

(No Model.)

J. R. DE MIER.

ELECTRIC TRAIN SIGNALING APPARATUS.

No. 381,343.

Patented Apr. 17, 1888.

Fig 1.

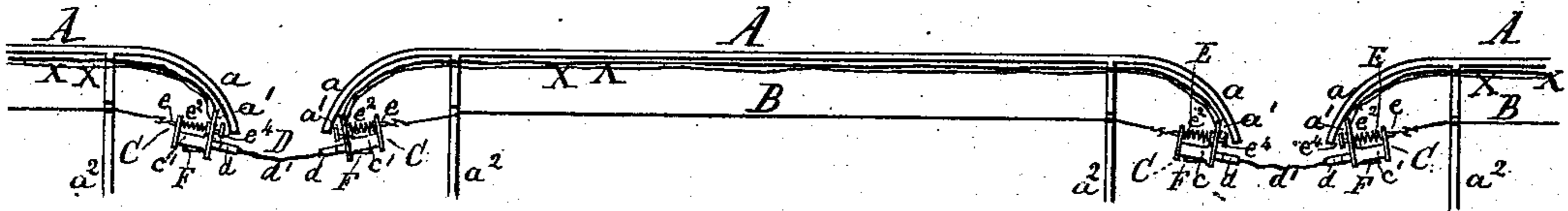


Fig 2.

