

(No Model.)

T. P. SWIN & J. L. CARR.

MEANS FOR OPERATING BELLS AND INDICATORS IN STREET CARS, &c.

No. 358,129.

Patented Feb. 22, 1887.

Fig. 1.

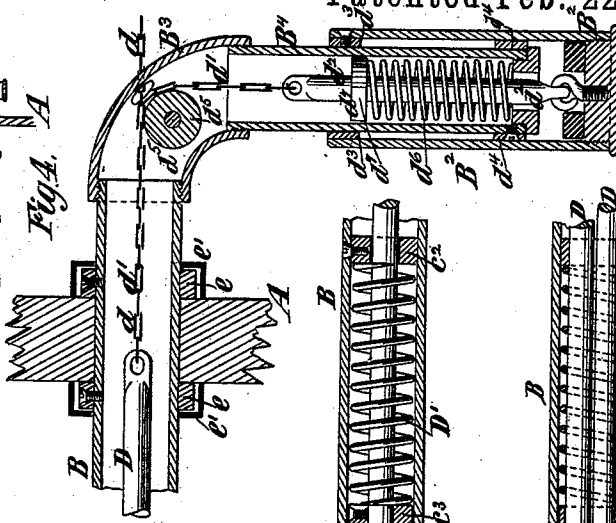
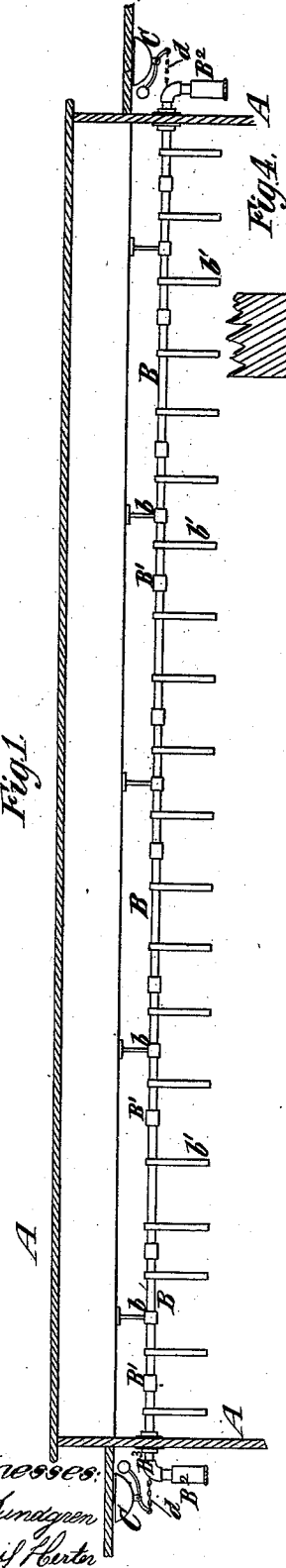


Fig. 2.

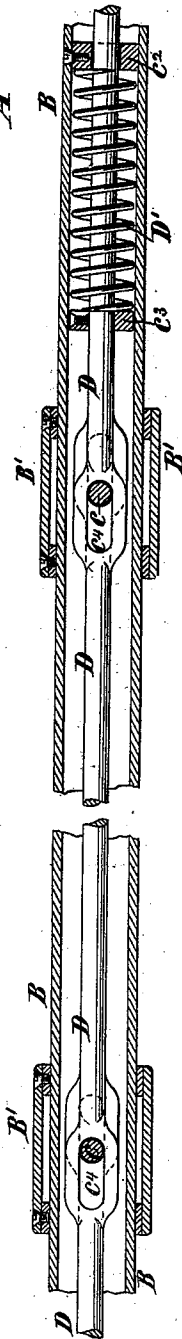
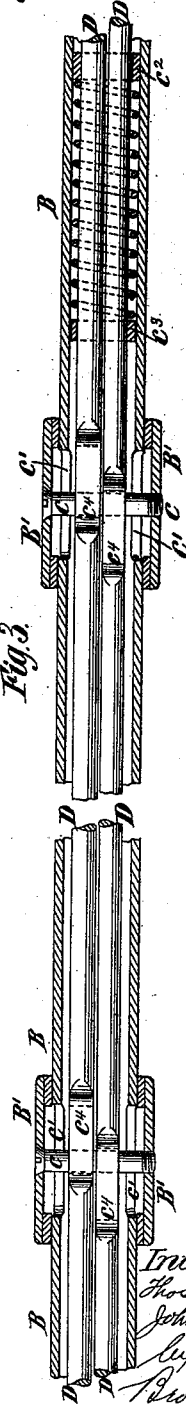


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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MEANS FOR OPERATING BELLS AND INDICATORS IN STREET-CARS, &c.

SPECIFICATION forming part of Letters Patent No. 358,129, dated February 22, 1887.

Application filed March 30, 1886. Serial No. 197,116. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS P. SWIN and JOHN L. CARR, both of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Means for Operating Bells and Indicators in Street-Cars and other Vehicles, of which the following is a specification.

