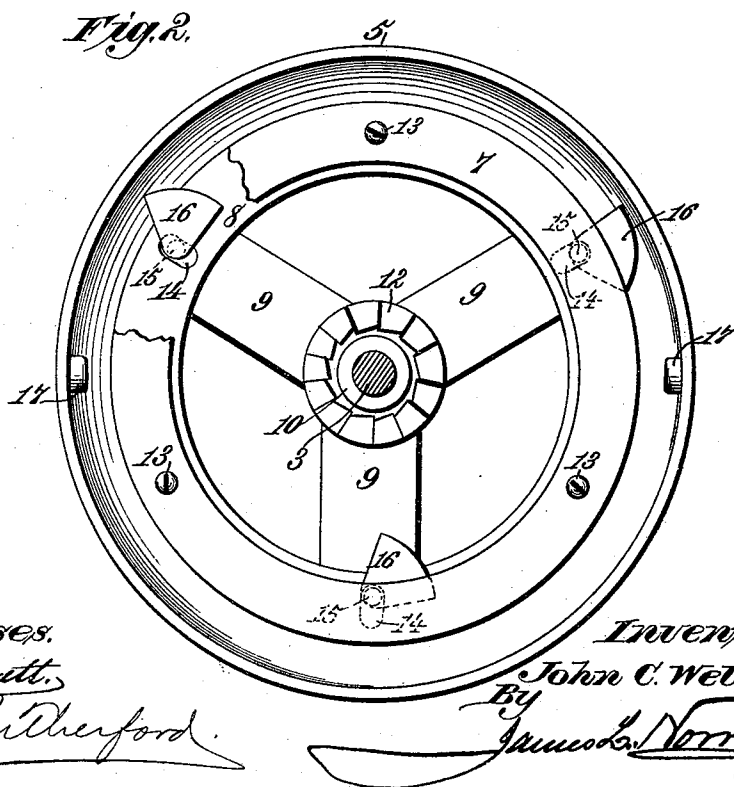
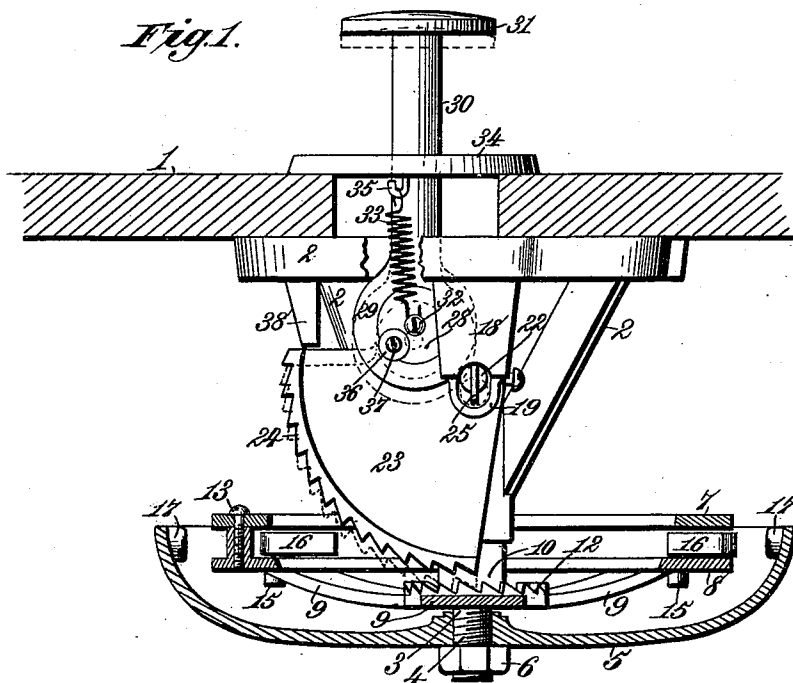
(No Model.)

2 Sheets—Sheet 1.

J. C. WELLS.
GONG SIGNAL.

No. 470,025.

Patented Mar. 1, 1892.



Witnesses.
Robert G. Smith.
J. A. Rutherford.

Inventor.
John C. Wells.
By James L. Norris.
Att'y.

(No Model.)