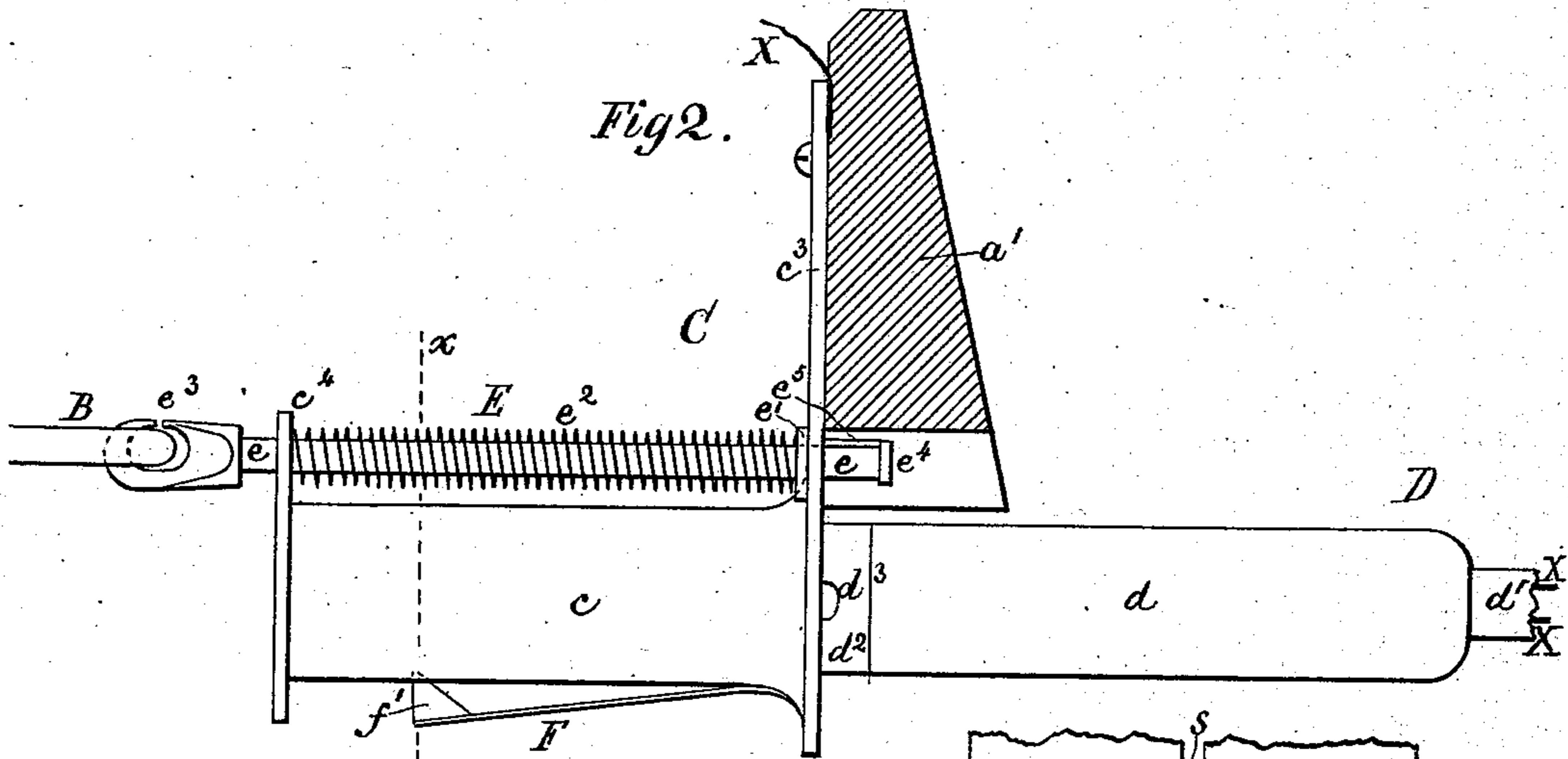


Fig 3.

