(No Model.) 2 Sheets—Sheet 1.

J. S. FOLEY.

RAILWAY TELEGRAPH.

No. 421,394. Patented Feb. 18, 1890.

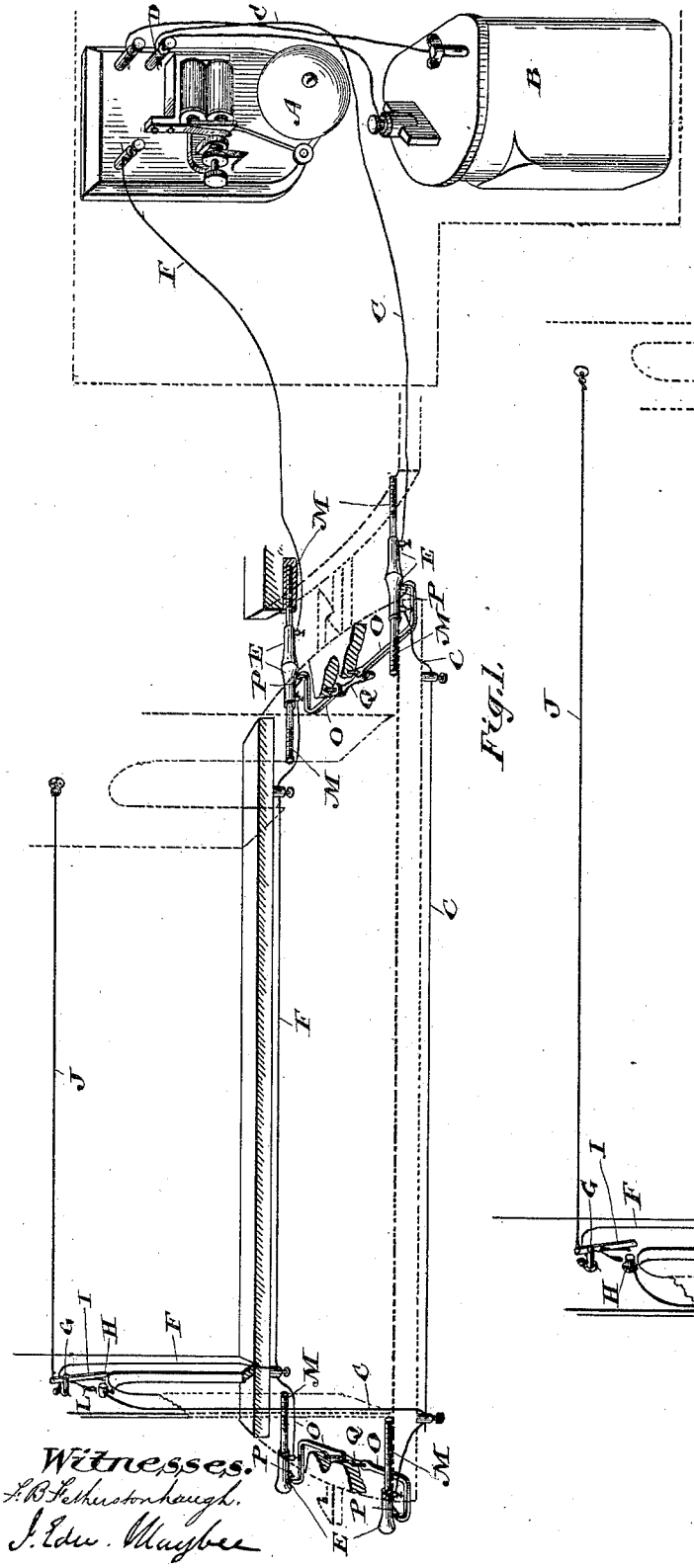

Fig. 1.

