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A. BAISIEUX.

ELECTRIC TRACTION FOR TRAMWAY OR SIMILAR VEHICLES.

(Application filed July 31, 1900.)

(No Model.)

2 Sheets—Sheet 2.

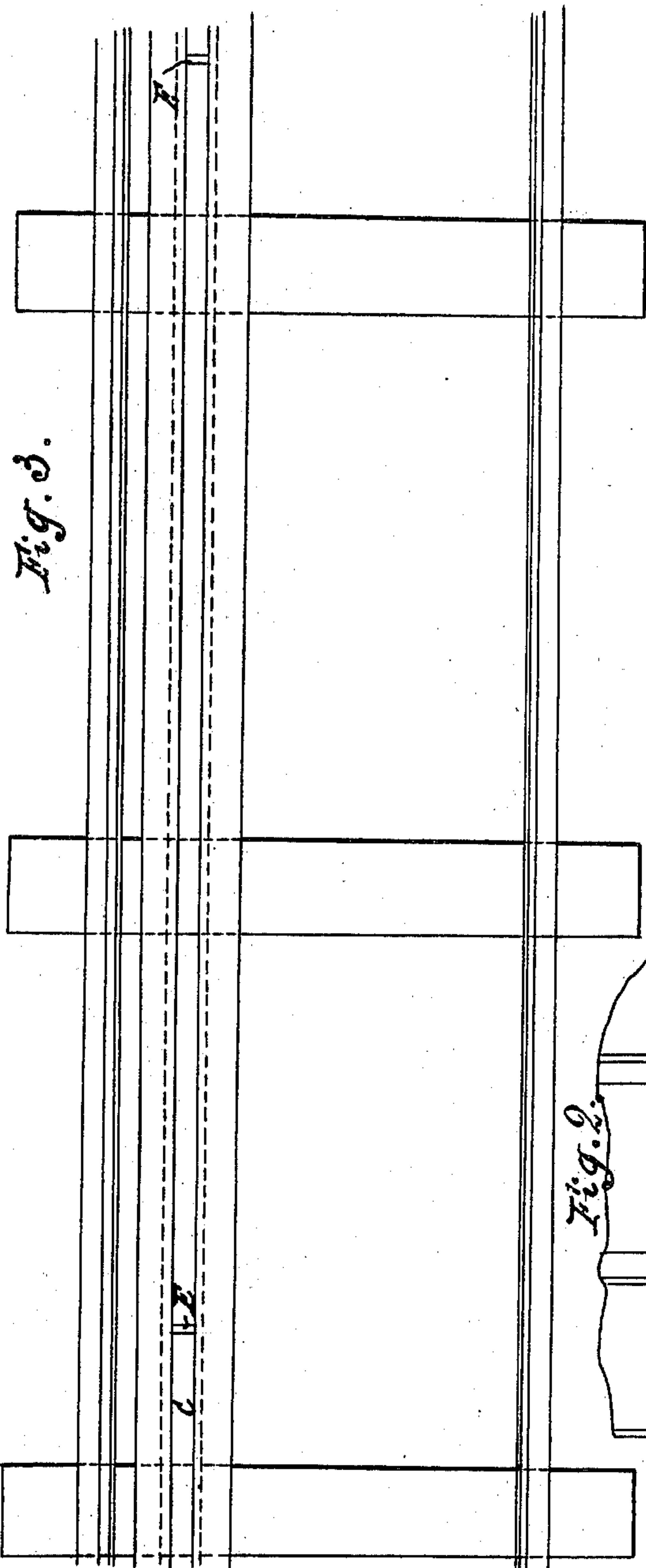


Fig. 3.

