(No Model.) 3 Sheets—Sheet 1.

G. D. BURTON.

ELECTRICAL CONNECTION.

No. 341,128. Patented May 4, 1886.

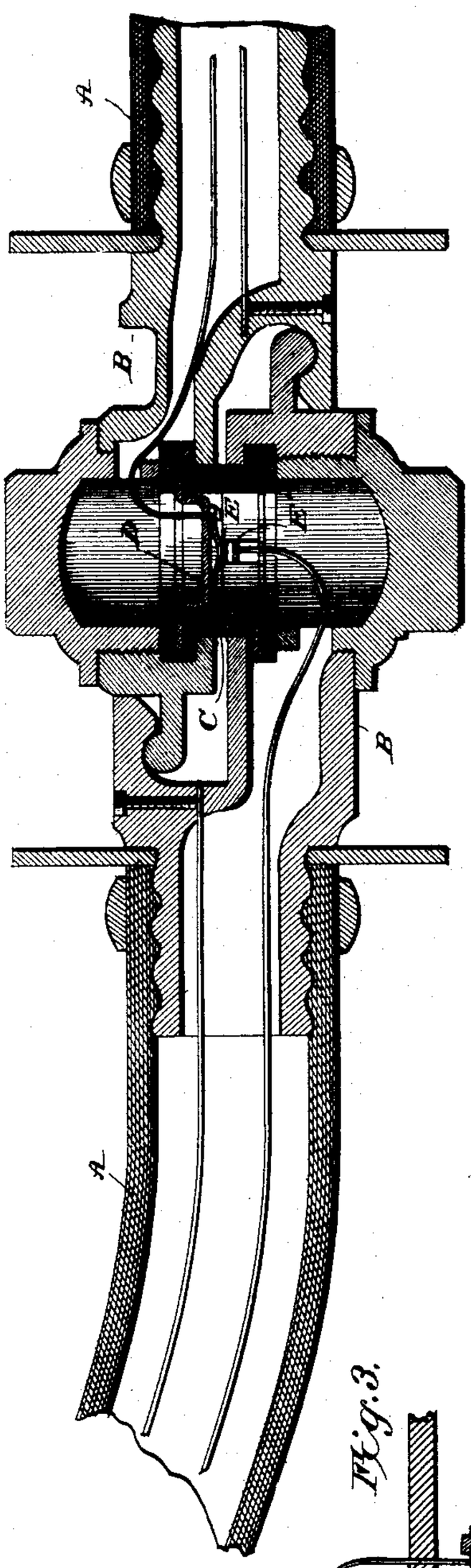

Fig. 1.

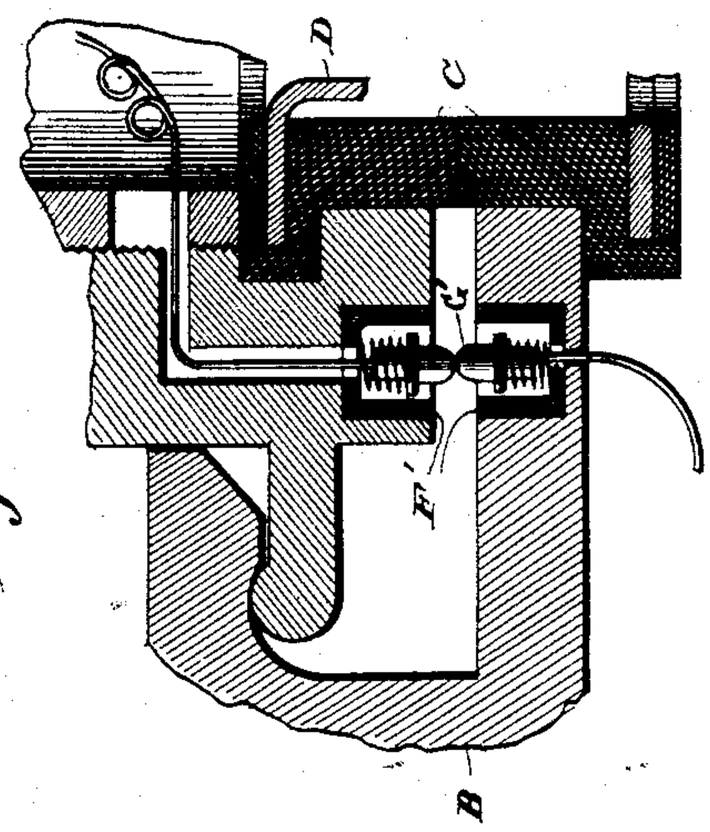

Fig. 2.

