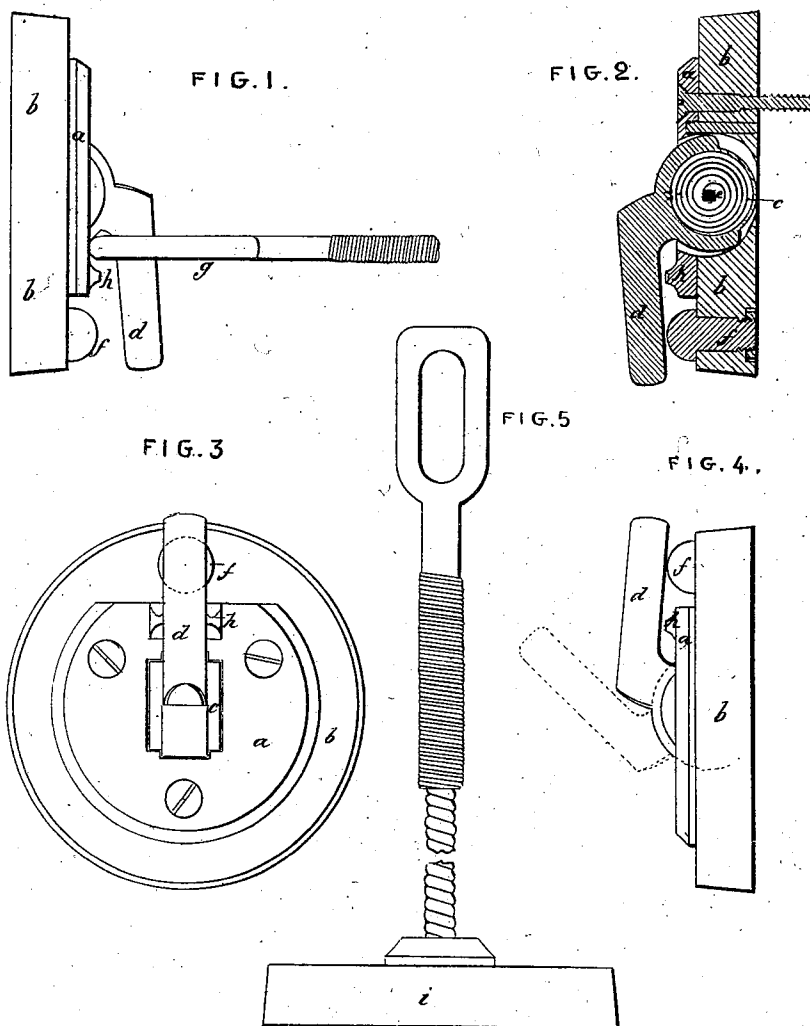


No. 112,957.

PATENTED MAR. 21, 1871.

P. D. PRUD'HOMME.
APPARATUS FOR ESTABLISHING ELECTRICAL COMMUNICATION
IN RAILROAD TRAINS.

2 SHEETS—SHEET 1.



Witnesses

[Signature]
[Signature]

Inventor:

[Signature]

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2 SHEETS—SHEET 2.

