(No Model.)

J. P. CLARK.

ELECTRIC SIGNAL FOR RAILWAY TRAINS.

No. 265,757. Patented Oct. 10, 1882.

Fig. 1.

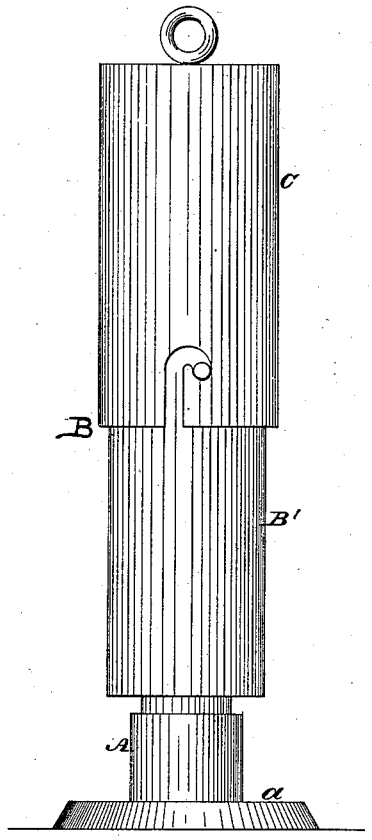


Fig. 2.

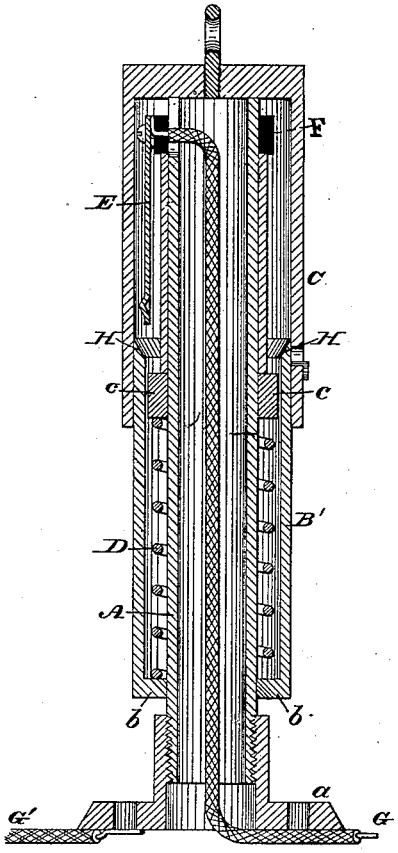
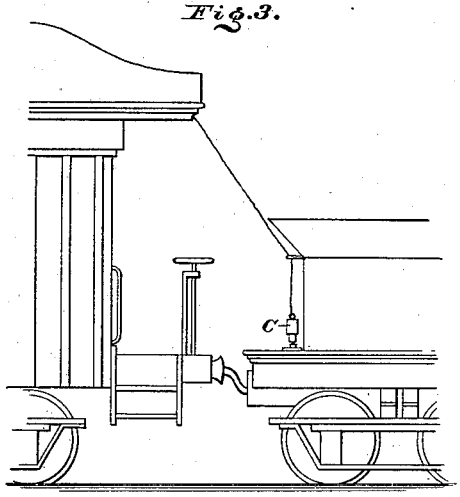


Fig. 3.



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ELECTRIC SIGNAL FOR RAILWAY-TRAINS.

SPECIFICATION forming part of Letters Patent No. 265,757, dated October 10, 1882.

Application filed January 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, JEDEDIAH P. CLARK, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Electric Signals for Railway-Trains, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the portion of the signal or signaling-fixture embodying my invention. Fig. 2 is a central vertical section thereof. Fig. 3 is a view showing the manner of applying the signal to a railway train.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of improvements in electric signals for railway-trains wherein the signaling-fixture is connected to the tender, thus avoiding the employment of a cord from the forward car to the engine.

It also consists of a fixture constructed to be guarded from the effects of weather and dirt, and possesses other advantages, as will be hereinafter fully set forth.

Referring to the drawings, A represents a vertically-arranged stand, tube, or cylinder, which is provided with a base, *a*, for firmly attaching the signaling-fixture to the desired locality or place of service.