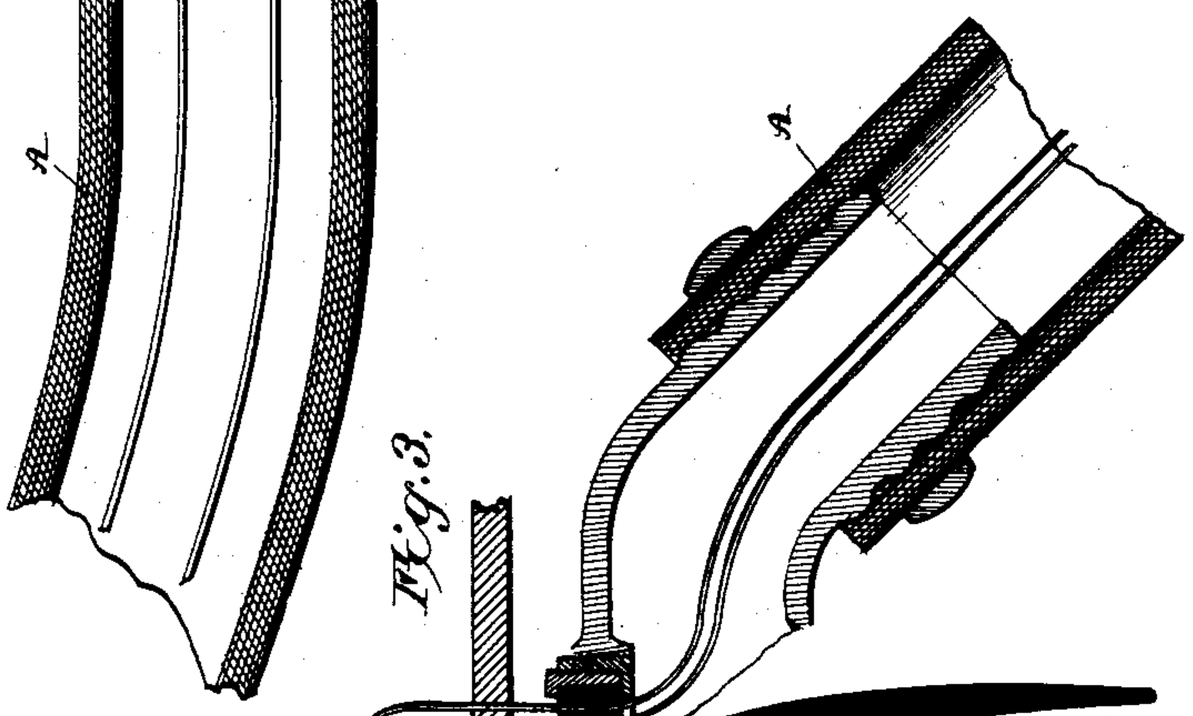

Fig. 3.

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(No Model.) 3 Sheets—Sheet 2.

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Fig. 4.