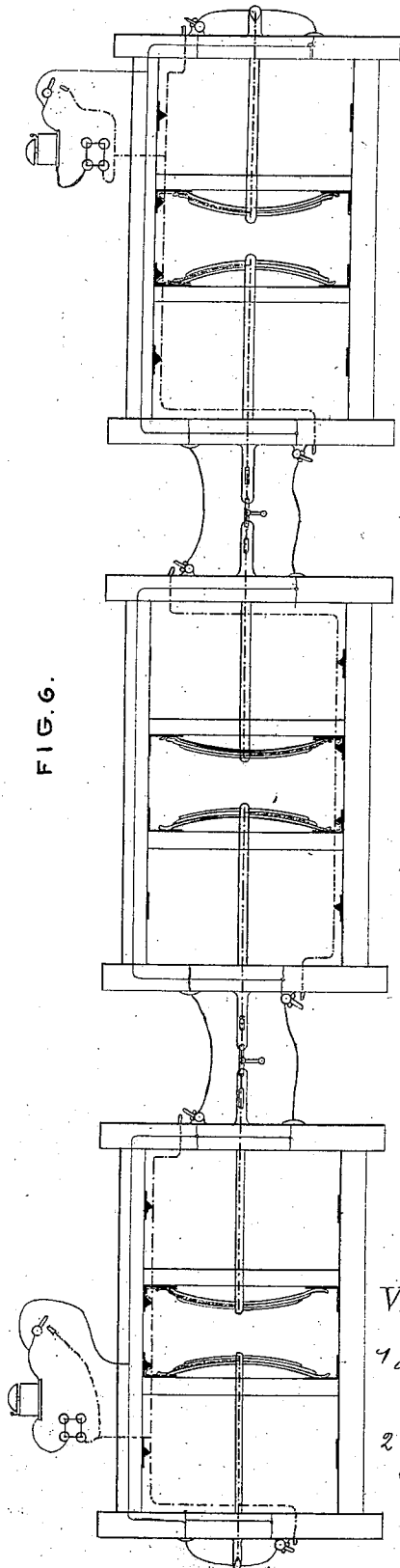


FIG. 7.

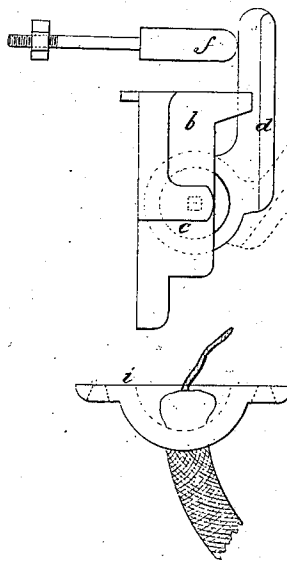


FIG. 8.

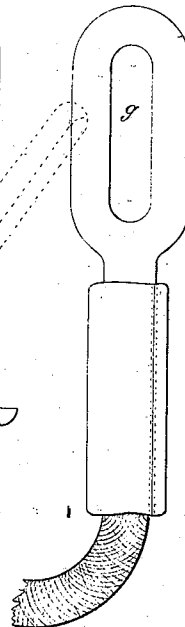
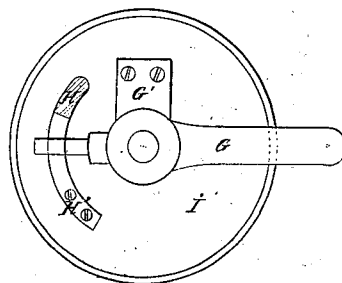


FIG. 9.



Witnesses

1 *[Signature]*
2 *[Signature]*

Inventor:

[Signature]

UNITED STATES PATENT OFFICE.

PIERRE DÉSIRÉ PRUD'HOMME, OF PARIS, FRANCE, ASSIGNOR TO CHARLES DE FRONDAT AND ALFRED MICHANT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN APPARATUS FOR ESTABLISHING ELECTRICAL COMMUNICATION IN RAILROAD-TRAINS.

Specification forming part of Letters Patent No. 112,957, dated March 21, 1871.

To all whom it may concern:

Be it known that I, PIERRE DÉSIRÉ PRUD'HOMME, of Paris, in the French Empire, have invented a System of Electrical Apparatus for Putting in Communication the Cars of a Train; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed sheets of drawing, making a part of the same.

My invention relates to a system of electrical apparatus for railway-trains which indicates automatically if a breaking of the tender or chain has taken place, or which may bring the various attendants of the train in communication together, or passengers with attendants, if desired.

This apparatus is represented in the accompanying drawing, in which—

Figure 1 shows an elevation of one of the organs of this apparatus. Fig. 2 shows a median section of that organ. Fig. 3 is a front view of the same. Fig. 4 is another side view of the same. Fig. 5 is a front view of the apparatus' second organ.

In all these figures like letters refer to similar parts seen from various sides.

As it is clearly seen by mere examination of the drawing, such apparatus is composed, first, of a metal plate, *a*, which forms a cap mounted on a wooden disk, *b*; secondly, of a metal barrel, *c*, to which adhere a rod or stem, *d*, intended to serve as a hook.

