

No. 699,469.

Patented May 6, 1902.

T. C. JAMES.  
ELECTRIC COUPLING.

(Application filed Aug. 28, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

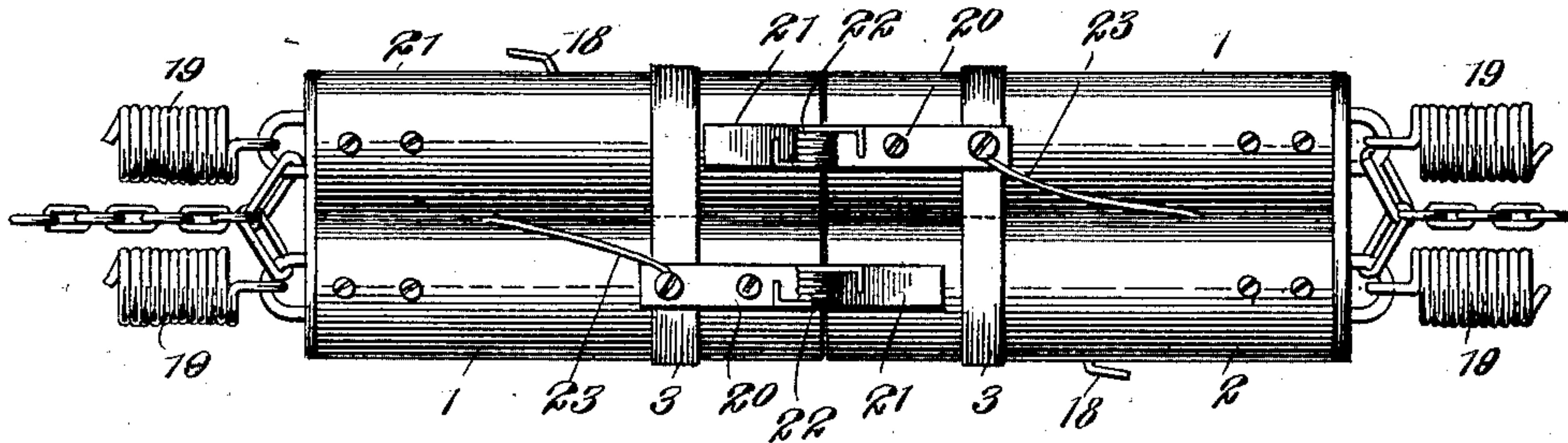


Fig. 2.