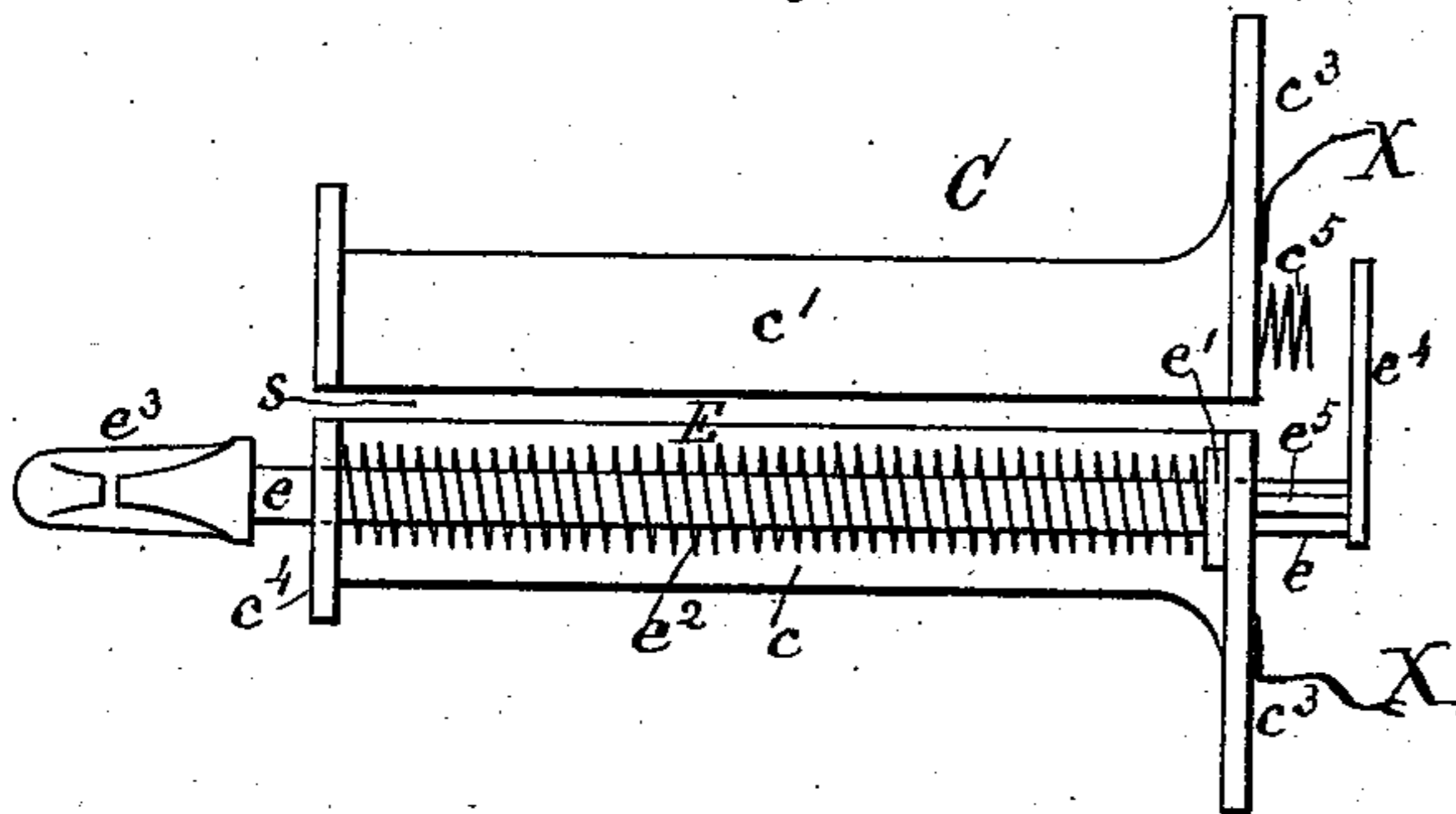


Fig 4.

