

No. 657,887.

Patented Sept. 11, 1900.

J. F. SCULLEN.  
ELECTRIC TRAIN SIGNAL DEVICE.

(Application filed Jan. 26, 1900.)

(No Model.)

Fig. 1

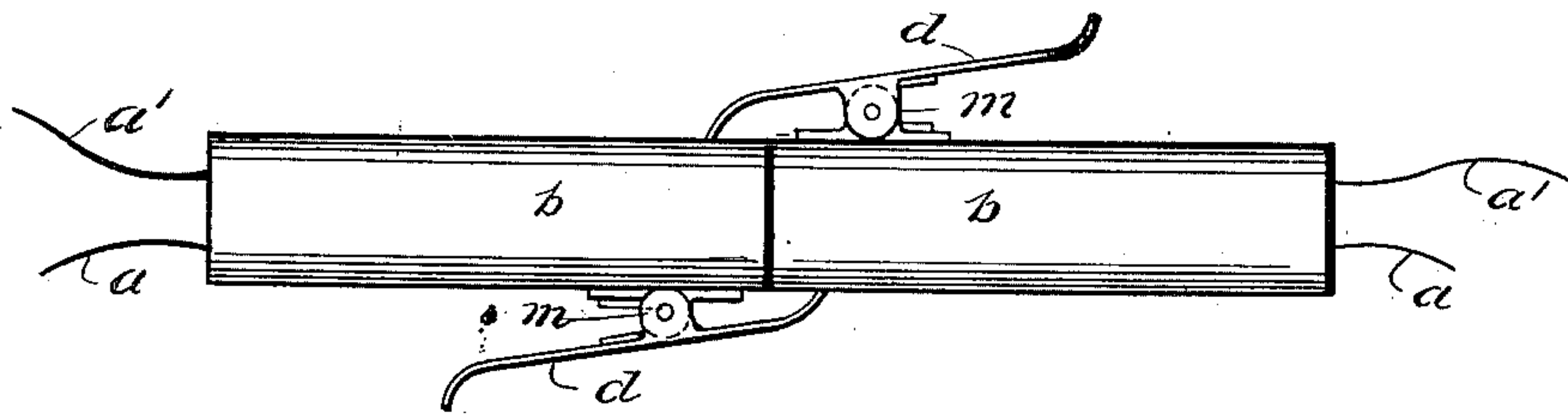


Fig. 2

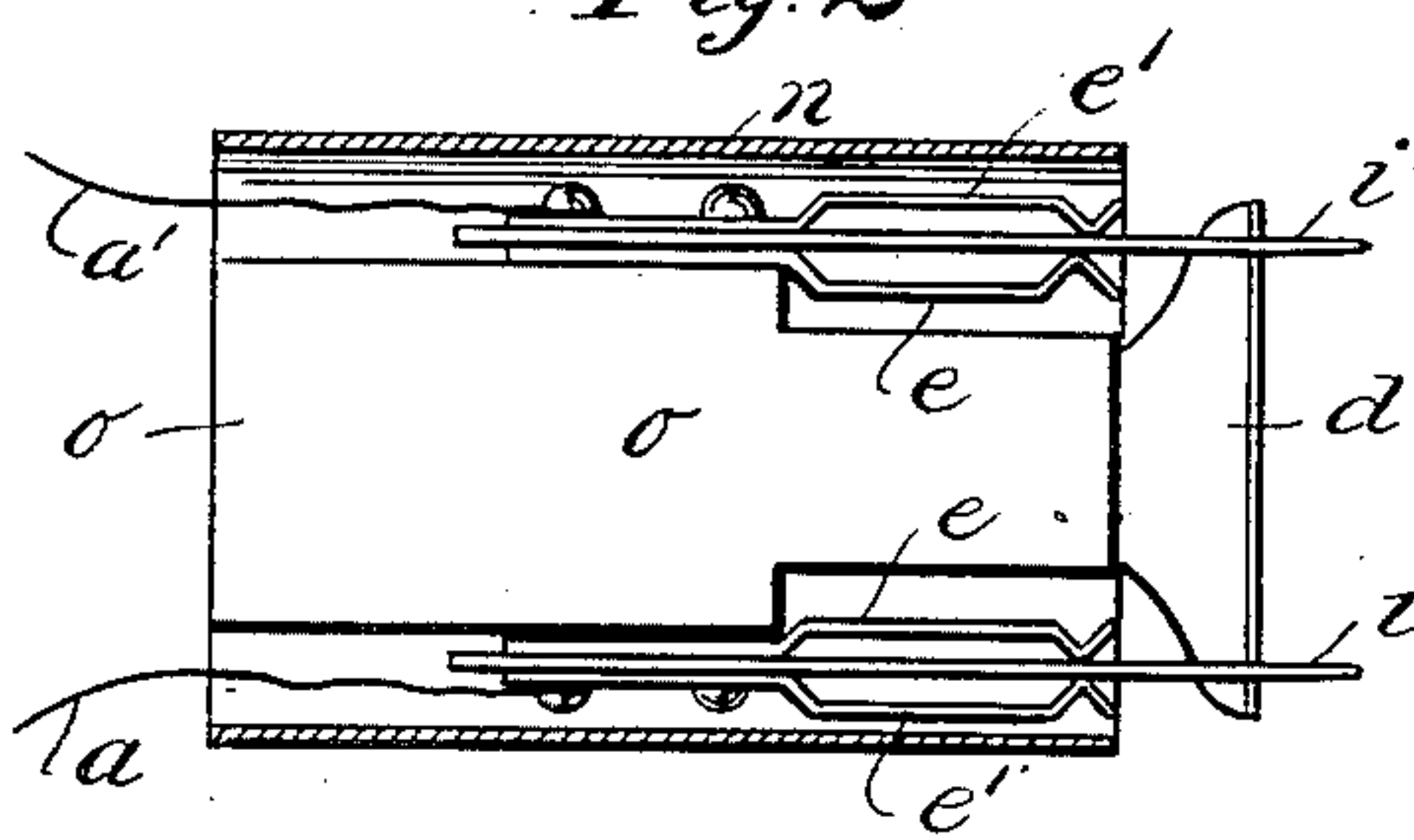


Fig. 3

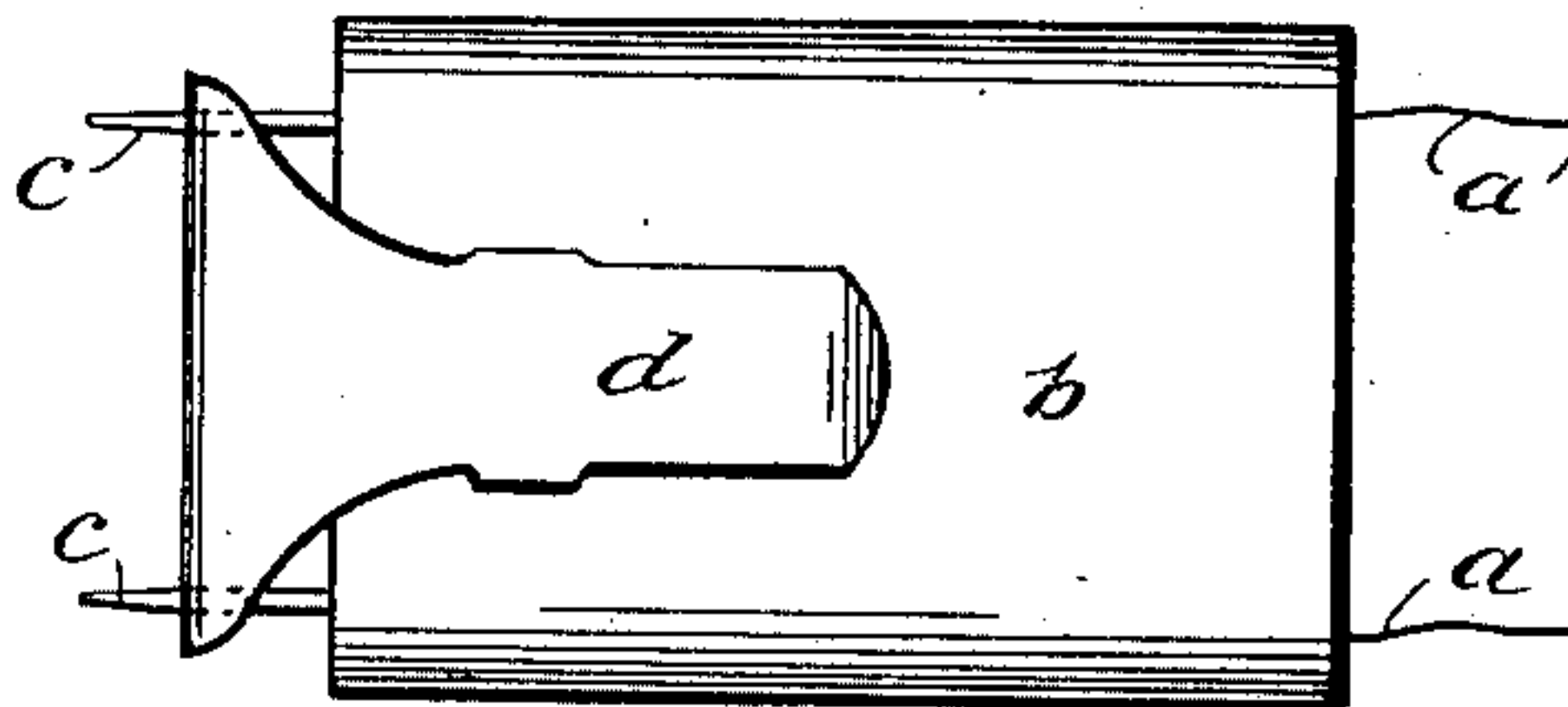
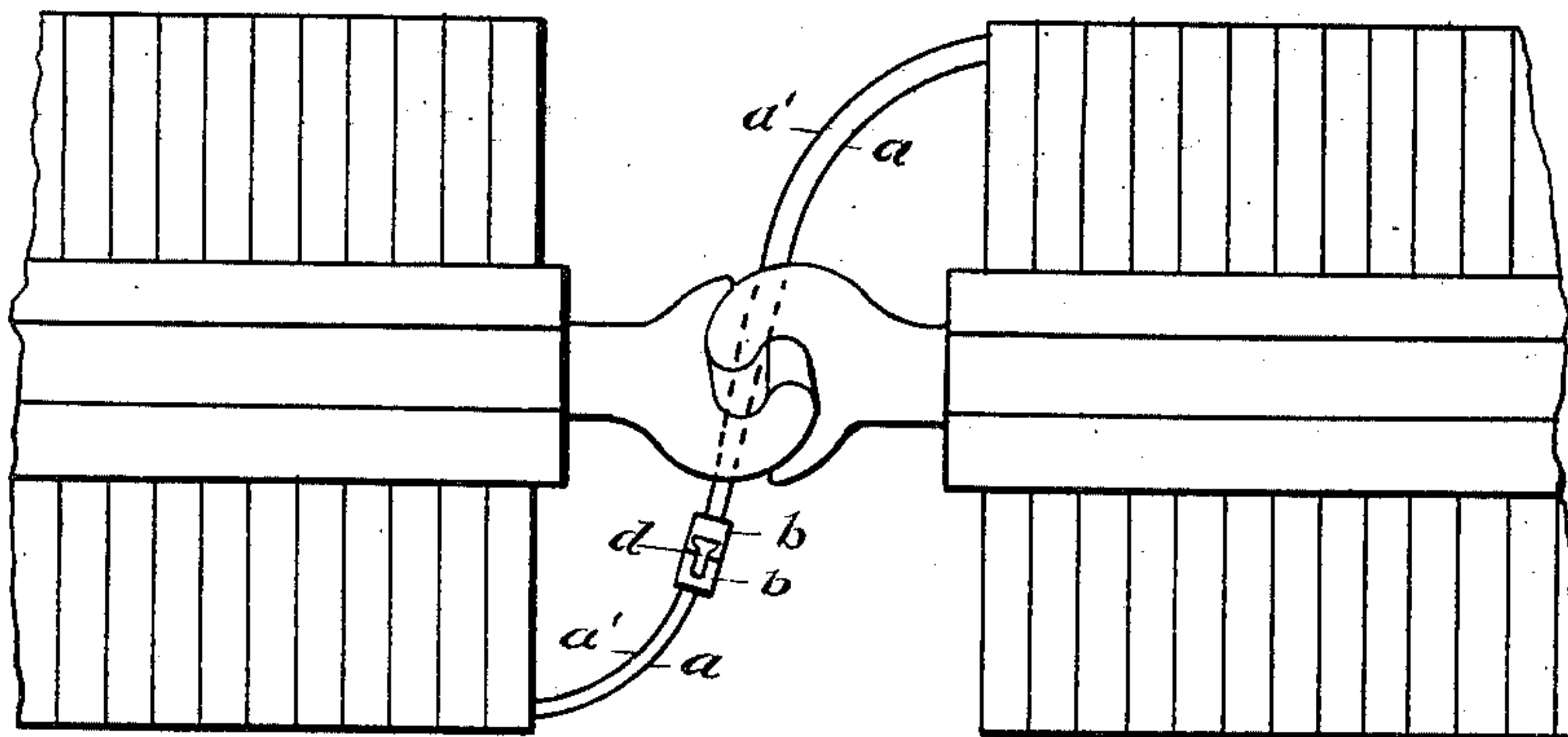


Fig. 4



Witnesses:

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Inventor,  
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By H. C. Hunsberger  
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# UNITED STATES PATENT OFFICE.

JAMES F. SCULLEN, OF CHICAGO, ILLINOIS.

## ELECTRIC TRAIN-SIGNAL DEVICE.

SPECIFICATION forming part of Letters Patent No. 657,887, dated September 11, 1900.

Application filed January 26, 1900. Serial No. 2,913. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES F. SCULLEN, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Electric Train-Signal Devices, of which the following is a specification.