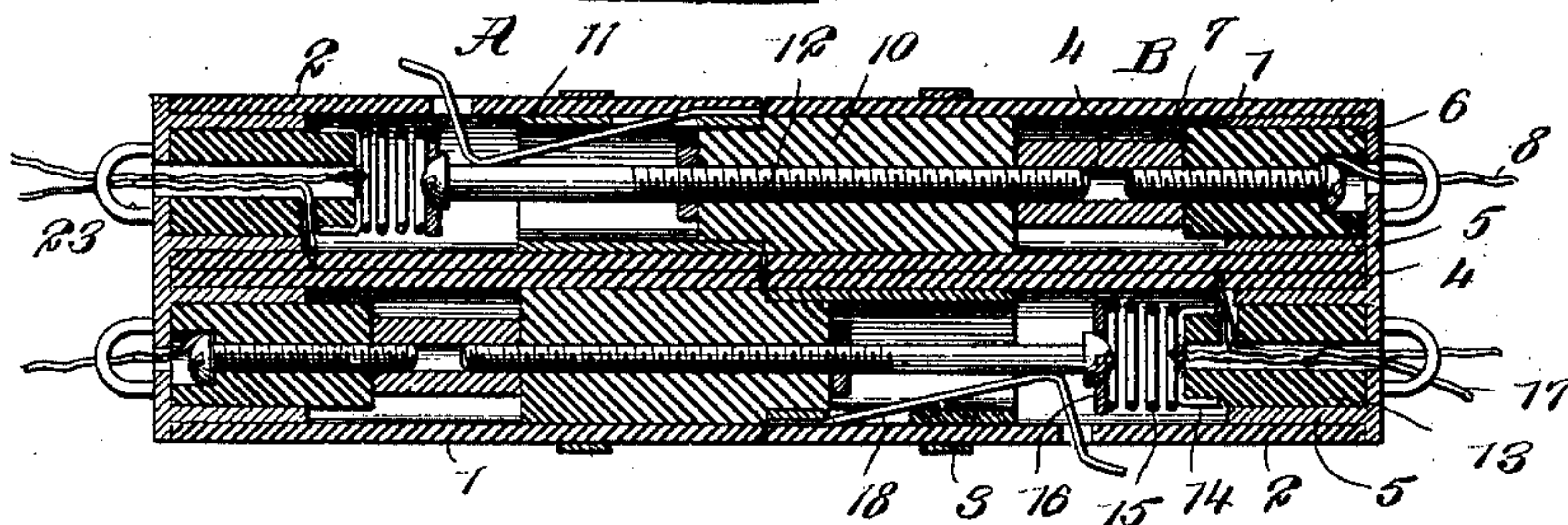
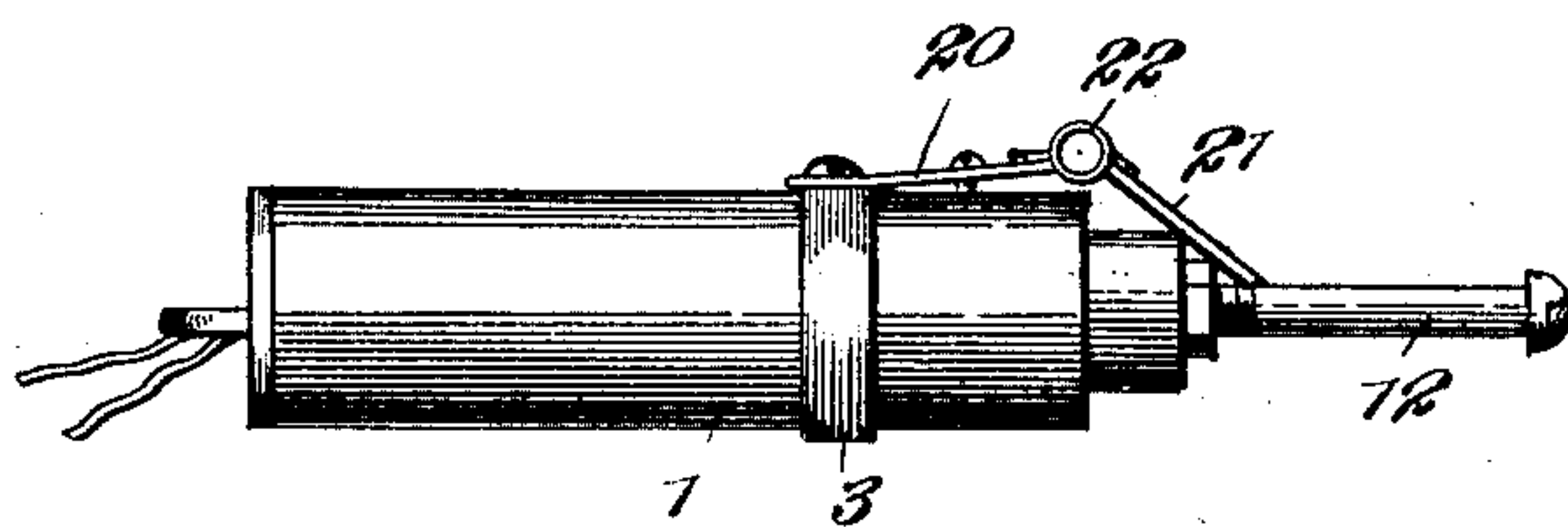


Fig. 3.



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Fig. 4.