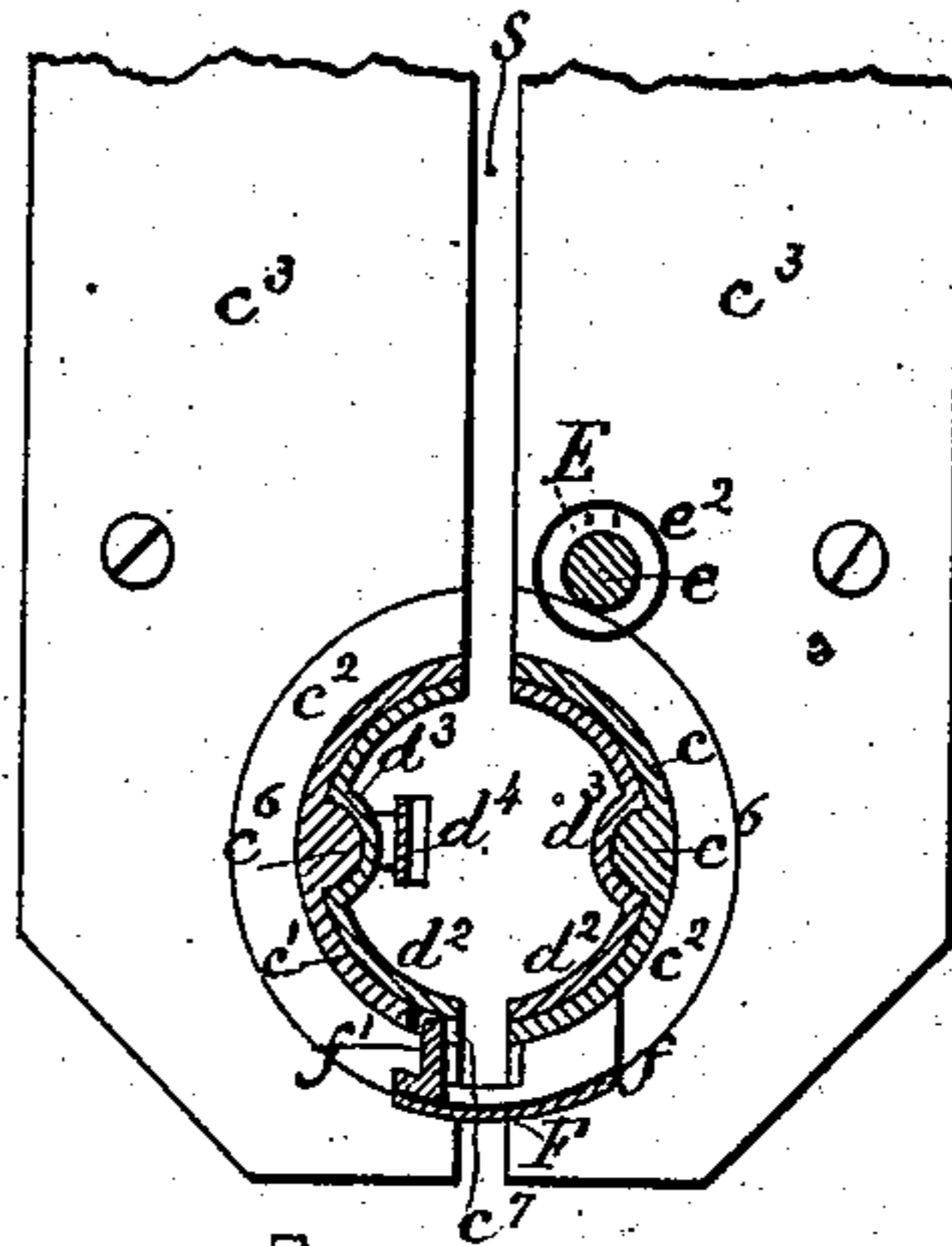
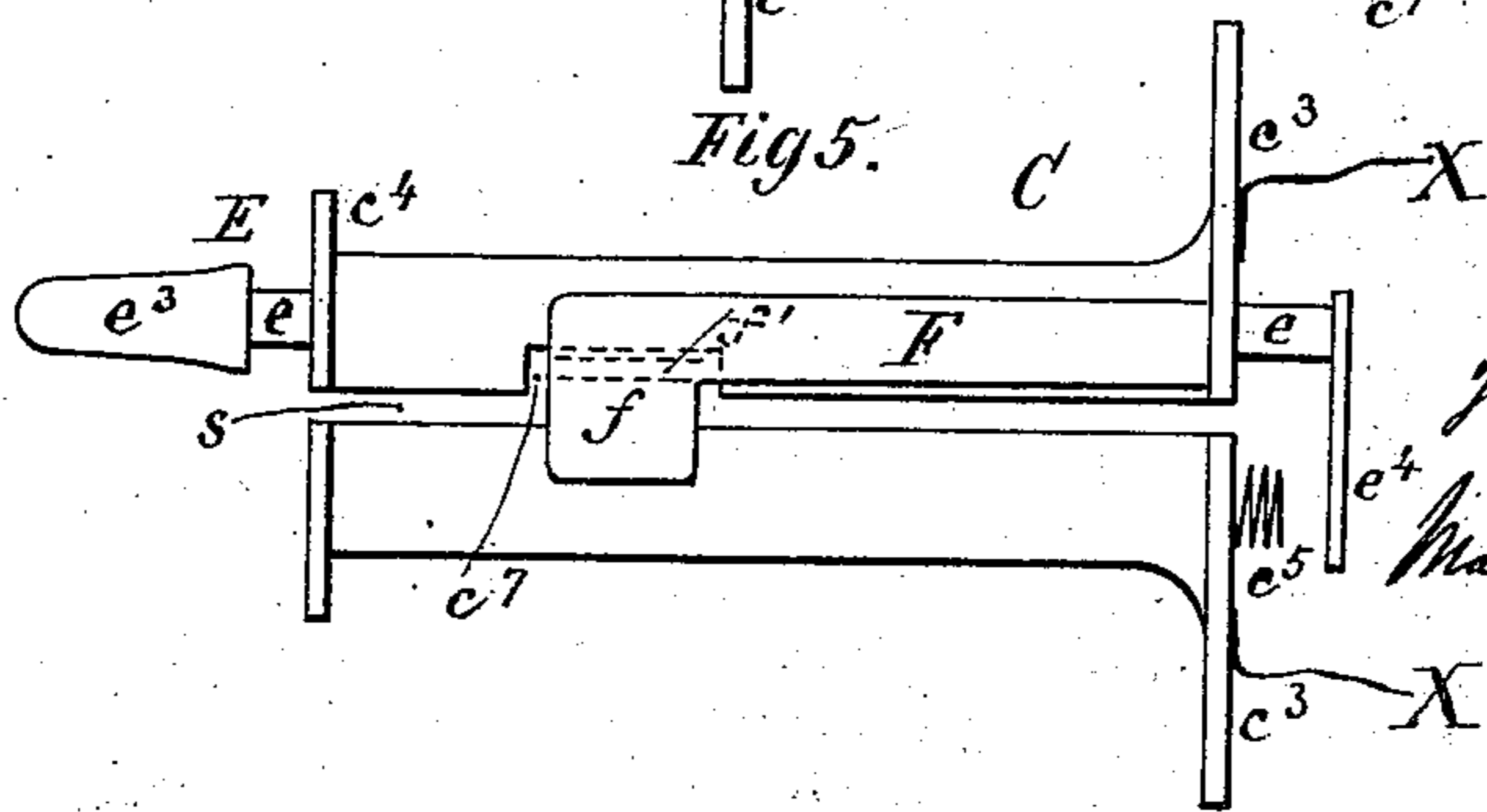