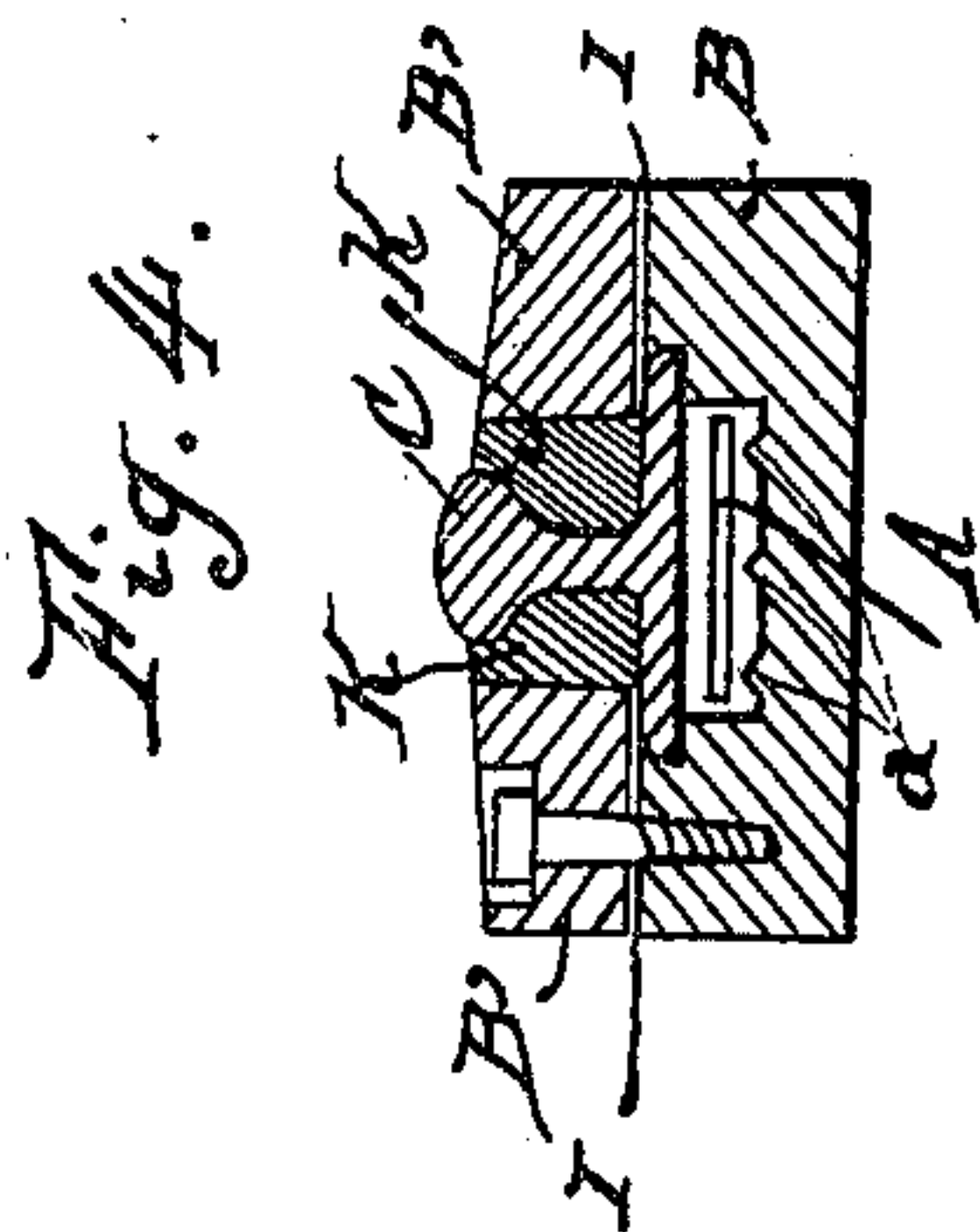


Fig. 4.