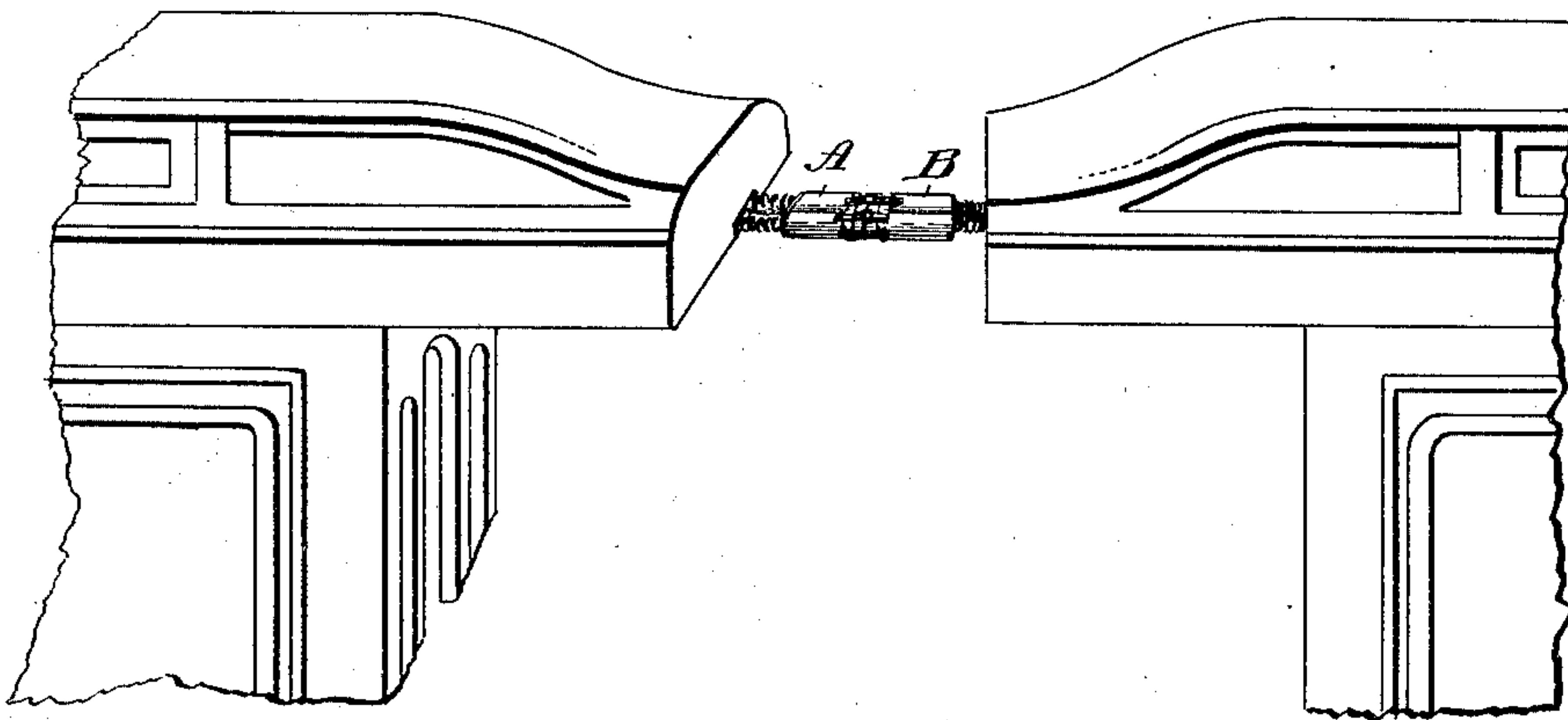


Fig. 5.

