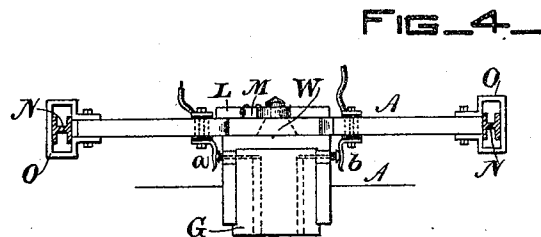
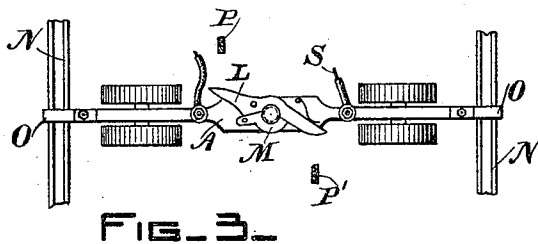
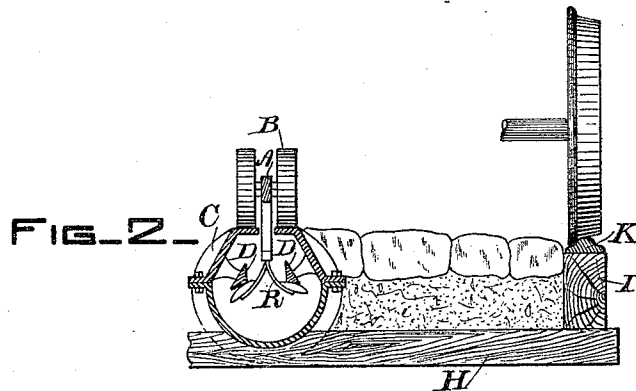
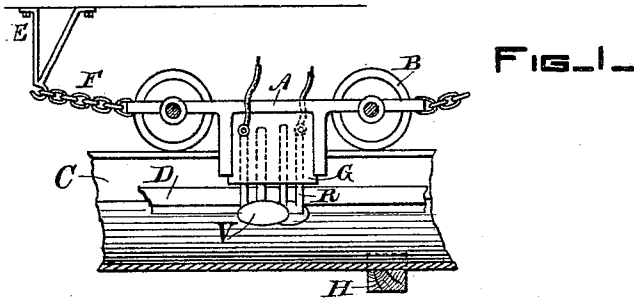


(No Model.)

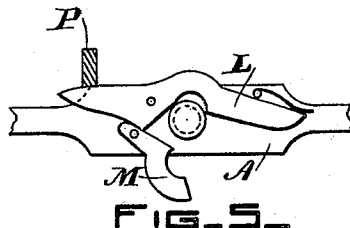
E. M. BENTLEY.
CONTACT FLOW FOR ELECTRIC CARS.

No. 461,548.

Patented Oct. 20, 1891.



WITNESSES:
A. A. Orne
J. L. Belfler



INVENTOR:
E. M. Bentley
Bentley & Knight
ATTYS.

UNITED STATES PATENT OFFICE.

EDWARD M. BENTLEY, OF BROOKLYN, NEW YORK.

CONTACT-PLOW FOR ELECTRIC CARS.

SPECIFICATION forming part of Letters Patent No. 461,548, dated October 20, 1891.

Application filed November 21, 1885. Serial No. 183,542. (No model.) Patented in England March 16, 1886, No. 3,718.

To all whom it may concern:

Be it known that I, EDWARD M. BENTLEY, a citizen of the United States, and a resident of Brooklyn, New York, have invented certain new and useful Improvements in Electric Railways, of which the following is a specification.

This invention has been patented in Great Britain, No. 3,718, dated March 16, 1886.

My invention consists of a contact-plow adapted to extend into a slotted conduit to make electrical connection with a conductor inclosed therein and provided with wheels adapted to roll on a track outside of the conduit and to carry the plow, which is held down by the pressure of the contact-springs within the conduit.

It also consists in certain features of construction of the plow.

In the accompanying drawings, Figure 1 is a side elevation of the plow, with the supporting-truck and the conduit in section. Fig. 2 is a section of the roadway and conduit with the plow in position. Fig. 3 is a plan of the truck with a detachable plow. Fig. 4 is a side elevation of the same, and Fig. 5 is a plan view showing the manner in which the plow is detached when it slides too far in a lateral direction.