In street-cars the bells or gongs on the two platforms have usually been operated by means of leather straps which have been connected with a bell-hammer or with a sliding rod, which itself is connected with such hammer. Such straps are liable to break and require frequent repair, and which are also unsightly and in the way of passengers.

The object of our invention is to provide a simple and durable combination of devices for operating the bells and gongs, which will not be liable to get out of repair and which are not unsightly in a car or vehicle, and a similar means may also be employed for operating the passenger indicators or registers, which are commonly secured at the end or ends of the car or vehicle.

According to our invention, we arrange in a car or vehicle, and in the place ordinarily occupied by the wood or metal rod from which the holding-straps are suspended, a hollow rod or tube, and through this tube extend pull-rods which are connected with handles at the exterior of the tube at intervals in the length of the tube, and which also have connected with them a pull which is accessible from the platform. For operating the two bells or gongs at opposite ends of the car we prefer to employ two parallel pull-rods extending through a single tube, and the handles for operating these rods may consist of sleeves sliding upon the exterior of the tube and connected with the pull-rod by means of cross-pins which extend through slots in the tube and through slots in the rods. We also employ springs for moving the rods lengthwise, in order that they may recover themselves after being moved to ring the bell, and where two pull-rods are arranged within a single tube these springs will be arranged to move the rods in opposite directions, and will serve to keep opposite ends of the slots in the two rods against the cross-pins which connect them

with the sliding handles. With such construction the sliding sleeves or handles may be moved in one direction to move one rod for operating one of the bells or gongs, and may be moved in the other direction to move the other rod in a reverse direction for operating the other bell or gong.

The invention consists in novel combinations of parts which are hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation in a plane lengthwise of a car, showing the upper portion thereof, and a combination of mechanism which embodies our invention for operating the bells or gongs at opposite ends of the car. Fig. 2 is a vertical longitudinal section of a portion of one of the tubes and pull-rods upon a larger scale. Fig. 3 is a horizontal longitudinal section of the same parts and upon the same scale as Fig. 2. Fig. 4 is a vertical section of a portion of one end of the car and the platform-pull which is employed for operating the pull-rods, upon the same scale as Figs. 2 and 3.

Similar letters of reference designate corresponding parts in all the figures.

Referring first to Figs. 1, 2, 3, and 4, A designates parts of the car, and B a tube or hollow rod, which is hung by brackets *b*, and which occupies the position ordinarily occupied by the rod from which the holding-straps for passengers are suspended. The holding-straps *b'* are suspended from this tube B, and the tube may be made of wood or, preferably, of brass or other metal which has a bright finish and therefore presents a handsome appearance.

At opposite ends of the car are represented bells or gongs C, the hammers of which are connected with and operated by pull-rods D, arranged within and movable lengthwise of the tube B. For the convenience of the conductor, we prefer to provide handles both at intervals in the length of the tube B and on the platforms of the car, by which the pull-rods D may be moved and one or other of the bells or gongs C operated.

We have here represented at intervals in the length of the tube B handles or pulls *B'*, and have also represented platform-pulls *B''* at opposite ends of the car or vehicle. The handles or pulls *B'* may consist of short sleeves or col-

lars which are adapted to slide upon the tube B in a direction lengthwise thereof, and these sleeves B' on the outside of the tube may be connected with the pull-rods D within the tube by means of cross-pins or screws c, which pass through slots c' in the tube, and through which lengthwise movement of the sleeves or handles B' produces the lengthwise movement of the pull-rods D. We also apply to the pull-rods D springs D', whereby they are moved lengthwise in one direction or made to recover themselves after being operated to ring one or other of the bells or gongs C, and we prefer to employ spiral springs, as shown in Figs 2 and 3, which abut at one end against a shoulder in the tube, which may be formed by a collar, c<sup>2</sup>, and abut at the other end against a collar, c<sup>3</sup>, which is fast to a pull-rod. Where two pull-rods for operating bells at opposite ends of the car are arranged within the tube B, as here shown, a similar spring, D', should be arranged at reverse ends of the two rods D, and, as here represented, the spring D' encircles both rods; but the collar c<sup>2</sup> against which it acts is secured only to the rod which it is desired to move by the spring. For example, the spring here shown in Figs. 2 and 3 will act against the collar c<sup>2</sup>, which is secured to one of the rods D, and a corresponding spring at the opposite end of the vehicle will act against a similar collar, which is secured to the other rod D. Where two pull-rods are arranged within a single tube, it is also necessary to provide in the rods slots c' for the reception of the cross-pins c, and the two springs which are applied to the rods serve to keep opposite ends of the slots in the two rods against the cross-pins c of the handles B', as will be readily understood from Figs. 2 and 3.

By moving any one of the sleeves or handles B' in one direction its cross-pin c will act on one of the rods D for moving it in one direction to ring one bell or gong, and by moving any one of the handles or sleeves B' in the other direction its cross-pin will act on the other rod D for operating the other bell or gong. In each movement of the handle or sleeve B' its cross-pin c plays freely in a slot, c', of the rod which it is not desired to operate.