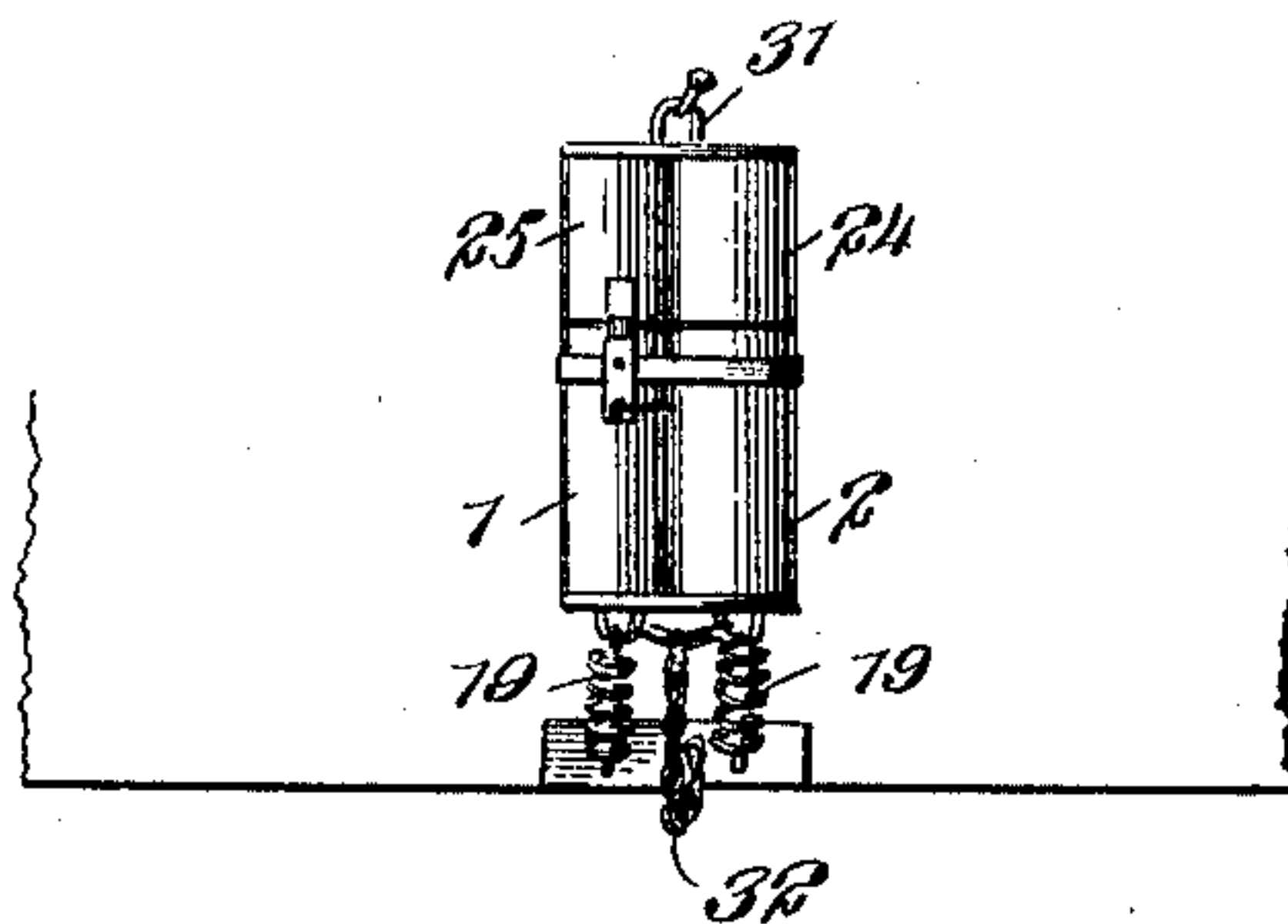
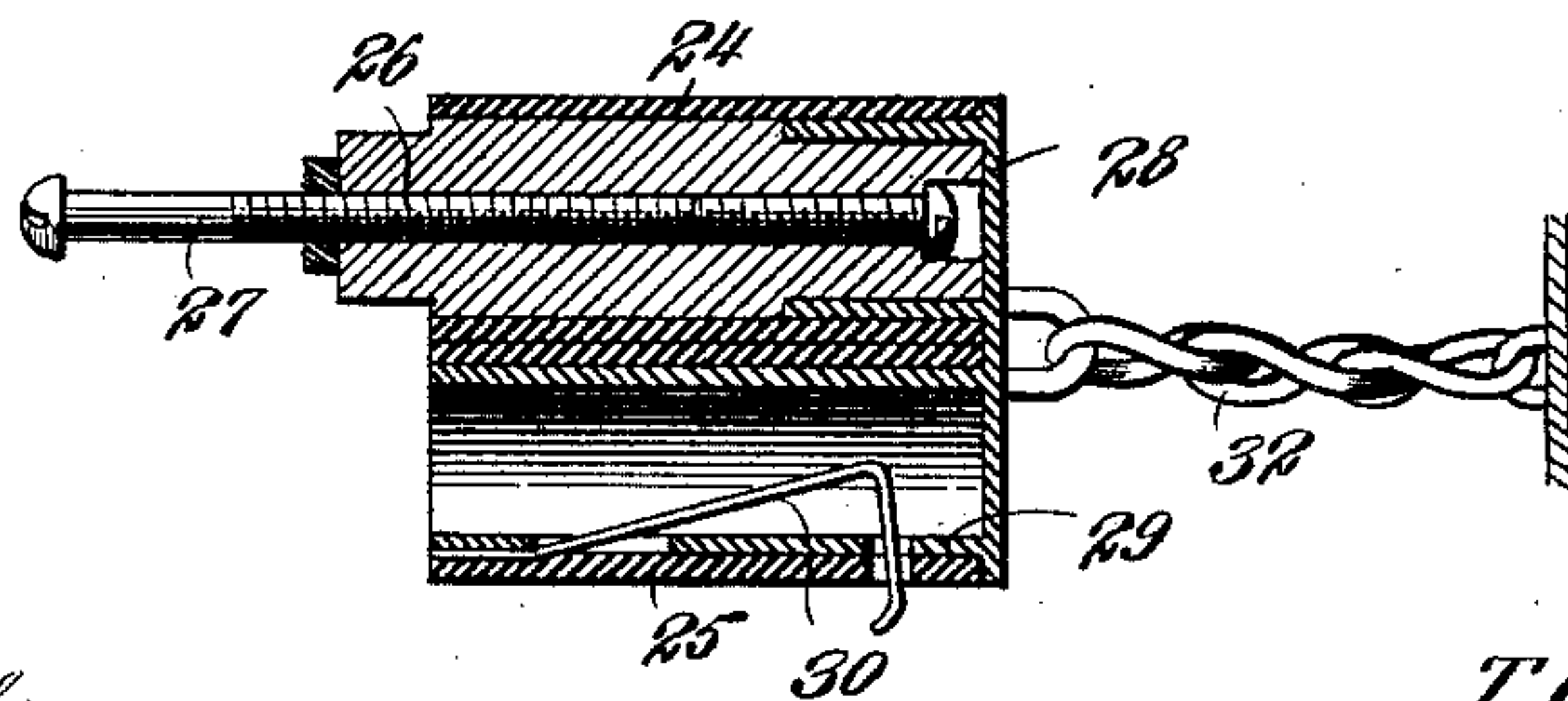


