C. C. EGERTON & H. M. GREEN.

Circuit-Closers for Electric Annunciators.

No. 213,500. Patented Mar. 25, 1879.

Fig. 1.

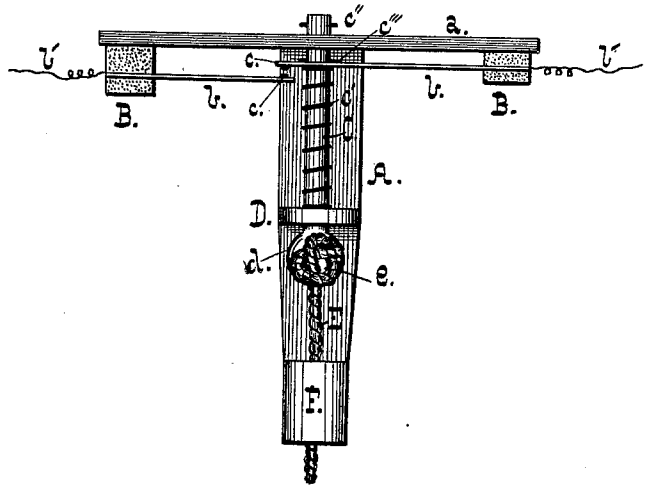
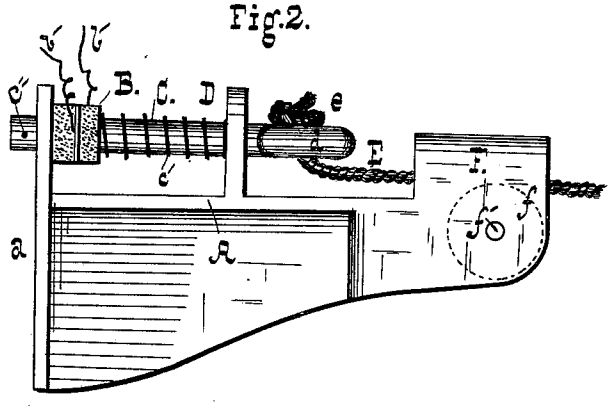



Fig. 2.




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## IMPROVEMENT IN CIRCUIT-CLOSERS FOR ELECTRIC ANNUNCIATORS.

Specification forming part of Letters Patent No. **213,500**, dated March 25, 1879; application filed January 3, 1879.

*To all whom it may concern:*

Be it known that we, C. CALVERT EGERTON and H. MORTON GREEN, both of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Circuit-Closers for Electric Annunciators; and we hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the device, and Fig. 2 a side elevation of the same.

While our present invention is adapted for use as a key or circuit-closer in various forms of electric annunciators or signal apparatus, it is especially designed for use in connection with the electric annunciator for railway-trains patented to Dexter H. Walker and C. Calvert Egerton July 16, 1878, and numbered 206,154.

To the end that the patented invention may be understood without necessarily referring to the Letters Patent, a brief description of it may here be given.

Throughout the train run a pair of insulated wires communicating with an ordinary electro-magnet, whose armature actuates a gong-hammer upon the engine. Between the cars the wires are joined by means of couplings, which are held together sufficiently strongly to prevent their separation by the jolts or agitations of the cars, but which readily part as the cars are uncoupled and separated. An ordinary electric battery is placed in the circuit, which is permanently open at the rear end of the train. Upon closing the circuit electric communication is established and the bell is rung. As an obvious alternative the circuit may be kept closed and intelligence be transmitted by breaking it.

In the accompanying drawings, A represents a bracket, preferably metallic, adapted to be attached, by means of screws inserted through the back *a*, to the end wall of the car. At either side of the back *a* is secured, in suitable rubber or equivalent insulators B B, a spring, *b*, having a platinum contact-point, *c*. To the springs *b* are attached wires *b'*, each communicating with one of the main line-wires through the train.

C is a rod, which is secured to the bracket A, and passes freely through the back *a* and a lug, D, and is prevented from being completely withdrawn by means of a pin, *c''*, which passes through its end beyond the back *a*. This rod is secured to the rearmost spring *b*, against which it is strongly pressed by a coiled spring, *c'*, that abuts against the lug D. A small pin, *c'''*, through the rod C serves as a bearing for the spring.

The end of the rod is perforated at *d*, and a cord, E, corresponding to the ordinary bell-rope, is knotted therein, as at *e*. The cord passes through a housing, F, at the end of the bracket, within which is pivoted, upon a pin, *f'*, a sheave, *f*.

Such is, in general terms, a description of the device, from which its mode of operation will have been made evident.

The device is secured preferably over the end doors in the case of an ordinary passenger railway-car, the cord E being led over pulleys in the usual manner, and secured at the opposite end of the car to a screw-eye; or it may be attached, if desired, to another circuit-closer of the same kind.

It is obvious that as the cord is pulled the rear spring *b* is drawn forward until its contact-point *c* closes circuit with that upon the other spring, and upon releasing the cord the circuit is broken, as the spring *c'* causes the points to separate. This spring is made stout enough to prevent the weight of the cord from compressing it, while admitting of its yielding to a pull from the hand. The housing F is designed to prevent any lateral strain from being brought upon the rod C as the cord is pulled.

As above stated, one of the devices may be secured at each end of the car, and this arrangement is preferred, as it is wholly immaterial whether one or both close circuit at the same time, and one answers every requisite should the other get out of repair.

The advantages of the described device over the usual bell-cord are many and great. To cause the engine-bell to ring from any one of the cars, it is obviously necessary, with the bell-cord, to take up the slack from the point where the pull is applied forward to the en-

gine—a proceeding causing trouble and delay. With the described device there is practically no slack rope and the delivery of the signal is certain and speedy.

We claim—

1. In combination with the bracket A, having springs *b* and connections *b'*, the rod C, spring *c'*, and cord E, substantially as described.

2. In combination with the bracket A, having lug D and springs *b*, the rod C, spring *c'*, pin *c''*, and cord E, substantially as described.

3. In combination with the bracket A, having springs *b*, the cord E and housing F, substantially as described.

Witness our hands this 2d day of January, 1879.

C. CALVERT EGERTON.
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Witnesses:
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