The objects of my invention are to provide a means of signaling the engineer and conductor at either end of a railway-train in case of a break or parting of the train; also, to provide a means of communication between the engineer and the rear end of the train, the usefulness of which is obvious, particularly in long freight-trains.

The device consists of a system of sectional wiring underneath the body of the cars, each car-length constituting a separate individual section, and as the train is made up the individual sections are connected, providing a continuous wire equipment throughout the entire length of the train. The terminals are provided with alarms—one in the cab of the engineer, the other in the rear car of the train, usually the trainmen's caboose or passenger-car—and the system provided with a battery connection at each terminal. A telephone may be also connected with the system, or any other method of communication that may be devised, in the same manner as the telegraph or telephone systems now in general use. My device, however, relates more particularly to the means of making and breaking the connections between the individual sections in any part of the train, these connections or joints consisting of two similar devices, one on each terminal, made to unite together sufficiently firm for the purposes of connecting the wires of the individual sections to produce a continuous current throughout the length of the train and yet parting readily under any unusual strain, and when so parted each terminal of the detached sections is provided with a means for automatically closing the circuit and giving the alarm instantaneously with the parting of the train and wire-sections.

The device is illustrated in the accompanying drawings, in which—

Figure 1 shows the connecting-joint of the two wire-sections. Fig. 2 is a plan view of the interior of the device. Fig. 3 is a top

view of the device, showing the means for automatically closing the circuit. Fig. 4 shows the connection between two cars.

Similar letters refer to similar parts throughout the several views.

In the construction of my device I wire each car as follows: Two parallel insulated wires *a* and *a'* are attached underneath the body of the car, extending the length of the car with a piece of slack at each end, and each of these car-length sections provided with a connecting device *b*, which constitutes one half of the connecting-joint. When the cars in the train are each provided with wire-sections, as above described, and the joints between each car are connected, a complete wire communicating equipment extends from the engine to the rear car of the train. Each of the equipment-terminals is then provided with an alarm-signal and electric connection, as in any other alarm or electric system now in general use. The sectional connecting device *b* is constructed of any light insulating material. Preferably a block of wood *o* or other non-conducting material forms the center piece of the device. This block *o* is recessed on each side at one end to provide a space for the springs *e e*. Two flat metal blades *i i* are attached to the block *o*, one on each side, the free ends projecting an inch or more from the recessed end of the block. On each side of each blade and lying against the flat side is a flat spring *e*, a portion of the spring bowed outwardly and diverging or flaring at the free end. Each of said blades is connected with a terminal of one of the parallel wires of the individual sections, thus making the blades *i i* the terminal points of the individual sections. A thin cover or wrap *n* incloses the sides of the block *o* and the blades, but not the ends, the free ends of the blades protruding an inch or more beyond the cover *n*, which is also of non-conducting material. A metal clip *d* is placed on the outer cover *n*, actuated by a spring *m*, which holds the operative part of the clip normally in engagement.

In making the connections between the individual sections it will be observed that the terminal points or blades of one section are adapted to be inserted between the blades and springs of the other, the clip of one to



engage with the outer surface cover of the other, the clips to grasp on opposite sides, thus completing a firm connection, yet adapted to separate under any unusual strain.

5 When all the individual sections in the train are thus connected, the train is equipped from end to end. The system may be operated as a telephone or other method of communication, and should the train part at any  
10 car in the train the connecting-joint at that car would separate and the clips *d* drop down automatically on the blades *i i*, closing the circuit and giving the alarm at each end of the train simultaneously.

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

1. In an electric train-signal, a train of individual parts, an equipment of parallel insulated wires for said train composed of individual sections corresponding with the individual parts of said train, an electric connection at each terminal of said train-wire equipment, a separable coupling for each of  
20 said individual sections consisting of two similar parts, parallel blades in each part each blade connected with one of said parallel wires, springs on the sides of each of said blades, an insulating material between said  
30 blades a wrap of insulating material inclos-

ing said blades and springs except the free ends which protrude, a spring-actuated clip on each of said parts of said coupling adapted to engage normally with the free ends of said blades, said blades of each of said parts  
35 adapted to be inserted between the blades and springs of the other part and the clip of one part to engage with the outer surface of the connecting part, substantially as specified.  
40

2. In a separable coupling for an electric signal - wire equipment composed of individual sections of parallel wires, parallel blades at the terminals of said sections, an insulated block between said blades, a spring  
45 on the side of each of said blades, a cover of insulating material for said block and blades, the free ends of said blades protruding from said cover, a spring-actuated metal clip on the outer surface of said cover the said clip  
50 adapted to engage normally with the protruding free ends of said blades, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES F. SCULLEN.

Witnesses:

H. C. HUNSBERGER,  
G. S. NOBLE.