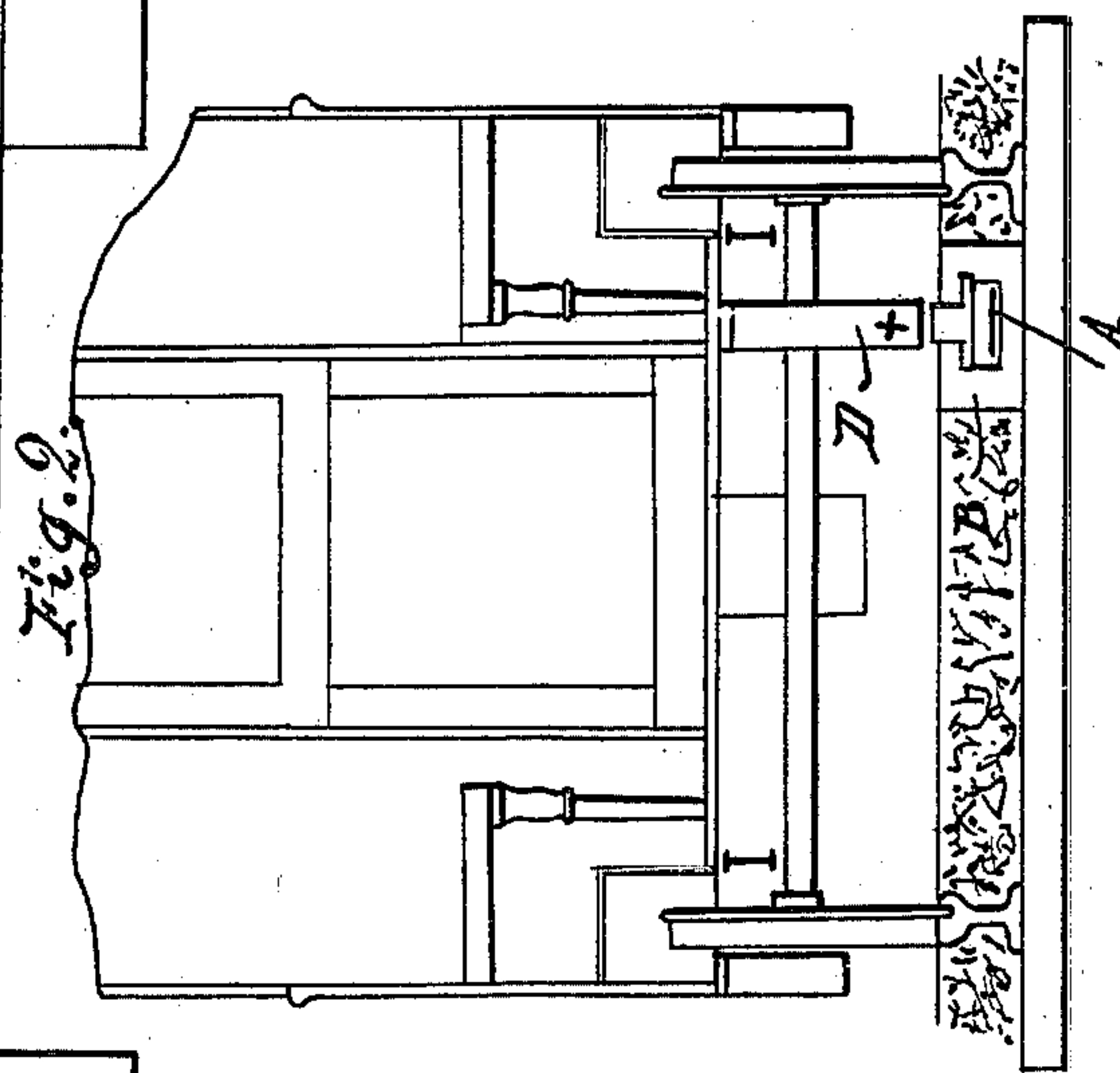


Fig. 5.

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# UNITED STATES PATENT OFFICE.

ARTHUR BAISIEUX, OF BRUSSELS, BELGIUM.

ELECTRIC TRACTION FOR TRAMWAY OR SIMILAR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 662,386, dated November 27, 1900.

Application filed July 31, 1900. Serial No. 25,401. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR BAISIEUX, a citizen of the Kingdom of Belgium, residing in Brussels, Belgium, have invented certain new and useful Improvements Relating to Electric Traction for Tramway or other Similar Vehicles; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to an improved method of electric traction for tramway or other similar vehicles by means of an underground conductor providing for automatic insulation, whereby the current can only be taken at the time of the passage of and immediately beneath the vehicle, the rest of the conductor becoming automatically insulated.

My invention consists in causing the electric current to pass along an iron band or ribbon arranged in a conduit of insulating material, which is closed upon all sides except its upper portion, which upper portion is closed by a series of sections or rails of inconsiderable length, the extremities of which rails do not come into contact, but are electrically insulated one from the other.

In the drawings accompanying and forming part of this specification, Figure 1 represents the present improvement adapted for use with a street-railway car. Fig. 2 is an end view of a part of the organization shown in Fig. 1. Fig. 3 is a plan view of a portion of a railway-track, and Fig. 4 is a cross-sectional view of this improved conduit.

Similar characters of reference indicate corresponding parts in the different figures of the drawings.

The conduit B is preferably formed by three lengths of wood impregnated with insulating material, the two side lengths B' being assembled with the lower length by means of screws in order to facilitate dismounting. The metallic band consists of a small iron rail or ribbon A, which is supported upon the bottom length of wood. Ribs or projections a, provided upon the bottom of the conduit, prevent the adherence of the band or ribbon A

thereto, while strips of india-rubber K, compressed by the side lengths of wood, form a tight joint upon the foot of the rail and prevent the admission of water. The spaces are filled with asphalt or other equivalent material.