2 Sheets—Sheet 2.

J. C. WELLS.
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Fig. 3.

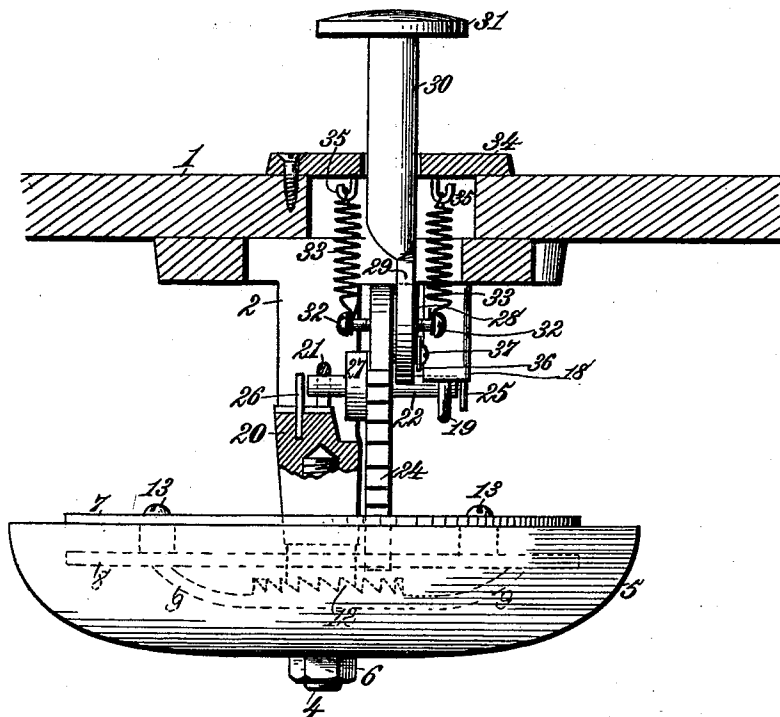


Fig. 4.

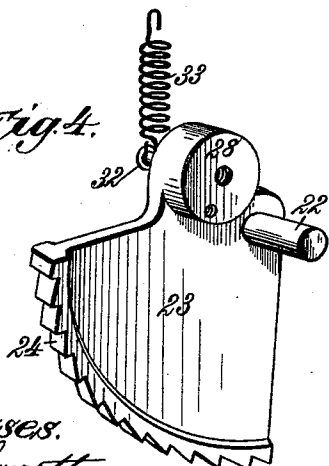


Fig. 5.

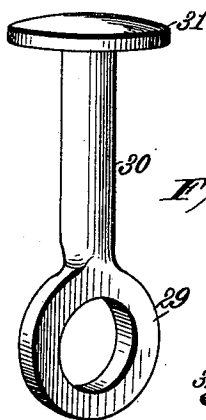
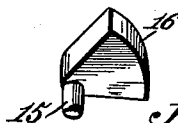


Fig. 6.



Witnesses.

Robert Emmett.

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Atty.

UNITED STATES PATENT OFFICE

JOHN C. WELLS, OF EAST HAMPTON, CONNECTICUT, ASSIGNOR TO THE BEVIN BROTHERS MANUFACTURING COMPANY, OF SAME PLACE.

GONG-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 470,025, dated March 1, 1892.

Application filed October 24, 1891. Serial No. 409,883. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. WELLS, a citizen of the United States, residing at East Hampton, in the county of Middlesex and State of Connecticut, have invented new and useful Improvements in Gong-Signals, of which the following is a specification.

This invention relates to that type of gongs wherein a hammer-carrier is rotated through the medium of a toothed segment engaging the carrier and oscillated or rocked by the depression of a pedal, the several operating parts being restored to their normal position through the medium of a spring.

The object of my invention is to improve the prior construction and to provide means whereby the carrier-driving segment and the pedal or segment-actuator are restored to their normal position while the momentum of the carrier continues its rotation in the direction imparted thereto by the depression of the pedal or actuator for the purpose of prolonging the sounding of the gong or bell by a single movement of the pedal or actuator and avoiding the sudden shock incident to the reaction caused by suddenly stopping and reversing the motion of the carrier for restoring all the operating parts to their normal position.

The invention also has for its objects to reduce the strain on the spring which restores the parts to normal position, to render it possible to employ a spring of less power while prolonging its life and usefulness, and to otherwise render the audible signal more efficient and useful in practical operation.

To accomplish all these objects my invention involves the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical central section of the gong-signal, some of the parts being in elevation. Fig. 2 is a broken plan view, looking at the interior of the bell or gong. Fig. 3 is a side elevation, partly in section, looking in the direction of the arrow, Fig. 1; and Figs. 4, 5, and 6 are detail perspective views hereinafter explained.