Fig 5.



Witnesses:

E. J. Fenwick.  
J. C. Tiffany.

Inventor:

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by his atty  
Mason, Fenwick & Thomas

# UNITED STATES PATENT OFFICE.

JOHN R. DE MIER, OF LAS CRUCES, TERRITORY OF NEW MEXICO.

## ELECTRIC TRAIN-SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 381,343, dated April 17, 1888.

Application filed March 10, 1888. Serial No. 266,785. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN R. DE MIER, a citizen of the United States, residing at Las Cruces, in the county of Doña Ana, Territory of New Mexico, have invented certain new and useful Improvements in Electric Train-Signaling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in a stationary electric coupling-section fastened to the hood-end extension of a railroad-car roof, a detachable electric coupling-section held in said stationary section, and a conductor's circuit-closer or switch attached to the same and adapted for connection with the pull-rope.

The object of the invention is to facilitate the equipment of railroad-cars with signaling apparatus and render the electric coupling of such cars less difficult than heretofore without enhancing the cost, as will be hereinafter shown.

In the accompanying drawings, Figure 1 is a sectional view of several car-roofs, showing the hood-end portions of the roofs of the adjoining cars provided with my invention. Fig. 2 is an elevation, on a larger scale, of my invention, showing in section a block by which it may be fastened in position under the hood end of the roof. Fig. 3 is a top view of the same. Fig. 4 is a transverse section in the line  $xx$  of Fig. 2. Fig. 5 is a bottom view of Fig. 2.

The letter A in the drawings represents the roof portion of a railroad-car; B, the pull-rope; C, the stationary coupling-section; D, the detachable coupling-section, and X X the circuit-wires.

The hood-end portions  $a$  of the cars are provided with the stationary coupling-sections C, which are, by means of a wedge or other suitably-shaped block,  $a'$ , or other ordinary means, fastened to the inner surface of the hood, and held thereby in an inclined position and in line with the portion of the pull-rope B between the end wall,  $a^2$ , of the car and end of the hood  $a$ .

The stationary coupling-section C consists of two semi-cylindrical electric conductors,  $c$   $c'$ , having flared end portions,  $c^2$ , and flanges  $c^3$ ,

