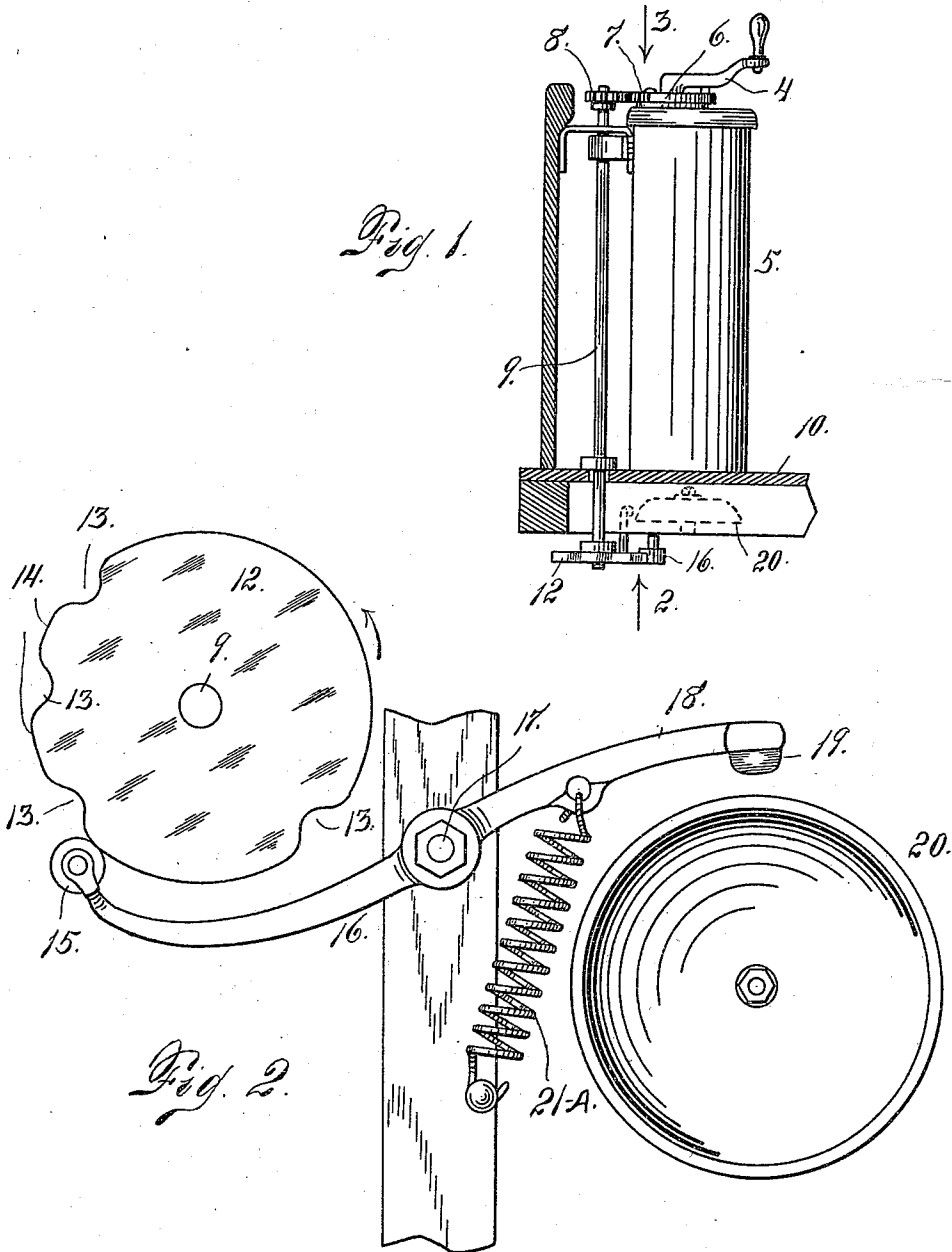


J. E. E. NASH.
 CONTROLLER OPERATED GONG FOR ELECTRIC CARS.
 APPLICATION FILED APR. 29, 1910.

1,004,675.

Patented Oct. 3, 1911.