In order to enable those skilled in the art

to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates the floor or frame of a cable-railway car or any other structure to which the invention is to be applied according to the purpose for which it is intended. The inner or under side of the frame is provided with an attached pendent bracket 2, having at its lower extremity a spindle 3, having a screw-threaded extremity 4, which passes through a central orifice in the bell or gong 5 and is provided with a screw-nut 6 for securing the bell or gong in position and thereby suspending it from the spindle. This spindle constitutes a journal for the rotary hammer-carrier composed of upper and lower rings 7 and 8, the latter being attached to radial arms 9, joined at their center to a hub or disk 10, which is formed with a ratchet-face 12. The upper and lower rings 7 and 8 are connected by vertical pins 13 and the lower ring is provided at intervals with a series of radial slots 14, which receive studs or projections 15 on the freely-swinging hammers 16 in such manner that when the carrier is rotated the hammers are thrown outward by centrifugal force and successively strike a projection 17, extending from the inner surface of the bell or gong 5 for sounding the latter.

The bracket 2 is formed or otherwise provided with a pendent arm 18, having at its lower extremity a loop or other suitable guide 19, and the central portion 20 of the bracket is formed with an upwardly-projecting loop or other suitable guide 21, these loops or guides receiving the extremities of a shaft or axle 22, extending from opposite sides of a segment 23, having its curved edge provided with a line of ratchet-teeth 24, adapted to engage and disengage the ratchet-wheel 12 of the rotary hammer-carrier. The shaft or axle 22 is held against longitudinal displacement by suitable stops 25 and 26, mounted, respectively, on the pendent arm 18 and the central portion 20 of the bracket 2. I prefer to construct the segment with a bearing 27 at one side thereof, through which extends the separate shaft or axle 22; but obviously the segment and shaft could be formed in a single

piece. The shaft or axle 22 normally bears at one end against the lower extremity of the pendent arm 18 and at the opposite end against the upper end of the loop 21. The loops 19 and 21 are of such width that they properly retain the shaft or axle; but the height or length of the loops is such that the shaft or axle is capable of rising and falling in a vertical plane while axially turning or rotating in the loops 19 and 21, so that the toothed segment moves vertically when swung in the arc of a circle, as will more fully hereinafter appear.

The segment is provided at its upper portion with a cylindrical laterally projecting hub 28, which is encircled by a ring 29, formed with or otherwise provided at the lower extremity of a reciprocating spindle or rod 30, having at its opposite extremity a pedal or foot-piece 31. The cylindrical hub 28 is provided with horizontally-projecting studs, pins, or screws 32, with which are engaged the lower ends of a pair of spiral or other springs 33, having their upper ends connected with a plate 34 by means of hooks 35 or other suitable means. The ring 29 of the spindle or rod 30 is held against lateral displacement from the hub 28 through the medium of a washer 36, confined in place by a screw 37, which is screwed into the hub 28, so that the washer overlaps the ring 29. I do not, however, confine myself to this specific construction, as other devices for accomplishing this result can be employed.

It will be obvious from the foregoing that the toothed segment or actuator 23 is sustained by a yielding suspension device in such manner that the segment or actuator will yield downwardly when the spindle or rod 30 is depressed, thereby causing the ratchet-teeth 24 to move into engagement with the ratchet-wheel 12, and at the same time the segment swings on its shaft or axle 22 for the purpose of turning the ratchet-face 12, and thereby imparting rotary motion to the hammer-carrier. The instant the spindle or rod 30 is released the segment is lifted out of engagement with the ratchet-wheel and is swung backward to its normal position for a repetition of the operation. The back-stroke of the segment is preferably limited by a stop 38, formed or provided on the bracket 2.

The retraction of the toothed segment and the spindle or rod to their normal position is effected by the spring suspension device; but such retraction does not in any manner whatever affect the action of the hammer-carrier, and the latter continues its rotation in the direction imparted thereto by the depression of the spindle or rod 30, as before explained. By this means I obtain a more prolonged sound of the bell or gong by a single movement of the pedal mechanism and avoid the sudden shock incident to the reaction caused by suddenly stopping and reversing the motion of the rotary hammer-carrier, as in the prior construction, where the segment is per-

manently in gear with a pinion on the rotary hammer-carrier.