B represents a vertically-movable cylinder, which encircles the cylinder A, and is formed of the parts B′ C and the base *b*, which latter has an opening centrally for the passage of the cylinder A, and serves to guide the cylinder B. The part C, closed at top, is secured to the upper end of the cylinder B, and moves therewith, and is made detachable therefrom for permitting access to the interior of the device. Encircling the cylinder A is a spring, D, the lower end of which rests on the base *b* of the cylinder B, and its upper end is adapted to bear against a stop or abutment, *c*, on the exterior of the cylinder A, whereby the cylinder B, though gravitating, is unfailingly restored to its lowermost or normal position.

E represents a spring or piece of spring-metal suspended from and secured to an insulator or insulated band or plate, F, which is attached to the upper part of the exterior of the cylinder A, and freely occupying the space between said cylinder A and the top part, C, of the cylinder B.

G G′ represent two insulated or electric wires, one end of each of which is connected to the respective pole of a battery or any electro-magnetic device located in the cab or other convenient place of the engine. One wire is attached to the cylinder A or base *a* thereof, and the other wire runs through the central cylinder A and is securely attached to the spring E. Either wire passes through an interrupting bell-magnet located in the cab or other convenient place of the engine. The top of the part B′ of the cylinder B forms a bevel-shoulder, H, with the part C, as in Fig. 2; or, in lieu thereof, a rim or lugs may project from the inner faces of the part C or top of the part B′, so as to form a point of metallic contact for the bottom of the spring E when the cylinder B is elevated.

The fixture is placed on the tender, at the rear thereof, and firmly secured thereto, and the wires G G′, leading to the cab, are run around or disposed on the side of the tender in the most convenient and proper position, said wires likewise being permanent fixtures of the tender. The bell-cord from the train is passed through an eye or around a pulley attached to the tender above the fixture, and securely connected to the top of the cylinder B.

When it is desired to signal the engineer the bell-cord is pulled by the conductor or train-hand, and the cylinder B is elevated, the motion of the said cylinder being in a direct line, without irregularity or lateral strain. As soon as the shoulder H reaches and touches the bottom of the spring E an electric circuit is formed, and the bell in the cab is immediately and positively rung, thus communicating with the engineer. On releasing the bell-cord the cylinder B returns to its normal position and the alarm ceases. Should the cars be accidentally disconnected while the bell-cord remains intact, the bell or alarm will be continuously sounded until the cord or connections thereof break, thus announcing to the engineer the disconnection or breakage of the train.

By locating the fixture on the tender I avoid the employment of the bell-cord over the tender

to the engine, and the consequent length of and strain on said cord. By this provision also I am enabled to operate a signal with a short pull. There is but little slack on the cord, as it may be stretched comparatively taut and kept so by the return of the cylinder B to its normal position, and said cylinder may be moved in a direct line without side play or strain.

The cylinders B A protect the parts within them from the weather and dirt without in any wise interfering with the free operation of the device, since the weather and dirt are inaccessible to the interior of the fixture, owing to the closed nature of the exterior cylinder.

The two parts B′ C, when the fixture is is in service, act as one cylinder, it being noticed that the lower part, B′, is of less diameter than the upper part, C. By this provision, when the lower end of the spring or tongue E, which may have a bulge or button on said end, comes in contact with the part B′, the continued upward movement of the cylinder does not increase the pressure on the tongue, wherefore the latter is relieved of strain or jamming between the inner and outer cylinders.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As an improvement in electric signals for railway-trains, the fixture connected to the tender, and provided with electric wires permanently attached to the tender and leading to the engine, said fixture being provided with means of attachment with and adapted to be operated by the ordinary bell-cord of the train, as set forth.

2. The combination of the stand, inclosing cylinder movable thereon, and circuit-forming devices, said cylinder being closed at top, and having a base which encircles the stand and closes the space between said stand and the bottom of the cylinder, substantially as and for the purpose set forth.

3. The stand, in combination with the spring or tongue and the exterior cylinder formed of of two parts, B′ C, of different diameters, substantially as and for the purpose set forth.

4. The stand A and the spring-tongue E, in combination with the exterior cylinder formed two parts, B′ C, detachably connected, substantially as and for the purpose set forth.

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Witnesses:
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