D. H. WALKER & C. C. EGERTON.

Electric Signal Apparatus for Railway Trains.

No. 206,154. Patented July 16, 1878.

Fig. 1.

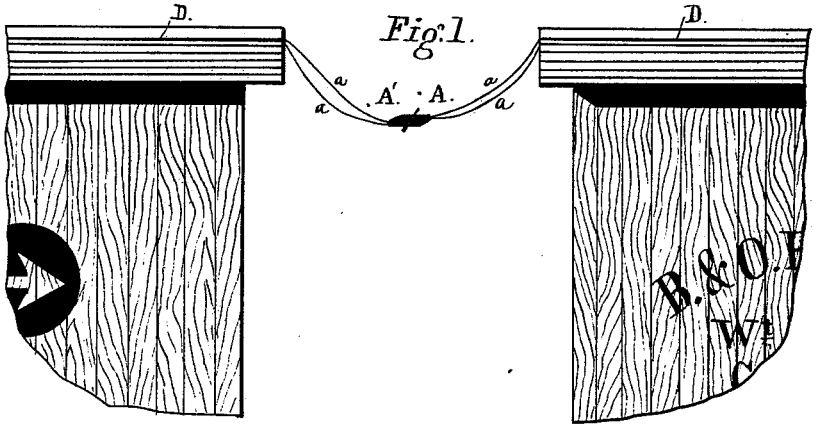


Fig. 2.

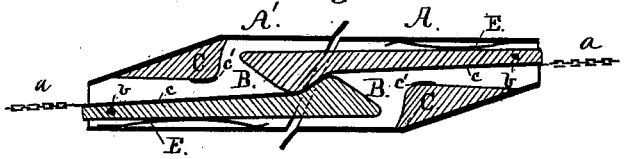


Fig. 3.

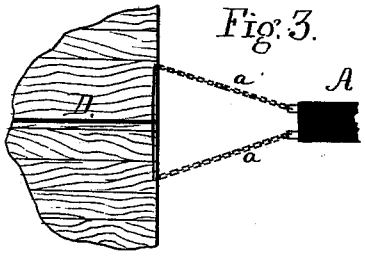
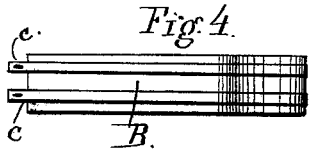


Fig. 4.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN ELECTRIC-SIGNAL APPARATUS FOR RAILWAY-TRAINS.

Specification forming part of Letters Patent No. **206,154**, dated July 16, 1878; application filed May 7, 1878.

To all whom it may concern:

Be it known that we, DEXTER H. WALKER, of the city, county, and State of New York, and C. CALVERT EGERTON, of the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Electric-Signal Apparatus for Railway-Trains; and we hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings.

This invention relates to devices for transmitting signals, orders, or intelligence from one part of a railway-train to another; and it consists in an apparatus for accomplishing that end, constructed as hereinafter described, and possessing points of novelty which are made the subjects of the claim.

While, as will be evident from the following description, our invention is applicable to passenger-trains, it is especially adapted for use on freight-trains, in which case a bell-rope cannot conveniently be used, owing to the frequently-recurring necessity for breaking the train in order to shunt or attach cars.

Owing to this fact recourse has heretofore been had to ordinary hand-signals, flags being used by day and lanterns by night—an expedient which is obviously crude and inefficient, when it is remembered that the caboose, from which the orders are sent, is located at the rear end of the train, and that the signals, in foggy weather or during snow or rain, or when rounding curves, are invisible from the engine.

In order to remedy these defects and furnish a signal apparatus which shall be certainly efficient in all weathers and under all circumstances, and which at the same time shall admit of the breaking of the train at any point without calling for the services of a brakeman or train-attendant to uncouple the parts, we construct our device as follows: An electric connection, consisting, preferably, of a pair of insulated wires inclosed in a protecting-sheath, D, is permanently secured upon the car, as may be most convenient, by preference, in the case of a box freight-car, under or at the side of the center plank of the roof. The insulated wires are separated at the ends of the car, (see Fig. 3,) and to each end is attached the chain or other flexible connection, *a a*. The chains *a a* are secured to the coupler A A′, which is constructed as follows: A A′ represent the casings of the two parts of the electric coupling, and, if of metal, are preferably covered with vulcanite or other suitable non-conductor of electricity. Within each is pivoted a tongue, B, having an enlarged end, as shown, and normally pressed to one side by a spring, E. The tongues B B are non-metallic, but have secured to them a pair of metallic strips, *c c*, to which the chains *a a* are attached. At the side of the tongues B B, within the case, are shoulders C C, provided with transverse metallic strips *c′ c′*, arranged to close circuit with the strips *c c* where the parts of the coupling are detached.

It is evident that upon bringing the parts A A′ together, as shown in Fig. 2, the strips *c c* in each will be pressed upon those in the other, and the parts will be held together with a force proportioned to the strength of the springs E, and a circuit will be formed through the strips *c* and chains *a*.

We have not thought it necessary to illustrate, nor do we consider it necessary to particularly describe, such parts of our device as the electric gong or dial upon the engine, the battery, or keys. They are of the ordinary construction, attached and manipulated in the usual way.

The operation of the device will be understood from the foregoing description of its construction. Upon joining the couplings A A′ between the cars, electric connection will be set up throughout the length of the train, and signals may be sent to and from any point thereof. No attention whatever is paid to the electric apparatus when it becomes necessary to uncouple the cars at any point for the purpose of switching one or more of them off. The electric coupling simply pulls apart as the cars separate, each part automatically closing circuit as the tongues B fall against the circuit-closers C. Upon bringing the parts of the train again together, their respective couplings A A′ are joined and circuit again set up throughout the train. In order to set up connection over any cars unprovided with the ap-

paratus, one or more lengths of the double insulated wire, having at each end a half-coupling or simple tongue, B, (see Fig. 4,) may be carried in the caboose.

The chains *a a* are separated, as described, in order to prevent accidental contact, and may also be insulated, if desired.

While we have stated that keys for closing and opening circuit may be used, it is evident that the tongues B themselves will serve as keys, should occasion necessitate their use as such.

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

1. The couplings A A′, each provided with hinged tongues B, springs E, and circuit-closers C, and adapted to directly connect with each other, substantially as described.

2. In combination with the couplings A, the coupling A′, each being provided with tongues B, having metallic strips *c c*, adapted to be attached to the connections, as set forth.

3. In combination with the connections *a a*, the couplings A A′, each provided with tongue B, having enlarged end, spring E, strips *c c*, and circuit-closer C, substantially as set forth.

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