The conduit for the electric conductor is arranged either between the rails upon which the vehicle runs or at the side of the same.

Vehicles intended for running upon tracks provided with my improved traction device are provided with a suitable magnet, such as a powerful permanent magnet D, consisting of steel plates, one of the poles of which magnet is fixed beneath the vehicle by its base, the other pole being directed toward the metallic rail C before referred to and arranged some millimeters above the same, which is placed above the iron electrical conductor A. An electromagnet may be used, if desired, in place of the permanent magnet.

When the vehicle passes along the track, the said iron electrical conductor A is attracted by the permanent magnet on the vehicle, thus establishing an electrical contact which enables the electric current to be taken by means of brushes F, arranged beneath the vehicle, and conveyed to the electric motor of the vehicle. Therefore when the vehicle advances the iron conductor A is attracted by the aforesaid permanent magnet fixed beneath the vehicle and establishes contact successively with all the metallic rails C, placed upon the track, and to which it is applied, those portions which are no longer attracted by the magnet being permitted to fall. It follows from this that it is only the metallic rails C beneath the vehicle which are charged with electricity, the rest remaining insulated.

In order to prevent the remanent magnetism from retaining the electric conductor A in contact with the metallic rail C when this latter is of iron, I arrange at the front and rear of the vehicle two pivoted magnets G, which may be raised and lowered by means of a suitable rod H and lever arrangement or other device. The pole of these magnets when they occupy a vertical position is opposite to the pole serving to lift the electric conductor A. When the vehicle is in motion, the front magnet is removed from the metallic rail C and the magnet situated at the



rear of the vehicle is lowered into proximity with the said metallic band. The magnetic fluid opposite to that which may have been left in said metallic bands by the permanent magnet causes the iron conductor to become detached from the metallic rail C and permits it to fall to the bottom of the conduit. The return of the current is provided for in the usual manner, and may be either by means of the rails, the earth, or a special return-wire.

My arrangement provides complete security against accidents. The lifting of the band is effected without noise or shock, since the raised portions when they again sink to the bottom of the conduit do not fall, but descend in making a large curve, which consequently prevents all noise and shock.

I claim—

1. In an electric-railway system, the combination, of a conduit formed of non-conducting and non-magnetizable material and embodying a series of insulated conducting sections or rails; a live magnetizable conductor movably located in said conduit and below said sections and in connection with a generator; a magnet carried upon the vehicle passing over said conduit and effective to move said conductor into contact with said sections; and means independent of the weight of the conductor for breaking contact between said conductor and sections.

2. In the electric traction for tramways and other similar vehicles the combination at the head and at the back of the vehicle of magnets allowed to approach the electrical conductor and having their poles fitted in an opposite situation relatively to the pole of the main magnet.

3. In an electric-railway system, the combination, of a conduit formed of non-conducting and non-magnetizable material and embodying a series of insulated conducting sections or rails; a live magnetizable conductor movably located in said conduit and below said sections and in connection with a generator; a magnet carried upon the vehicle passing over said conduit and effective to move said conductor into contact with said sections;

and magnetic means for breaking contact between said conductor and sections.

4. In an electric-railway system, the combination, of a conduit formed of non-conducting and non-magnetizable material and embodying a series of insulated conducting sections or rails; a live magnetizable conductor movably located in said conduit and below said sections and in connection with a generator; a magnet carried upon the vehicle passing over said conduit and effective to move said conductor into contact with said sections; and magnetic means also carried by the vehicle and manually operative for breaking contact between said conductor and sections.

5. In an electric railway, the combination, of a conduit having insulated conducting-sections; a magnetizable conductor movably located in said conduit; a magnet carried by the vehicle passing over said conduit and effective to move said conductor into contact with said conducting-sections; a contact device also carried by the vehicle for taking off the power-current from said conducting-sections; and means carried by the vehicle for breaking contact between said sections and conductor.

6. In an electric railway, the combination, of a conduit having insulated conducting-sections; a magnetizable conductor movably located in said conduit; a magnet carried by the vehicle passing over said conduit and effective to move said conductor into contact with said conducting-sections; a contact device also carried by the vehicle for taking off the power-current from said conducting-sections; and means carried by the vehicle for breaking contact between said sections and conductor, said means comprising an adjustable magnet shiftable toward and away from said sections.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ARTHUR BAISIEUX.

Witnesses:

HENRI BRAU REMIET,  
MAURICE LEPIEMME.