by means of which latter they are fastened to the block  $a'$ , so as to afford easy access to the detachable coupling. To the flanges  $c^3$  the circuit-wires X X of the car are attached in the usual manner, and to one of the conductors  $c$  a switch or circuit-closer, E, is attached. This circuit-closer E consists of a pull-rod,  $e$ , hung in the flange  $c^3$  of the semi-cylindrical conductor  $c$ , and a flange,  $c^4$ , at the other end of the same. Between these flanges and near the flanges  $c^3$  a collar,  $e'$ , is provided on the circuit-closing or pull rod  $e$ , and between the collar  $e'$  and flange  $c^4$  a spring,  $e^2$ , is placed upon the rod  $e$ , whereby the normal position of the rod is sustained. Outside the flange  $c^4$  a hook,  $e^3$ , is attached to the rod  $e$ , for the purpose of attaching the pull-rope B of the car to it; and beyond the flange  $c^3$  the rod  $e$  is provided with an angular contact-plate,  $e^4$ , extending over a contact-spring,  $e^5$ , (which is preferably of spiral form,) on the flange  $c^3$  of the electric conductor  $c'$ . The contact-spring is touched by the plate  $e^4$  when the pull-rod  $e$  is pulled by the rope B, thereby closing the circuit. The end portion of the pull-rod  $e$ , which slides in the flange  $c^3$ , is provided with a tongue,  $e^5$ , whereby it is prevented from turning. The lower portion of the electric conductor  $c$  is provided with a spring, F, which, by means of an angular head,  $f$ , bridges the non-conducting spaces between the conductors  $c$   $c'$ , and by touching both conductors closes the circuit as long as the coupling-section D is not inserted.

The detachable coupling-section D is of ordinary construction, preferably that shown in Letters Patent granted to J. C. Tiffany and myself November 15, 1887, it consisting of a non-conducting plug or handle,  $d$ , at either end of a coupling-conducting-rope,  $d'$ , containing circuit-wires X X, and semicircular conducting-plates  $d^2$ , connected to said circuit-wires and provided with longitudinal corrugations  $d^3$ , fitting corresponding ribs,  $c^6$ , in the electric conductors  $c$   $c'$ , and an ordinary circuit-closer,  $d^4$ . When the conducting-plates  $d^2$  are inserted into the electric conductors  $c$   $c'$ , a lug,  $f'$ , of the spring F will be lifted, so as to move the portion  $f$  of said spring away from the electric conductors  $c$   $c'$ , and thus open the circuit, which remains open as long as the cars are thus coupled. Sufficient space,  $c^7$ , is provided around the lug

$f'$  in the electric conductor  $c$  to insure insulation of the open circuit. By this construction of the automatic circuit-closer I insure a shorter movement of the switch-spring  $F$  and a greater reliability of action, and when it is desirable to keep the circuit open, even when the coupling-section  $D$  is not used, a pin of wood or other non-conducting material pushed between the spring and conductor  $c$  will serve this purpose, for which in other constructions a non-conducting plug would have to be inserted into the stationary section.

The pull-rod  $e$  serves as a convenience for the conductor, as the pull-rope can be connected to it, and by pulling said rope in or outside the car signals will be given.

The circuit-wires  $X X$  are permanently fixed in the cars and reach from end to end of the hoods over the platforms, where the stationary conductors  $c c'$  are fastened, as described. This arrangement has proved to be the best for the purpose of coupling, as the said place is more easily reached by the employés than any other above the car-door heretofore used. The coupling-sections  $D$  will in this case be considerably shorter—say about

two and one-half feet long, instead of about seven (7) feet, as formerly—thereby insuring less wear of the conducting-rope and requiring less store-room for the detached coupling-sections.

What I claim as my invention is—

1. In an electric car-coupling, the combination of a detachable coupling-section,  $D$ , having an automatic circuit-closer,  $d^t$ , and the semi-cylindrical electric conductors,  $c c'$ , of the stationary coupling-section  $C$ , and a circuit-closing spring,  $F$ , having a bridging-flange,  $f$ , and lug  $f'$ , substantially as and for the purpose described.

2. The combination of the electric conductor  $c$  of the stationary coupling-section  $C$ , pull-rod  $e$ , having contact-plate  $e^t$ , and the conductor  $c'$  of said section, having contact-spring  $c^b$ , substantially as and for the purpose described.

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

JOHN R. DE MIER.

Witnesses:

EDWARD T. FENWICK,  
W. P. BELL.