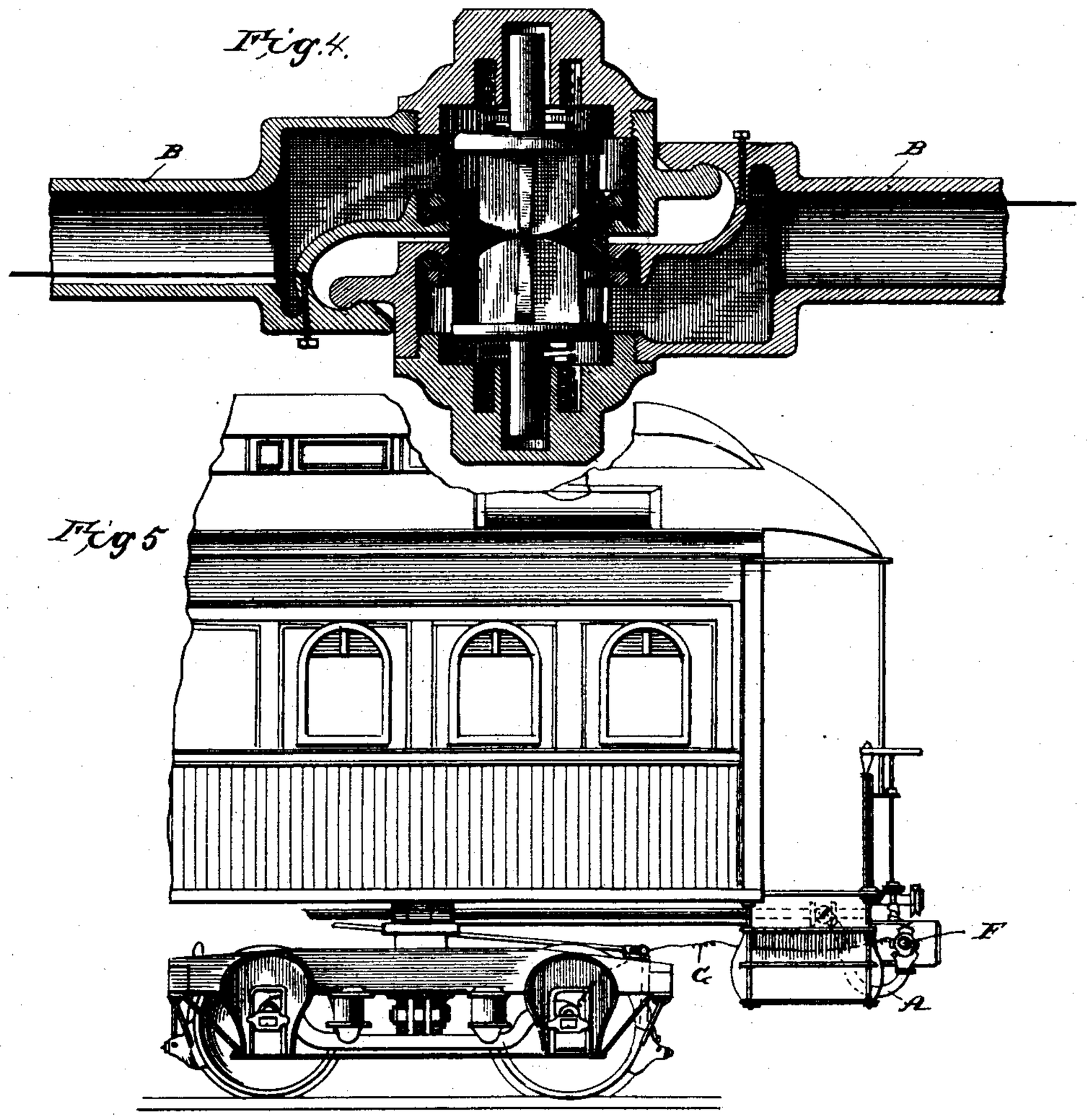
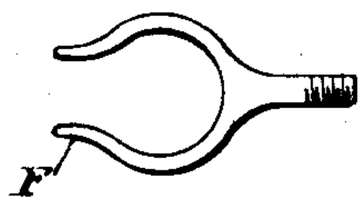


Fig 5

Fig. 6.



WITNESSES

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(No Model.)

3 Sheets—Sheet 3.

G. D. BURTON.

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Fig. 8.

