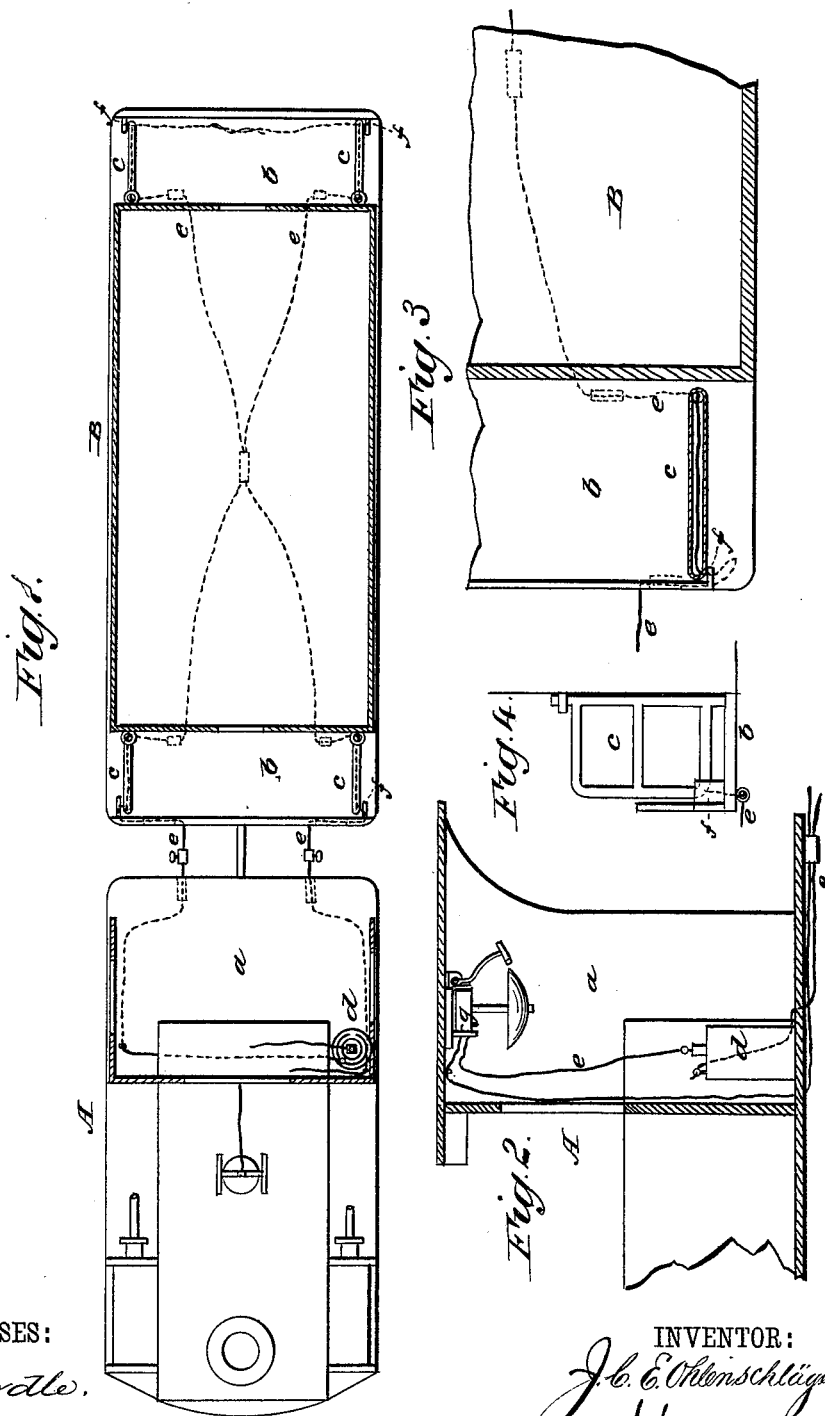


J. C. E. OHLENSCHLÄGER.  
Electric Train-Signaling Apparatus.

No. 220,647.

Patented Oct. 14, 1879.



WITNESSES:

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INVENTOR:

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# UNITED STATES PATENT OFFICE.