Within the barrel is a spring intended to bring the hook-rod back toward the plate *a*, when both pieces of the apparatus are reunited, as seen in Fig. 1.

A shaft, *e*, is within the barrel. Such a shaft carries a hook intended to wind up the spring. It is stopped within the cap by two joint-pins. A metal-barreled piece, *f*, is above, and serves as catch or stop for the hook and of contact at the same time.

Every organ herein described constitutes the first piece of the apparatus.

The second piece is formed with a metal ring, *g*, attached to a metallic cord intended to catch the hook *d*, in such manner that when admitted in it removes the said hook from

contact *f*, as it is seen in Fig. 1. As it comes itself in contact with the hook *d*, such a ring, *g*, is held on the hook by a small enlargement, *h*, carried by the plate *a*. The other end of the leading metallic cord is attached to a washer or wooden disk, *i*, such a cord run through the said disk, so that it may continue the metallic communication. If the metallic cord which holds the ring *g* is withdrawn, the hook *d* rocks or opens itself, the ring comes out, and the hook, not being maintained, rises up or ascends by the effect of the barrel *c*, and comes in contact with *f*, and operates an electrical circuit.

This apparatus is intended to be set forward and backward, the carriages or wagons which run on railways, in order to allow, by the adjunction of the ringing and signal wires, the engineer-in-chief or leading man and the brake attendant to correspond together in case of breaking of the fastening or coupling chains. Communication is, at the same time, established in each part of the train.

A button or knob may be put, if desired, in passengers' compartment, in order to allow, in certain cases, the latter to call. Communications between the various carriages, wagons, or cars of a train are established as represented in Fig. 6 of the accompanying drawings.

Figs. 7 and 8 show both pieces of the apparatus, which are of different construction in regard to the form than those herein described; but in reference to principle and working they remain the same.

In front and in the rear of each carriage, wagon, or car is set the hard brass or bronze hook *d*, mounted within the box *d* by means of the spring-box *c*. Above such a hook, and in contact with the same, is placed the metallic knob or button *f*, and on the other side of the coupling or fastening bar is attached the disk *i*, which carries the metallic cord, to the end of which is the elongated ring *g*, Figs. 5 and 8. This being accomplished, the two bolts or heads *f* are reunited by means of a galvanized wire or rod attached thereto under the frame, taking care to put such wire or rod in communication with the guard-plates and

spring-slides of both coupling or fastening bars. Another wire reunites also metallicity together the hooks and cords of the same carriage, taking care that this last wire be well isolated from the preceding.

Besides the pieces above mentioned, the cars are provided with a commutator and brackets intended to support a pile or battery-box having a striking part within.

The upper brackets carry two copper plates, which are reunited to the left one with the wire of the bolts *f*, and to the one on the right-hand side with the wire of the hooks and rings.

The plate or blade *G'* of the commutator, Fig. 9, is in contact, by a wire, with the wire of the hooks and rings, and the blade *H* is in contact with the other wire, so that the carriages are put in communication, in the manner shown, Fig. 6. A pressure exerted on the hand-lever *G* of the commutator will be sufficient to establish a contact with the plate or blade *H*, and causes the ringing of the striking part within the two cars.

A knob or commutator placed within a passenger's carriage, and put in communication with both wires passing underneath, would also cause a ringing at both ends of a train, and thus put the passengers of a compart-

ment in communication with the attendants of said train.

I claim—

1. An electrical apparatus for railway, which is composed of two pieces, one being a hook mounted on a spring furnished with a barrel or spring-box, attached to the rear or to the front part of the wagon or cars, and the other being a ring at the end of a metallic cord, which is attached to the rear or to the front part of the next carriage, wagon, or car, this ring being set on the hook, when the train is so formed that when a breaking occurs or happens in the tender or coupling chain the ring is released from the hook, and caused, by the action of the spring, to fall on a contact, which shuts an electrical current, putting in motion the striking part disposed within the cars.

2. An electrical communication may be established in each part of the train, to put the passengers in communication with the attendants.

P. PRUD'HOMME.

Witnesses:

J. U. ZUST,
DESNOS,
A. GUION.