A. RYDER.

Train-Telegraph.

No. 164,940. Patented June 29, 1875.

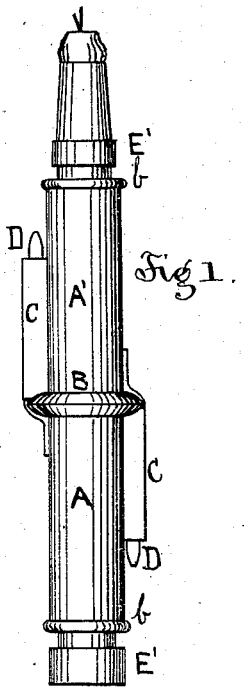

Fig 1.

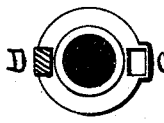

Fig 2.

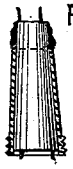

Fig 5.

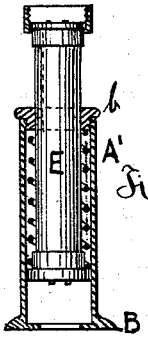

Fig 4.

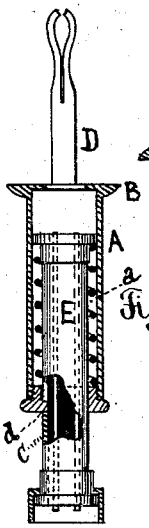

Fig 3.

Witnesses.

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UNITED STATES PATENT OFFICE

ANDREW RYDER, OF OAKLAND, CALIFORNIA.

IMPROVEMENT IN TRAIN-TELEGRAPHS.

Specification forming part of Letters Patent No. **164,940**, dated June 29, 1875; application filed January 18, 1875.

To all whom it may concern:

Be it known that I, ANDREW RYDER, of Oakland, in the county of Alameda and State of California, have invented an Improved Electric Bell-Cord Coupling for Railway Car and Carriages; and I do hereby declare that the following specification is a full, clear, and exact description of the same, so as to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment, reference being had to the accompanying drawings, and to the letters marked thereon.

My invention relates to an improved coupling device for electric bell-cords to be used on railway cars and carriages, in order to give a signal to the engineer by the conductor to start, stop, back up, or to call in flag, &c.; and in case of accident, so that the train can be disconnected without injury to the cable, and the circuit be broken or closed at will by the conductor, and the alarm be given automatically should the train become uncoupled or disconnected by accident or design, and thereby prevent collision by detached portions of trains coming together, and take the place of all ordinary signals now employed. The invention consists mainly of a plug or piston moving in a case, which is provided with a slot and spring, so that after the plug has been drawn back the spring will cause the two ends of the cables to be come reunited, and perfect contact of the wires be had. Each side of one-half of the case is provided with a spring or flexible arm, which is moved up in the ways upon the opposite end of the case, forming a water-tight joint, and closing the circuit, bringing the two ends of the cable in exact position in relation to the meeting ends of the wires. That portion of the meeting-ends of the cable which are surrounded by the case are slotted, in which slot moves a guiding-lug, to insure a perfect contact. A spiral spring surrounds each end of the cable, so that by grasping either end of the cable with the hand or fingers, the circuit can immediately be broken and closed by the reaction of the spiral springs, all of which will hereinafter more fully appear.

In the drawings, Figure 1 represents a plan of a coupling embodying my invention; Fig. 2, a cross-section of cable and case; Fig 3, a longitudinal section of one-half of the case with cable drawn back and part broken away; Fig. 4, longitudinal section of case with cable drawn back; Fig. 5, a longitudinal view of end of circuit.

A A′ represent the case or coupling, which is divided crosswise with the two meeting-ends, provided with a water-tight collar, B. Upon opposite sides of each division of the case is placed a sort of housing, C, which receives the forked spring-arms, D, so that when the two parts of the case are brought together one spring-arm enters the housing on one side, and the other spring-arm the housing on the opposite side, and closes tightly the joint or connection. The bell cord or cable is composed of two insulated wires, or two insulated wires twisted together. The cores or pistons E may be constructed of glass, hard rubber, or other non-conducting material, and are surrounded by spiral springs *a*, held by screw-plugs *b* in each division of the case. These pistons move in the two ends of the barrels of the coupling, being guided by a slot, *c*, and a lug, *d*, so as to insure direct and perfect contact with the two projecting and meeting ends of the wires when the joint or coupling is closed, or the circuit be immediately broken by withdrawing the piston by grasping the cable or cord at E′, which raises the armature attached to the locomotive, and causes the gong or bell to be sounded, and arrests the attention of the engineer.

In case of design or the accidental uncoupling of the train, or any one of the cars of which the train is composed, the connection is immediately broken by drawing apart the coupling at the joint, or where its connection is made, and without injury to the coupling or electric machine attached to the locomotive, and which sounds the alarm, as one-half of the coupling will remain intact on one end of the car, and the other half on the end of the succeeding car, to be brought together and locked or coupled when the train is made up again.

At the rear end of the last car coupled, only one-half of the coupling is employed, which acts as a circuit-closer, and is provided with a waxed end, F, as shown in Fig. 5.

The cable may be placed on the inside, outside, on the top, or underneath the car, and be connected or coupled with equal facility as that of the atmospheric-brake coupling.

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

The plugs or pistons E moving in the case A A, and provided with a guiding-slot, *c*, and spring *a*, so that after the plug has been drawn back the spring-arms cause the two ends of the cable to become reunited, and perfect contact be had between the wires of the cable, substantially in the manner as herein set forth and specified.

In witness whereof I have hereunto set my hand and seal.

ANDREW RYDER. [L. S.]

Witnesses:
C. W. M. SMITH,
PHILIP MAHLER.