3 SHEETS-SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 4.

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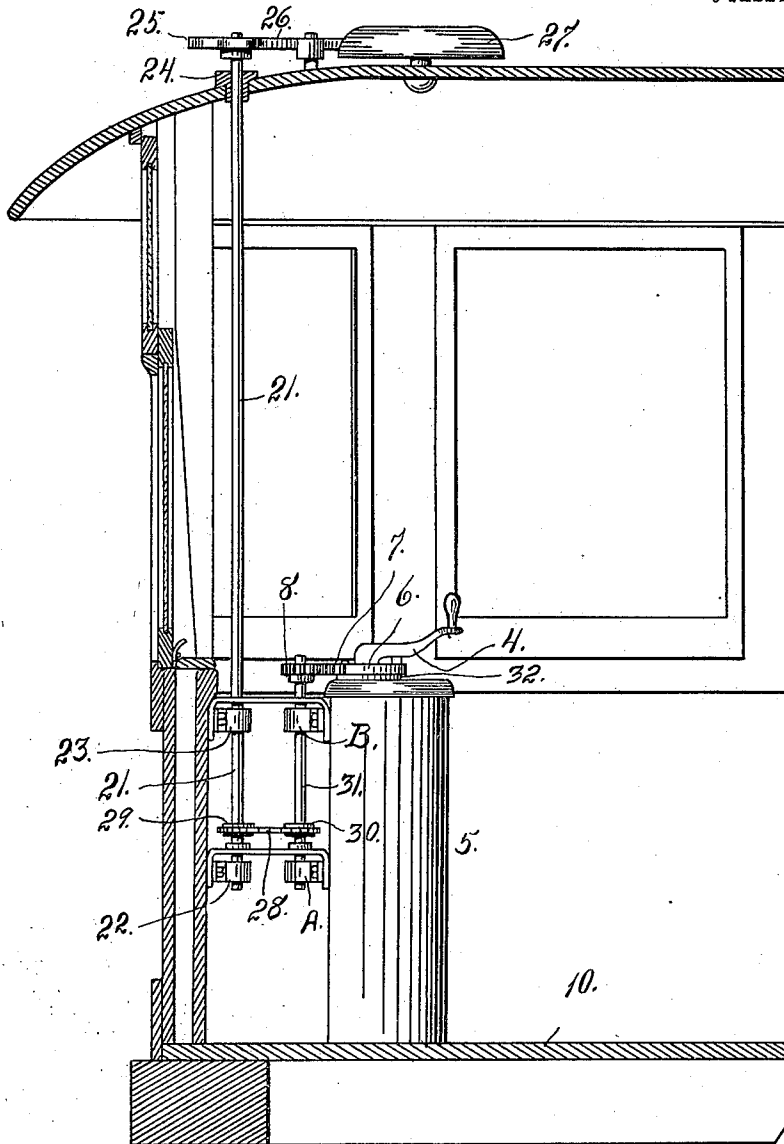


Fig. 5.

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CONTROLLER-OPERATED GONG FOR ELECTRIC CARS.

1,004,675.

Specification of Letters Patent.

Patented Oct. 3, 1911.

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To all whom it may concern:

Be it known that I, JOHN E. E. NASH, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Controller-Operated Gongs for Electric Cars; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in means for operating or sounding gongs on electric cars, my object being to make it impossible to stop or start the car without operating the gong. In accomplishing this object, I provide means connected with the controller and operated by the crank of the latter whereby the gong is simultaneously sounded, during the manipulation of the controller, for the purpose of stopping or starting the car.

It often happens after a wreck that the very serious question arises whether or not the motorman sounded the gong and thereby gave the proper danger signal. With my improved construction this question is eliminated since the controller cannot be operated, at least for starting or stopping the car, without sounding the gong.

The gong may be located either under the platform or floor vestibule of the car, or on top thereof, as may be desired, without interfering in any manner with the sounding thereof, though the construction must be slightly modified in order to sound the gong in the two different locations.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing: Figure 1 is a side elevation of a controller showing the floor and dashboard of the car vestibule in section, the controller being equipped with my improvements. Fig. 2 is an underneath view of the construction, or a view looking in the direction of arrow 2, Fig. 1, the parts being shown on a larger scale. Fig. 3 is a top plan view of a controller equipped with my improvements, the

parts being also shown on a larger scale than in Fig. 1. Fig. 4 is a similar view showing the parts in different relative positions. Fig. 5 is a sectional view taken through the front part of the car, showing a controller equipped for operating a gong located on top of the car.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the controller of an electric car, and 4 the crank arm for manipulating the same, whereby the current may be turned on and off the car. This controller is equipped on top with a toothed disk or segmental gear 6 having teeth or cogs 7 adapted to mesh with a relatively small gear 8 mounted on a shaft 9 extending downwardly from the top of the controller but outside the shell or casing of the latter. The lower extremity of this shaft 9 which extends below the floor 10 of the car vestibule, is equipped with a wheel 12 having cam recesses 13 and intervening cams 14.

It must be understood that the cam disk 12 engages the roller extremity 15 of a lever 16 fulcrumed on a stationary support at 17, its opposite arm 18 carrying a sort of hammer 19, within easy reach of the gong 20, against which the spring 21^a has a tendency to throw the hammer extremity of the lever. When, however, it is desired to locate the gong on the top of the car, a countershaft 21 is journaled in boxes 22 and 23 and in the top of the car as shown at 24. This countershaft 21 passes through the top of the car, and on its outer extremity is a cam-wheel 25 substantially similar to the cam-wheel 12. This cam-wheel is arranged to act upon one end of a lever 26 which is substantially the same as the lever 16, shown in Fig. 2, while the opposite extremity of the lever acts upon a gong 27, mounted on top of the car. The countershaft 21 is connected by a chain 28 with a short shaft 31 journaled in boxes A and B and whose upper extremity is provided with a gear 8, the same as in the other form of construction, the said gear being operated by the toothed portion of the segmental gear 6 which is fitted to the rotary top part 32 of the controller, the latter being provided with lugs 2 and 3 between which the crank arm 4 is located. The chain 28 engages sprocket wheels 29 and 30 mounted on the respective shafts. It will be understood that no change whatever is made in the controller itself, the

toothed disk 6 being simply adapted to harmonize with the controller construction, whereby it may be manipulated by the crank 4 while in the regular performance of its function. In order to make room for the lugs 2 and 3 and an additional lug 1 formed on the rotary controller part 32, the disk 6 has a segmental opening 33 formed therein. This disk is also cut out at the center as shown at 34 to make room for the post upon which the crank 4 is fitted. It will be understood that the crank 4 is readily removable so that the motorman may use it interchangeably on a controller on either end of the car.