By my invention I avoid undue strain on the spring devices which restore the pedal mechanism to its normal position, and since the spring devices are not required to check and reverse the rotary motion of the hammer-carrier I am enabled to employ a spring of less power while prolonging its life and usefulness.

The hammers, which are loosely carried by the rotary carrier, are susceptible of being thrown out by centrifugal force for the purpose of successively striking the projection 17 on the inner surface of the bell or gong, and by providing these hammers with studs or projections 15, working in radial slots 14 of the hammer-carrier, I materially increase the life of the hammers and render them far more substantial and durable than that construction of hammer which is formed with an elongated slot through which projects a stationary pin, so that the hammers can freely swing on such pins.

I do not confine myself to the employment of a pedal or foot-piece 31 for actuating the spindle or rod 30, as pressure on the latter can be exerted through the medium of any other suitable means.

By the construction and arrangement described the toothed segment rises, falls, and swings in a vertical plane parallel with the axis on which the hammer-carrier rotates, and since the latter is journaled on the same spindle which supports the bell at its center, the apparatus is materially simplified and rendered more economical of manufacture and efficient in operation.

The invention is particularly designed for use on cable-railway cars, and the parts are so organized as to render it possible for the gripman to employ both hands in operating the brakes and grip while producing rapid and repeated strokes on the bell or gong by a single movement of the foot.

Having thus described my invention, what I claim is—

1. The combination, with a gong having an internal projection and a rotary hammer-carrier having a radial slot, of a hammer formed integral with a rigidly-projecting stud which works back and forth in the slot, substantially as described.

2. The combination, with a gong having an internal projection and a bracket having a spindle to which the bell is secured at its center, of a rotary hammer-carrier journaled on the spindle and provided with a toothed wheel, a vertically-yielding actuator or segment having teeth for engaging the teeth of the carrier, a spring suspension device for sustaining the actuator or segment and enabling it to yield for engaging and disengaging the toothed wheel, and means for operating the actuator or segment, substantially as described.

3. The combination, with a gong or bell, of

a rotary hammer-carrier having a toothed wheel, a yielding toothed actuator or segment for engaging and disengaging the toothed wheel, a spring yielding suspension device
 5 for sustaining the actuator or segment, and a reciprocating spindle or rod for operating the actuator or segment, substantially as described.

4. The combination, with a gong or bell, of
 10 a rotary hammer-carrier having a toothed wheel, a yielding toothed actuator or segment having teeth for engaging and disengaging the toothed wheel of the hammer-carrier, a spring device connected with the actuator or
 15 segment and serving to normally sustain the same out of engagement with the toothed wheel, and means for operating the actuator or segment to throw it into engagement with the toothed wheel for rotating the hammer-
 20 carrier, substantially as described.

5. The combination, with a bracket having a spindle and a gong or bell supported by the spindle, of a rotary hammer-carrier journaled on the spindle and having a toothed wheel, a
 25 rising, falling, and oscillating toothed actuator or segment for engaging the toothed wheel of the hammer-carrier, a spring suspension device for normally holding the actuator or segment out of engagement with the
 30 toothed wheel, and a reciprocating spindle or rod having one extremity loosely attached to the actuator or segment, substantially as described.

6. The combination, with a bracket and a
 35 gong or bell supported thereby, of a rotary

hammer-carrier having a toothed wheel, a rising, falling, and oscillating toothed actuator or segment having a laterally-projecting hub in proximity to its center of oscillation, a spring suspension device connected with the
 40 actuator or segment for normally holding the latter out of engagement with the toothed wheel, and a reciprocating spindle or rod having a ring at one extremity which encircles the hub of the actuator or segment, substan-
 45 tially as described.

7. The combination, with a bracket and a gong or bell supported thereby, of a rotary hammer-carrier having a toothed wheel and a series of radial slots, a series of loosely-
 50 swinging hammers provided with studs or projections which work back and forth in the slots of the hammer-carrier, a rising, falling, and oscillating toothed actuator or segment for engaging the toothed wheel of the ham-
 55 mer, a spring suspension device connected with the actuator or segment and serving to normally hold it out of engagement with the toothed wheel of the hammer-carrier, and a reciprocating spindle or rod provided with a
 60 pedal or foot-piece and loosely attached to the actuator or segment in proximity to its center of oscillation, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of
 65 two subscribing witnesses.

JOHN C. WELLS. [L. S.]

Witnesses:

ABNER AVERY BEVIN,
 LOIS J. BARTON.