One end of each pull-rod D is connected by a chain or other flexible connection, d, with the hammer of a bell or gong, and the other end of each rod is connected by a flexible connection, d', with a platform-pull, which is best shown in Fig. 4. In this figure A represents the end portion or dead-wood of the car, and the tube B is prolonged or has a continuation which is passed through the wood A, and by means of collars e, secured at opposite sides of the wood, is held against lengthwise movement. These collars e, which are secured by set-screws or otherwise upon the continuation of the tube B, may be covered by ornamental caps e'.

To the continuation of the tube B outside the car is secured a downwardly-presented

bend or elbow, B<sup>3</sup>, having extending downward from it a section of tube, B<sup>4</sup>, and on the section of tube B<sup>4</sup> the platform-pull B<sup>2</sup> slides freely. The platform-pull B<sup>2</sup> consists of a section of tube which is closed at the lower end and connected by a rod, d<sup>2</sup>, with a flexible connection, d', of a pull-rod, D, and when it is desired to ring the bell at the other end of the car the pull B<sup>2</sup> is drawn downward and through the stem d<sup>2</sup>, and the chain or flexible connection d' moves the proper pull-rod D. Too great downward movement of the platform-pull B<sup>2</sup> is prevented by an internal shoulder, d<sup>3</sup>, formed by a bushing inserted therein, and an external shoulder, d<sup>4</sup>, which may be formed by a collar secured upon the tube-section B<sup>4</sup>. The chain or flexible connection d' runs over a pulley or sheave, d<sup>5</sup>, in the bend or elbow B<sup>3</sup>. In order that the platform-pull B<sup>2</sup> may not drop down when the pull-rod is moved by the handles or sleeves B' within the car, we have represented a separate spring, d<sup>6</sup>, for holding the platform-pull B<sup>2</sup> in an elevated position until it is drawn down by the hand applied to it. This spring d<sup>6</sup> may bear against a plug which closes the lower end of the tube-section B<sup>4</sup> and at the other end abuts against a collar, d<sup>7</sup>, on the stem d<sup>2</sup>.

It will be understood that the platform-pulls B<sup>2</sup> at opposite ends of the car are constructed in the manner described, and are connected one with each of the two pull-rods D.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, with a tube fixed in position lengthwise of a car or vehicle, of a pull-rod movable lengthwise in said tube, and handles or pulls on the exterior of the tube, connected with said rod for moving it lengthwise, the tube being slotted to receive the connections between said handles and rod and to permit the handles or pulls to be slid on the tube to move the rod, substantially as herein described.

2. The combination, with a slotted tube extending lengthwise in a car or vehicle, of a pull-rod movable lengthwise in the tube, and handles consisting of sleeves movable on the outside of the tube and connected with the pull-rod by cross-pins working in the slots in the tube, substantially as herein described.

3. The combination, with a slotted tube fixed in position lengthwise of a car or vehicle, of a pull-rod movable lengthwise in the tube, handles at the exterior of the tube, connected through the slots in the tube with the rod, for moving the rod lengthwise, and a spring applied to the rod within the tube and bearing against a shoulder in the tube for moving the rod lengthwise to recover itself after movement by the handles, substantially as herein described.

4. The combination, with a tube extending lengthwise within a car or vehicle, of two parallel pull-rods movable lengthwise within the tube for operating bells or devices at opposite ends of the car, handles at the exterior of the

tube connected with the pull-rods for operating them, and springs applied to the pull-rods within the tube for moving them in opposite directions to recover themselves after operation, substantially as herein described.

5 5. The combination, with a tube extending lengthwise in a car, of two parallel pull-rods movable lengthwise independently of one another in the tube, the tube and rods having  
10 coincident slots, as described, the sleeves B', sliding on the exterior of the tube and connected with the rods by cross-pins extending through the slots in the tube and rods, and  
15 springs applied to the rods for moving them in opposite directions to recover, and for keeping the opposite ends of the slots in the two rods against the cross-pins, substantially as herein described.

20 6. The combination, with a slotted tube fixed in position lengthwise of a car or vehicle, of a pull-rod movable lengthwise in the tube, and sliding handles at the exterior of the tube and connected with the rod through the slots in the tube for operating the rod, and a handle  
25 beyond the end of the car or vehicle body where it is accessible from the platform, and

connected with the rod for moving it within the tube, substantially as herein described.

7. The combination, with a tube extending lengthwise in a car or vehicle and having a  
30 continuation through the end thereof, of a pull-rod movable lengthwise in the tube, a downwardly-turned bend or elbow on the continuation of the tube, and a flexible connection extending from the pull-rod downward  
35 through said bend or elbow and provided with a pull, substantially as herein described.

8. The combination, with the tube B and its continuation through the end of the vehicle, of a pull-rod movable lengthwise in the tube,   
40 an elbow or bend on the continuation of the tube and having a downwardly-projecting section, B<sup>1</sup>, and the pull B<sup>2</sup>, sliding on the section B<sup>1</sup>, and having a flexible connection with the pull-rod within the tube, substan-  
45 tially as herein described.

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