In a patent granted to Walter H. Knight September 23, 1884, No. 305,731, is shown a contact-plow adapted to extend into a slotted conduit to make a constant connection between a stationary insulated conductor within the conduit and an electric motor adapted to propel a car to which the plow is attached. The said plow consists in general of a metallic protecting and supporting frame, in which are carried two flat conducting-strips having contact-brushes at their lower ends and embedded in a panel of insulating material. The plow is shown supported upon the axle of the car, so as to have free lateral play thereon, while the contact-brushes press against the vertical faces of the stationary conductors.

My present invention consists in providing a contact-plow of the kind described with an independent truck which is adapted to be drawn along the top of the conduit by the main car-truck, while within the conduit the contact-springs press against the under horizontal surface of the conductor.

In Figs. 1 and 2, A is the plow-frame, and G is the panel, of insulating material, in which are embedded the two flat conductors, which at their upper ends have flexible conductors attached, leading to the motor on the car in the usual way, and at their lower ends terminate in curved plate-springs R, to which are fastened contact-shoes V, adapted to press against the under horizontal surface of conductors D D. The conductors D D are supported from the walls of the conduit by insulating-pins in a well-known manner. Without the conduit two sets of rollers B are journaled in frame A and are adapted to roll on the top plates of conduit C. A flexible chain F connects the small truck thus formed to a brace E, projecting from a fixed part of the car. H is the tie, I the stringer, and K the rail, of the roadway.

In Figs. 3 and 4 I have shown a detachable plow and also some rigid guide-bars for connecting the truck with the car. In this case the frame A terminates at each end in a square loop or eye O, which embraces a rigid guide-bar N. N is in the shape of a horizontal I-beam and is fast to the car, while the embracing loops O have both a vertical and lateral play upon it. The plow in this case has a separate frame A', upon which is a shank W, adapted to extend up through a recess in A, where it is secured by the spring-clips L and M, encircling a neck on the end of the shank. PP' are two fixed stops extending downward from the car and adapted to engage with the projecting arms of L (see Fig. 5) and release the plow when it slides too far in a lateral direction upon guides N—as, for instance, when the car runs off the track. The conductors in the plow terminate in two contact-pins adapted to engage with fixed contact-springs *a* and *b*, so that the electrical as well as the mechanical connection can be readily broken.

I claim—

1. The combination of a railway-car, a propelling electric motor therefor, a conduit and a supply-conductor inclosed therein, with a supporting-truck adapted to ride upon the outside of said conduit and connected to the car, a contact-plow attached to the truck by a joint permitting movement of the plow relatively to the truck, and a flexible electric con-

ductor between the plow and car, substantially as described.

2. The combination, with a contact-plow extending into a slotted conduit to make connection with a fixed conductor therein, of a supporting electrically-propelled vehicle therefor outside of the conduit, and a contact on said plow having an upward spring-pressure.

3. The combination, with a truck carrying a contact-plow, of a fixed transverse guide by which said truck is propelled.

4. The combination, with an electrically-propelled vehicle, of a contact-plow extending into a slotted conduit for engagement with a supply-conductor, and an attachment at a point outside of the conduit connecting the plow with the vehicle, but permitting the automatic detachment of the plow, substantially as described.

5. The combination, with an electric railway, of a car, a propelling electric motor therefor, and a slotted conduit inclosing the supply-conductor, with a contact-plow detach-

able mechanically from the car, and springs, as *a* and *b*, forming a detachable electrical spring-clip connection between the plow and car at a point outside of the conduit, substantially as described.

6. The combination, with an electrically-propelled vehicle, of a conduit inclosing a supply-conductor, a contact-plow extending into said conduit, and a connection between the plow and vehicle at a point outside the conduit permitting the automatic detachment of the plow, as described.

7. The combination, with an electrically-propelled vehicle, of a detachable contact-plow connected therewith, a clip or lock for holding the same in place, and a releasing device adapted to actuate said clip in case of accident.

EDWARD M. BENTLEY.

Witnesses:

GEO. L. WHEELOCK,
HARRY E. KNIGHT.