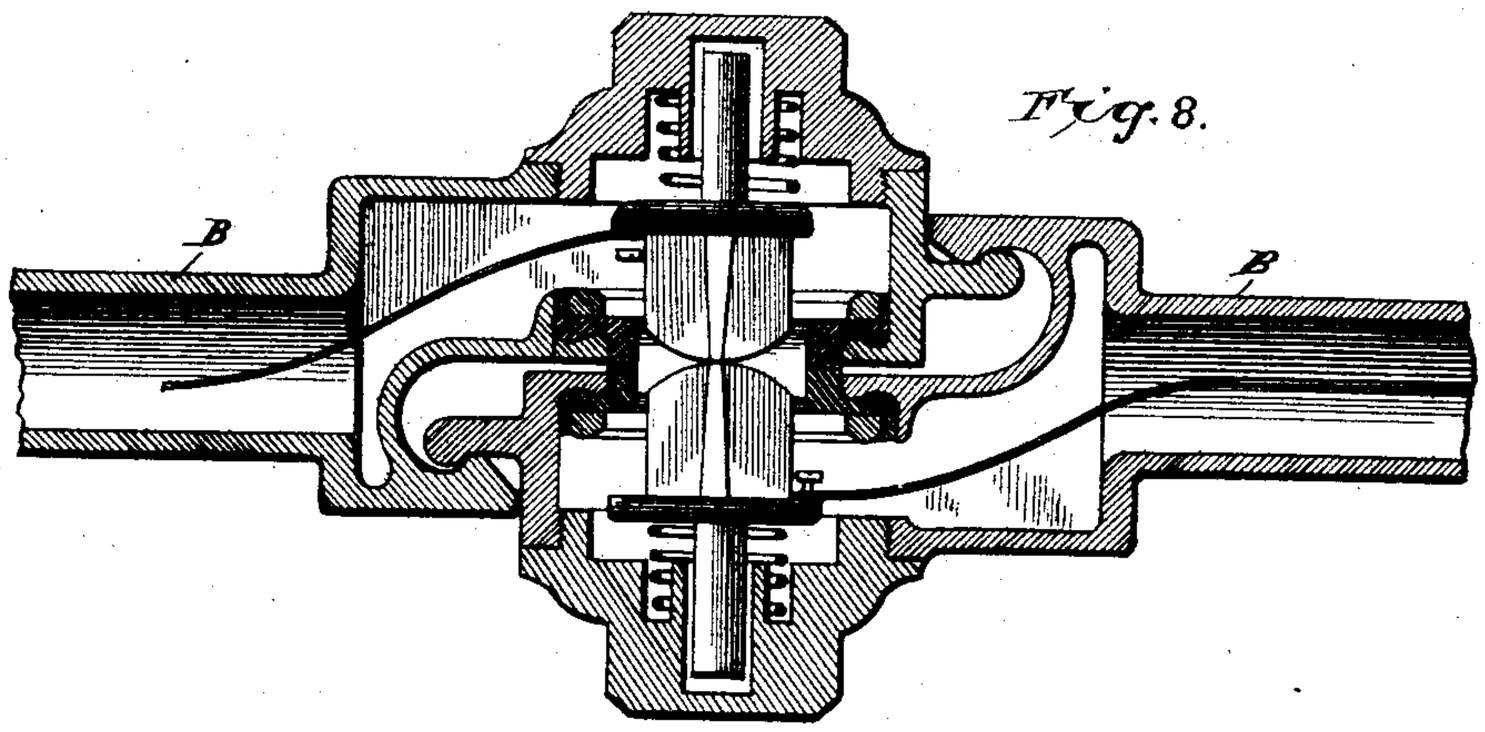


Fig. 7.

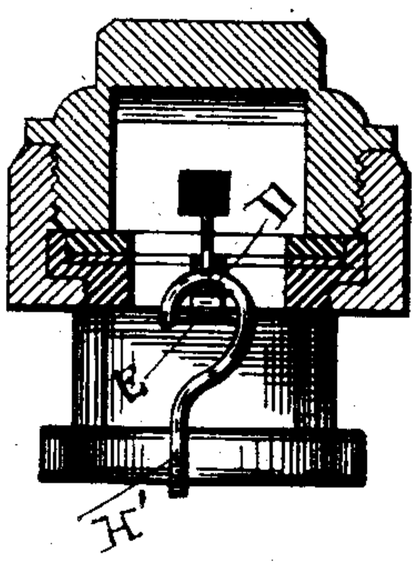
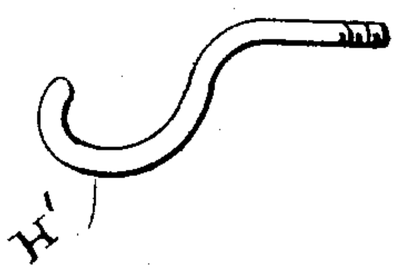


Fig. 9.



Witnesses,
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Inventor.
By C. E. Barber
His Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE D. BURTON, OF BOSTON, MASSACHUSETTS.

ELECTRICAL CONNECTION.

SPECIFICATION forming part of Letters Patent No. 341,128, dated May 4, 1886.

Application filed January 9, 1886. Serial No. 188,143. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. BURTON, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Electrical Connections, of which the following is a specification, reference being had therein to the acccompanying drawings.

This invention relates to certain new and useful improvements in the electrical connections used in electrical circuits on board of trains, either for the purposes of electric lighting or of signaling.