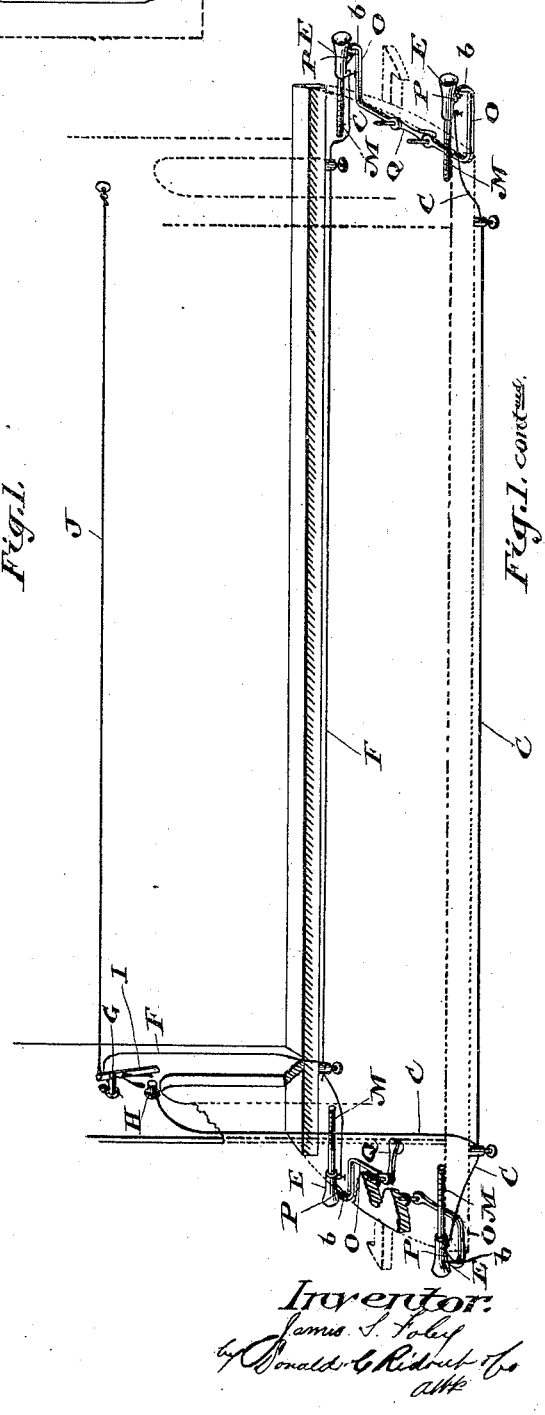

Fig. 1. continued.

Witnesses.
L. B. Fetherstonhaugh.
J. Edw. Maybee

Inventor.
James S. Foley
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(No Model.)

2 Sheets—Sheet 2.

J. S. FOLEY.

RAILWAY TELEGRAPH.

No. 421,394. Patented Feb. 18, 1890.

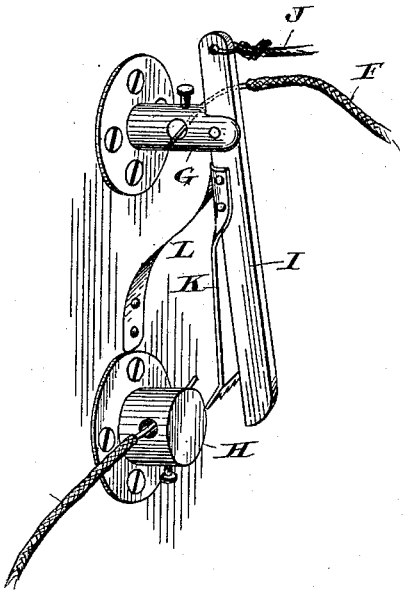

Fig. 2.

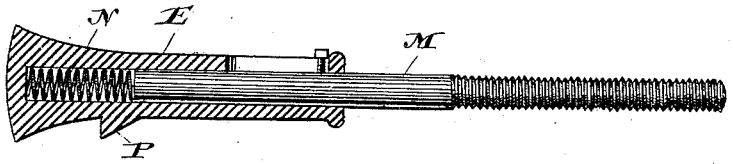

Fig. 3.

Witnesses.
F. B. Fetherstonhaugh
A. Edw. Maybee

Inventor:
James S. Foley
by Donald G. Ridout & Co
Atty

UNITED STATES PATENT OFFICE.

JAMES S. FOLEY, OF TORONTO, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO JOSEPH RUSE, OF SAME PLACE.

RAILWAY-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 421,394, dated February 18, 1890.

Application filed May 31, 1889. Serial No. 312,802. (No model.)

To all whom it may concern:

Be it known that I, JAMES SAMUEL FOLEY, manufacturer, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented a certain new and Improved Electrical Appliance for Operating the Signaling-Bell of a Locomotive, of which the following is a specification.

The object of the invention is to design a simple electrical device by which the signaling-bell in the locomotive may be operated from any car in the train, and which will automatically operate the said bell should any car become accidentally detached from the train; and it consists in the peculiar construction, arrangement, and combinations of parts, hereinafter more particularly described, and then definitely pointed out in the claims.

In the accompanying drawings, Figure 1 is a view which illustrates the application of my invention to railway-cars. Fig. 2 is a detail of the device for forming the electrical circuit in the car. Fig. 3 is a detail of the buffer by which the electrical connection is formed between the cars.