Fig. 5.



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# UNITED STATES PATENT OFFICE.

TUDOR C. JAMES, OF MANISTEE, MICHIGAN.

## ELECTRIC COUPLING.

SPECIFICATION forming part of Letters Patent No. 699,469, dated May 6, 1902.

Application filed August 28, 1901. Serial No. 73,596. (No model.)

*To all whom it may concern:*

Be it known that I, TUDOR C. JAMES, a citizen of the United States, and a resident of Manistee, in the county of Manistee and State of Michigan, have invented a new and Improved Electric Coupling, of which the following is a full, clear, and exact description.

This invention relates to improvements in electric couplings designed particularly for connecting signal-wires between the cars of a railway-train, although it may be employed generally for connecting wires designed at times to be separated; and the object is to provide a coupling of simple construction and of sections so arranged that should the sections be separated either intentionally or through accident, such as the breaking of the train, the circuit will be completed in each section, and therefore not interfere with the signaling system.

I will describe an electric coupling embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of an electric coupling embodying my invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a side view of one section of the coupling, showing the circuit as closed through it. Fig. 4 illustrates the manner of connecting the coupling to cars. Fig. 5 is a sectional view of a coupling-holder for the rear end of a train, and Fig. 6 shows a manner of attaching the same.

The coupling proper consists of two sections A B. Each section is provided with two chambers separated one from the other, and these chambers may be conveniently made, as here shown, of casings 1 2, consisting of rubber or other suitable non-conducting material, and when the two chambers are placed together they are secured by means of a metal band 3, slightly inward of the inner end, the outer end being closed by a cap 4, of metal, and having socket-sections 5, which pass into the outer ends of the tubes 1 and 2. In the socket-section 5 of the tube or chamber 1 is a block 6 of insulating material, through which a screw-bolt passes, the said

bolt being connected with a bell line-wire 8. The inner end of the bolt engages the interior thread of a metal sleeve 9, the said metal sleeve at one end abutting against the block 6 and at the other end against a tubular block 10, which has at its inner end a slight projection beyond the end of the tube 1, and this projected end is received by a metal sleeve 11, held friction-tight in the other section. Passing through the block 10 and engaging with the interior screw-thread of the sleeve 9 is a current-carrying screw 12, which projects beyond the end of the sleeve 11 and is provided with a head, here shown as rounded. In the other chamber of the coupling-section a tubular block 13 is engaged in the socket portion 5, and on the inner end of this tubular block 13 is a metal cap 14, to which one end of a spiral spring 15 is attached, the other end of this spiral spring having secured to it a plate 16, having a depression or opening at the center to receive the head of the bolt 10 of the opposite section, as clearly indicated in Fig. 2. The spring and plate 16 are in electrical connection with a bell-wire 17.

