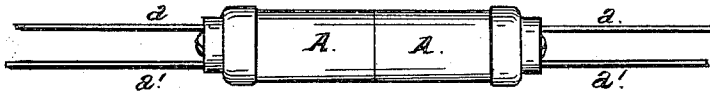


A. RYDER.

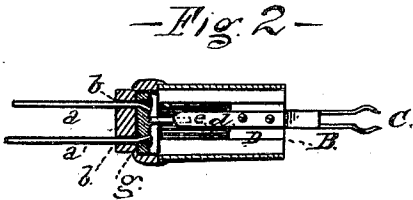
COUPLING FOR TRAIN-TELEGRAPH.

No. 172,504.

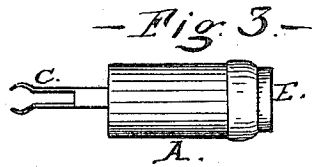
Patented Jan. 18, 1876.



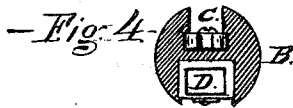
-Fig. 1-



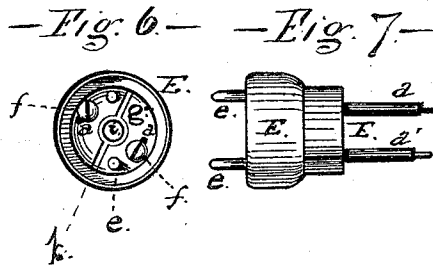
-Fig. 2-



-Fig. 3-

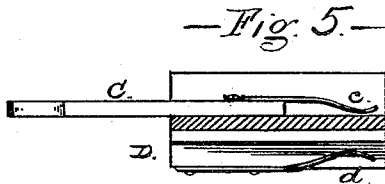


-Fig. 4-

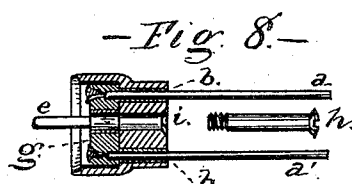


-Fig. 6-

-Fig. 7-



-Fig. 5-



-Fig. 8-

Witnesses:

Hellousterde
William W Osborn

Inventor:

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his Attorney

UNITED STATES PATENT OFFICE.

ANDREW RYDER, OF OAKLAND, CALIFORNIA.

IMPROVEMENT IN COUPLINGS FOR TRAIN-TELEGRAPHS.

Specification forming part of Letters Patent No. **172,504**, dated January 18, 1876; application filed November 22, 1875.

To all whom it may concern :

Be it known that I, ANDREW RYDER, of Oakland, in the county of Alameda, State of California, have invented an Improvement in Couplings for Train-Telegraphs, of which the following is a specification :

My invention consists in the construction of a new form of coupling for connecting together the ends of electric bell-cords between the carriages and cars of a railway-train, and is intended as an improvement on the Letters Patent heretofore granted to me for similar inventions.

The object of my invention is to provide a stronger, simpler, and more effective coupling, that shall not fail to establish a current of electricity between the cars, as will be fully set forth hereafter.

Figure 1 of the drawing accompanying this specification shows a top view of the coupling. Fig. 2 is a side view of one part of the coupling, with the metallic case in section, to show the conductors and insulating-plug. Fig. 3 is a view of the other half or part of the coupling. Fig. 4 is an end view, and Fig. 5 a side view, enlarged and in section, of the insulator-plug that fills the cylindrical case and separates the conductors of the two currents from each other and from the outer case. Figs. 6, 7, and 8 are views of the end cap of the coupling, that holds the wires of the cables and connects them with the insulators.

A A are the two outer cylinders, that hold and protect the conductors and couplings within them. When these two parts are brought together, as in Fig. 1, they form a smooth cylinder. B B are the non-conducting plugs or fillings, one in each case A. This fits into the cylinder, and is secured permanently therein. This plug B has a slot in its upper side (Figs. 4 and 5) that holds the bifurcated spring-arm C, and in the opposite side a larger slot that is filled up by the metal sleeve D. Each part A of the coupling thus has a spring-arm and a sleeve, and when the two halves are brought together the arm of one coupling is opposite to and fits into the sleeve of the other coupling. Each cylinder has a cap, E, on the end, secured in place by a screw, *h*, that passes through a bushing of non-conducting material lining the hole *i*,

through the cap. Within the cap is a metallic button, *g g*, divided into two parts, or halves, by the insulating-strip *k* running from the hole *i* to the circumference. These two parts of the button are insulated from the cap as well as from each other, and they have a conducting-pin, *e*, secured to each one of the halves that projects from the cap and comes in contact with the metallic tongue within the cylinder, one of these pins *e* touching the tongue *c* of the spring-arm C, and the other in contact with the tongue *d* of the sleeve D. The ends of the wires *a a* pass through the bushings *b b* of non-conducting material within the end of the cap E, and are fastened to the button *g*, one to each half, by the screws, as shown in Figs. 6 and 8. In this manner the cap E is constructed to conduct the two currents separately from the wires *a a'* to the tongues *c d* of the arm and the sleeve, that form the coupling of each part of the cylinder A A. These fastenings C D serve as conductors for the currents, while, at the same time, they act to hold the two parts of the coupling securely together, and no separate conducting medium is required, as is the case with other coupling of this character, for it is evident that when the arm C of one part or half enters the metallic sleeve D of the other half a conducting medium for the current is thereby established from one to the other part of the coupling. The central portion of the non-conducting plugs B separates the two conductors from each other, and completely insulates the two currents. The wires *a a'* of the cable are insulated also from the outer case by the bushings *b b*, as shown in Fig. 8. The fastenings C D hold the two parts of the coupling securely together, so that the cylinder presents a smooth surface, with no chance of any water entering between the parts of the coupling to destroy the insulation of the two currents, and, while they act as fastenings, they also serve as conductors, as above shown and clearly described.

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

1. The electric coupling A, for train-telegraphs, with the fastenings C D arranged within the cylinder and connected at their in-

ner ends with the wires *a a'* of the cable, in the manner described, so that, while they act to hold the parts of the coupling together, they also serve as conducting mediums for the currents of electricity.

2. In combination with the outer metallic cylinder A, the insulating plug or filling B, with the spring-arm C secured to it upon one side, and the sleeve D upon the opposite side, in the manner shown and described, by which the two parts of the fastenings are insulated from each other and from the outer metallic cylinder.

3. In combination with the spring-arms C

and sleeves D, within the cylinders, the metallic tongues *c d* for insuring contact and connection of the electric wires with the metallic fastenings.

4. The cap E, with its divided button *g*, and pins *e e*, constructed as described, and combined with the cylinder, in the manner shown, for the purposes specified.

In witness whereof I have hereunto set my hand.

ANDREW RYDER.

Witnesses:

F. T. JOHNSON,

EDW. CADWALADER.