For the purpose of this description I will assume that the electro-magnetic bell A is located in the locomotive at any convenient point in the cab. I prefer to locate the said bell at the point where the common signaling-bell is now usually placed, and I find it most convenient to locate the battery B under the seat of the driver. The wire C is carried from its binding-post D, which is connected to one pole of the magnet in any convenient manner toward the buffer E, which is held in contact with a correspondingly made and lettered buffer located on the next car, and to which the wire C in its car is connected.

A wire F is arranged and connected in the same manner as the wire C, but it of course leads from the opposite pole of the magnet. These two wires are connected, respectively, to the two binding-posts G and H, as more clearly shown in Fig. 2. In this figure it will be noticed that a lever I is pivoted on the binding-post G, to which the bell cord or wire J is connected. A spring-finger K is riveted or otherwise suitably connected to this lever I, and a spring L is arranged to hold the said lever, as indicated in Fig. 2, away from the binding-post H.

In order to close the circuit and thereby ring the bell A, it is of course necessary that the wire C and F should be electrically connected. This connection is made in the car when the spring-finger K is brought into contact with the binding-post H, which may be readily and instantly effected by drawing upon the bell-cord J.

I prefer to employ a spring-finger K instead of making the connection directly with the lever I, as it will act as a scraper when it comes in contact with the surface of the binding-post H, and thus insure an electrical connection by the removal of any non-conducting substance which may have accumulated on the said post. With the view of still further insuring this removal I serrate the edge of the finger K, as indicated in Fig. 2. When the bell-cord J is released, the spring L forces the lever I, with its finger K, away from the binding-post H, and in this manner the circuit is broken, and the signal-bell in the locomotive will cease ringing. Every car in the train will of course be wired, as described, and each will be provided with an independent bell-cord J.

Having described the manner in which the circuit is closed inside the car, I shall proceed to explain briefly the mechanism by which the electrical connection is made between the cars, and how, in the event of the car becoming accidentally disconnected, the circuit is automatically closed and the signal announcing the accident conveyed to the signal-bell of the locomotive. The buffer E, it will be observed, is adjustably fitted onto the spindle M, which is screwed or otherwise fixed onto the end of the car, as indicated. A spring N is fitted into the buffer E, against the end of the spindle M, as indicated in Fig. 3. When two cars are brought together, the opposite buffers on the two cars are held together by the action of their respective springs N, which permit sufficient motion of the cars in rounding curves and hold the buffers together by an elastic pressure.

O is a metal rod suitably secured to the

bottom of the car and having a bent end *b* arranged to project up opposite to each of the lugs P, formed on the buffer E.

When the cars are coupled together, the buffers E are compressed so as to move the lugs P away from their respective ends *b*, formed on the rod O; but should the car be accidentally uncoupled the spring N in each buffer E will push its buffer so as to bring the lug P on the buffer against the end *b* opposite to it, thus forming an electrical connection between the two buffers and the wires C and F, thereby completing the circuit and causing the bell A to ring. As the buffers on the end of the last car of a train will not be pressed, and consequently the ends *b* of the metal rod O must necessarily be in contact with the lugs P on the buffers at this end of the car, I divide the rod O and complete it by a pivoted piece Q, which in the last car I leave open, so as to break the circuit and prevent the constant ringing of the bell, which would otherwise occur.

What I claim as my invention is—

1. In an electric signaling apparatus, the wires C and F, connected to an electro-magnetic bell, the buffers E, normally electrically connected to the wires to form an electrical connection between the cars, as described, in combination with the binding-posts G and H, a circuit-making mechanism, as the lever I, and a bell-cord J, connected to said lever, substantially as described.

2. In an electric signaling apparatus, the wires C and F, connected to an electro-magnetic bell, the buffers E, normally electrically connected to the wires to form an electrical connection between the cars, as described, in combination with binding-posts G and H, the lever I, pivoted to post G, the scraping-finger K, attached to lever I and scraping the post H, and a bell-cord J, connected to said lever, all substantially as shown and described.

3. In an electric signaling apparatus, the combination of the two wires C and F, two compressible buffers E, connected, respectively, to an electro-magnetic alarm by said wires C and F, and having contacts, as the lugs P, with a conductor, as the rod O, for making connection between the two wires, substantially as described.

4. In an electric signaling apparatus, the combination of two wires C and F, two compressible buffers E, connected, respectively, to an electro-magnetic alarm by said wires C and F, and having contacts, as the lugs P, with a conductor, as the rod O, for making connection between the two wires, and a circuit-breaker Q in said conductor, substantially as described.

Toronto, April 11, 1889.

JAMES S. FOLEY.

In presence of—
CHARLES C. BALDWIN,
W. G. MCMILLAN.