In the accompanying drawings, forming a portion of this specification, and on which similar letters of reference indicate the same or corresponding features, Figure 1 is a sectional view showing the sections of the hose connected; Fig. 2, a modified means of connection between the couplings; Fig. 3, a view showing the entrance of the wire into the hose. Fig. 4 shows the connection with a modified form of coupling. Fig. 5 shows the means of connection on the end of the last car of a train with the coupling shown in Fig. 4, and Fig. 6 is a detail view of the hook which supports the hose-coupling shown in Fig. 4 at the rear of the train. Fig. 7 is a detail transverse sectional view of the coupling shown in Fig. 1, embraced by the hook shown in detail in Fig. 9. Fig. 8 represents a longitudinal section of a coupling provided with electrical conductors which extend through the hose and are secured to the valves in the central part of the coupling; and Fig. 9 is a plan view of the hook shown in Fig. 7, which embraces the cross-bar of the packing-ring washer when the hose is hooked up on the bumper or coupler of the car.

The letter A designates the two connecting sections of the hose of an air-brake provided each on one end with the usual coupling, B. The interior of each coupling is provided with the rubber packing-ring C, held in place by the washer D. One of the couplings (the upper one in this instance) is provided on that side of the face which fits against the other coupling with a curved spring, E, securely fastened at one end and curved so as to extend beyond the plane of the face of the coupling. The other coupling is provided with a corresponding spring, E′, which crosses transversely the one above mentioned, and also extends beyond the plane of the face of the coupling, so that when the faces of the two couplings are brought together their respective springs press tightly against one another, and the circuit from one car to the other is thus completed. The wire may be laid along the sides of the car for the entire length of the closed portion, then extended down by the door-frame—for instance, through the flooring—and, as shown in Fig. 3, into the bushing of vulcanite or some other non-conductive material located in the upper surface of the hose beneath the body of the car. This is probably the most convenient manner of arranging the wire, though it is of course a mere matter of convenience and may be varied at pleasure.

As represented in Fig. 2, each face of the coupling is recessed, the interior of the recess covered with insulating-material F′, and a metallic push-button, G′, connected with the wire placed in each, so that when the faces of the couplings are brought together the buttons impinge, thus completing the circuit. It will be observed that the friction between the faces will always keep these buttons in a highly-polished condition, so that the electricity will readily pass from one to the other.

As seen in Fig. 4, I have shown a modified form of coupling, as also a modified form of connection. Here the wire passes direct to the face of the coupling, which is of iron, so that as the two faces are brought together the circuit is completed. This is the simplest form and the one I prefer in practice, though in particular instances it is sometimes desirable to use the forms previously described.

As seen in Fig. 5, I attach to the bumper or coupler of the car a hook or catch, F, on which the section of the coupling at the end of the train is placed. The return-circuit between this hook and the train is made by means of a wire, G, to the wheels and from thence along the track to the locomotive. This form of hook is used with the coupling last described, but for the coupling shown in Fig. 1 I use a hook, H′, like that shown in Figs. 7 and 9, and which is curved so as to engage the under side of the washer D, which, being metallic, completes the circuit. It is to be observed that this method of

connection between the cars avoids the trouble of making electrical connections as must now be done, but when the train is made up and the air-brake hose connected the electric connections are at the same time completed. Furthermore, the wires, being incased in the hose, are preserved from the rough handling to which they are now so often exposed.

The wires are all insulated, so that any contact with the metallic substance which might occur by reason of accident would not impair the efficiency of the system.

It will be noticed that Figs. 4 and 8 show the same views of the same coupling, but in the latter figure I connect the wire to the valves of the coupling instead of to the face thereof, as in Fig. 4.

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

1. The combination, with the hook adapted to support one of the air-brake couplings and a wire connecting said hook with the wheels and rails, of the air-brake couplings attached to each car and inclosing insulated electric wires connected directly to the faces of the respective couplings, so that when the air-brake couplings are united the electric connections are made.

2. In an air-brake-hose coupling, the combination, with the insulated packing-ring and the metallic washer, of the insulated electric wire inclosed within the coupling and connected with the washer.

3. In an air-brake-hose coupling, the combination, with the insulated packing-ring and metallic washer provided with a spring, of the insulated electric wire inclosed within the coupling and connecting with the spring on the washer.

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

GEO. D. BURTON.

Witnesses:
E. F. PERKINS,
CHAS. F. ADAMS.