J. CHARLES E. OHLENSCHLÄGER, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND ISAAC SCHNEER, OF SAME PLACE.

## IMPROVEMENT IN ELECTRIC TRAIN-SIGNALING APPARATUS.

Specification forming part of Letters Patent No. **220,647**, dated October 14, 1879; application filed August 20, 1879.

*To all whom it may concern:*

Be it known that I, J. CHARLES E. OHLENSCHLÄGER, of the city, county, and State of New York, have invented a new and Improved Signaling Apparatus for Railways, of which the following is a specification.

Upon elevated and other steam railways the platforms are usually fitted with gates, which are opened to permit passengers to pass out, and closed when the train is in motion, and the signal to the engineer for starting the train is given by means of a bell-rope when all the gates are closed. There is always a liability of the signal being given before all the passengers are off, and of the occurrence of serious accidents by starting the train too soon.

The object of my invention is to prevent the signal from being given until all the gates are closed, and thus preclude the possibility of accident; and for that purpose I provide for giving the signal by electrical apparatus automatically when the last gate is closed, the apparatus remaining inoperative so long as any one gate is open.

My invention consists in arranging an electrical circuit from the locomotive throughout the train, which circuit includes all the gates of the train and a signal-bell on the locomotive, each gate acting as a circuit-closer, so that the circuit is broken when any gate is open, and the signal acting to give notice when the circuit is closed.

The invention is illustrated by the accompanying drawings, and the arrangement will be more particularly explained with reference thereto.

In the drawings, Figure 1 is a sectional plan view, representing a locomotive and car with my electrical signaling apparatus applied thereto. Fig. 2 is a sectional elevation of the locomotive-cab, showing the signal-bell and magnet. Fig. 3 is a partial horizontal section of a car, showing one circuit-closing gate in larger size. Fig. 4 is a side view of one gate.

Similar letters of reference indicate corresponding parts.

A represents a locomotive, of which *a* is the cab. B is a passenger-car, with platforms *b* and gates *c* on each platform, as usual.

The invention is applicable for trains of any usual length; but the principle of operation is the same with a single car and locomotive.

In the locomotive-cab is fitted a magnet, *c*, and alarm-bell, or other indicating device, adapted for giving a signal when the armature is attracted by the closing of the circuit. A battery, *d*, is also placed on the locomotive. The wires *e* for the electrical circuit pass from the locomotive down one side of the car to the rear platform and return on the other side; and between the locomotive and cars the wires will be fitted with suitable coupling devices, which will permit ready disconnection or attachment of the wires, as required, and at the rear of the last car these coupling devices will be used for connecting the ends together to complete the circuit.

The wire *e* at each side is severed at each gate. One end is connected to the insulated stop *f*, at the bottom of the gate, and the other end is connected to a suitable knob or portion of the gate, which comes in contact with stop *f* when the gate is closed, so that metallic connection is made between the severed ends of the wire.

For protection of the wires they may pass through a tube at the bottom of the gates, as shown in Fig. 3, and the wires may be insulated and protected throughout the train in any desired manner.

In operation, when the train stops, and one or more of the gates at one or both sides of the cars are opened, the electrical circuit through the wires *e* is thereby broken, and will remain broken until all the gates are again closed. The breakage of the circuit releases the armature of the signaling apparatus in the locomotive. As usual, each gate will be closed as soon as the passengers are off that particular platform, and when the last gate is closed the electrical circuit will be also closed, the armature of the magnet attracted, and the signal or indication given to the engineer that the train is ready to start. In some cases the signal to the engineer may be given by the conductor after the gates are closed with a suitable circuit-closing device, the result in that case being that the movements of

the train are directed by the conductor; but the starting-signal cannot be given until the gates are closed.

I do not limit or confine myself to the precise arrangement or form of any of the parts herein mentioned, as they may be varied without departing from my invention.

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

1. The combination and arrangement, in and with a railroad-train, of wires for an electrical circuit and an alarm or indicator, the wires being connected with the gates of the cars,

and the gates fitted to open and close the electric circuit, substantially as described and shown, and for the purposes set forth.

2. In a railway-train electrical-signaling apparatus and circuit, the arrangement and combination of the platform-gates in and with the electrical circuit, substantially as herein shown and described, so no signal can be given until all the gates are closed.

J. CHARLES E. OHLENSCHLÄGER.

Witnesses:

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J. H. SCARBOROUGH.