The disk 6 may have any desired number of teeth 7, but they should be so arranged that they will engage the gear 8 during the initial movement of the crank for starting the car, and during the final movement of the controller in stopping the car. As the gear 8 is relatively small, only a comparatively small portion of the periphery of the disk 6 need be equipped with teeth or cogs, since it is not desired that the gong should be rung or sounded every time the handle or crank is moved in the operation of increasing and diminishing the supply of current to the motors. Hence, as shown in the drawing, the larger portion of the periphery of the disk 6 is plain and one of the teeth or cogs, designated 8^a, is made relatively large, its outer surface being adapted to engage the plain portion of the periphery of the disk 6 when the latter is moved, without operating the gear. It will be understood that the radius of the plain portion of the disk conforms to a radius whose outer extremity terminates at the bottom of the cogs 7. In other words, the plain portion of the disk has a radius equal to that of the cogged portion with the cogs removed. For this reason it becomes practicable to rotate the disk 6 when its plain portion is adjacent gear 8 without actuating the latter. In this case the outer face of the tooth or cog 8^a is tangential to the plain peripheral portion of the disk 6.

It must of course be understood that the invention is not limited to the details of construction herein shown, as I am aware that many modifications may be employed without departing from the spirit of the invention as defined by the scope of the appended claims.

As heretofore stated, the teeth or cogs 7 of the disk 6 are so located that they operate the alarm or sound the gong during the starting and stopping movement of the controller. It is desirable, however, that provision should be made for operating the gong when the car is under full speed or practically so, without interfering with its speed or movement; and to this end I have equipped the disk 6 with a cog 7^a

somewhat removed from the series of cogs 7, so that after the cogs 7 are moved out of mesh with the gear 8, whereby the car is placed under full speed, or the usual speed which it is allowed to run, the tooth 7^a may be caused to engage the gear 8, and the disk 6 moved back and forth a short distance for any given length of time, whereby the gong or alarm device, is sounded or operated, while at the same time the movement of the controller is not sufficient to interfere with the speed of the car.

Having thus described my invention, what I claim is:

1. The combination with the controller and an alarm device of an electric car, of an operative connection between the controller and the alarm device, including a gear mounted on the controller and a second gear actuated by the controller gear, the latter having a portion only of its periphery toothed, the arrangement being such that the alarm is operated during the starting and stopping portions of the controller movement.

2. The combination with the controller and alarm device of an electric car, of an operative connection between the controller and said device, including a relatively large disk mounted on the controller to be operated by the crank thereof, said disk having a toothed portion and a plain portion and a relatively small gear located to be actuated by the toothed portion of the controller-actuated disk, the said toothed portion being arranged to mesh with the adjacent gear during the starting and stopping action of the controller, the controller-disk having a tooth removed from the initial and stopping toothed portion of the disk, whereby, it becomes practicable by a slight reciprocating movement of the toothed controller-disk to operate the alarm when the car is at full speed without materially interfering with the movement of the car.

3. The combination with a controller and an alarm device of an electric motor, an operative connection between the controller and the said device including a disk having a toothed portion and a plain portion, the said disk being mounted on the controller and operated by the crank thereof, and a gear actuated by the toothed portion of the said disk, the toothed portion of the said disk being arranged to mesh with the adjacent gear during the starting and stopping action of the controller, whereby as the controller is operated for starting and stopping the car the alarm device is actuated, for the purpose set forth.

4. The combination with a controller and an alarm device of an electric car, of an operative connection between the controller and the alarm device including a disk having a portion of its periphery toothed and

the remainder plain, the said disk being mounted on the controller and operated by the crank thereof, a gear actuated by the toothed portion of the said disk, a spring-held lever located adjacent the alarm device and connected in operative relation with the said gear wheel, whereby as the controller is operated for stopping and starting the car, the said lever is oscillated and caused to strike the alarm, substantially as described.

5. The combination with the controller and alarm device of an electric car, of means interposed between the controller and alarm device for actuating the alarm device, the said means including a disk mounted on the controller and provided with a toothed

portion and a plain portion, a gear actuated by the toothed portion of the said disk, the toothed portion of the disk being arranged to mesh with the adjacent gear during the starting and stopping action of the controller, a cam wheel operated by the said gear, and a spring-held lever in operative relation with the alarm and with the said cam wheel, whereby when the toothed disk is actuated the said cam wheel is caused to oscillate the lever, for the purpose set forth.

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

JOHN E. E. NASH.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."