It will be seen that when the two sections are together the sleeve 11 of one section will engage with the block 10 of the other section, and the circuit will be completed through the screw 7, the sleeve 9, the screw 12, the plate 16, the spring 15, the cap 14, and the wires.

To securely hold the sections together, I connect with the sleeve 11 of each section a spring 18. This spring is secured to the sleeve 11 and passes through an opening in said sleeve and bears against the current-carrying screw 12, inward of its head, and the said spring has an outwardly-extended finger-piece, so that it may be raised by hand when desired to separate the sections.

To permit a slight yielding movement of the coupling without disconnecting the parts when a train is turning a curve or the like, the sections are connected to the respective cars by means of springs 19. Two springs are connected to each section of the coupling. Should the sections be separated by the separation of the cars of a train, it is desired that a buzzer-circuit should be closed. For this purpose I have mounted a spring-contact on the tube 1 of each section. This spring-con-



tact consists of a plate 20, attached to the tie-band 3 and having a swinging section 21, which normally engages against the outer surface of the tube 2, as clearly indicated in Fig. 1. Should, however, the sections become separated, the section 21 of the contact-plate will be forced downward by means of a spring 22 to engage with the screw 12 and close the circuit through a wire 23, which extends from the plate 20 through an opening in the block 13, and thence out through a buzzer or the like.

It is necessary to support a coupling-section at the rear end of the last car of a train to prevent its contacting with the ground and to prevent entrance of dirt. For this purpose I have shown a device consisting of two tubes 24 and 25, of insulating material, secured together in any desired manner. In one of the tubes is a tubular block 26, through which a screw 27 passes. The said screw is extended and has a rounded head similar to the screw 12 for engaging with the plate 16 in a coupling-section. On this supporting device is a metal cap 28, which has a long metallic socket-section 29, extended through the tube 25. Connected to this socket 29 is a spring finger or latch 30. When this plug is in place, the screw 27 will engage with the plate 16 of a coupling-section, while the screw 12 of said coupling-section will engage with the spring-contact 30. This supporting device may be secured to the rear platform or other portion of a car in any suitable manner. In Fig. 6 I have shown it as suspended on a pin 31 and connected otherwise to the car by means of a chain 32.

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

1. An electric coupling, comprising two sections, each section being divided into two chambers or compartments, contact devices arranged in the chambers, and contact devices carried by each section for closing a circuit when the sections of the coupling are separated, substantially as specified.

2. An electric coupling, comprising two sections, each section being divided into two chambers, a block arranged in the outer end of one of said chambers, a contact-screw passing through a central opening in said block and adapted for connection with a line-wire, a metallic sleeve with which the inner end of

said screw-contact engages, another block arranged in said chamber, a contact-screw extending through said other block and engaging with said sleeve, a sleeve in other chamber engaging the projected end of said other block, a block in the other chamber, a plate on the inner end of said block and in connection with the line-wire, a spring attached to said block, and a cap secured to the other end of said spring and adapted for engaging with the last-named contact-screw of the other section, substantially as specified.

3. An electric coupling, comprising two sections, each section consisting of two tubes of insulating material, the two tubes being secured together, a metallic cap at the outer end of the section, socket-sections extended from said cap into the tubes, a block of insulating material in the socket in one of the tubes, a contact screw or bar passing longitudinally through said block and having connection with a line-wire, a metallic sleeve with which said screw or bar engages, another block arranged in said tube, a long contact screw or bar extended through said other block and engaging with the sleeve, the said long contact screw or bar being provided with a head, a spring arranged in a tube of the other section of the coupling for engaging said last-named screw or bar, a tubular block in the other tube of the section, a cap on the inner end of said block, a spring connected at one end to the cap, and a plate connected to the other end of said spring, substantially as specified.

4. In an electric coupling, a section having circuit-carrying devices therein, and a closing-plug for the rear end of a car, the said plug consisting of two tubular portions of insulating material secured together, a cap at one end of said tubes, a sleeve or socket portion extended from said cap through one of the tubes, a spring arranged in said socket portion, a block arranged in the other of the tubes, and a contact-bar extended through said block but not engaging with the cap, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

TUDOR C. JAMES.

Witnesses:

CHAS. HIGGINS,  
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