(No Model.)

J. C. HENDERSON.

GRIP FOR ELECTRIC CARS.

No. 294,618. Patented Mar. 4, 1884.

Fig. 1

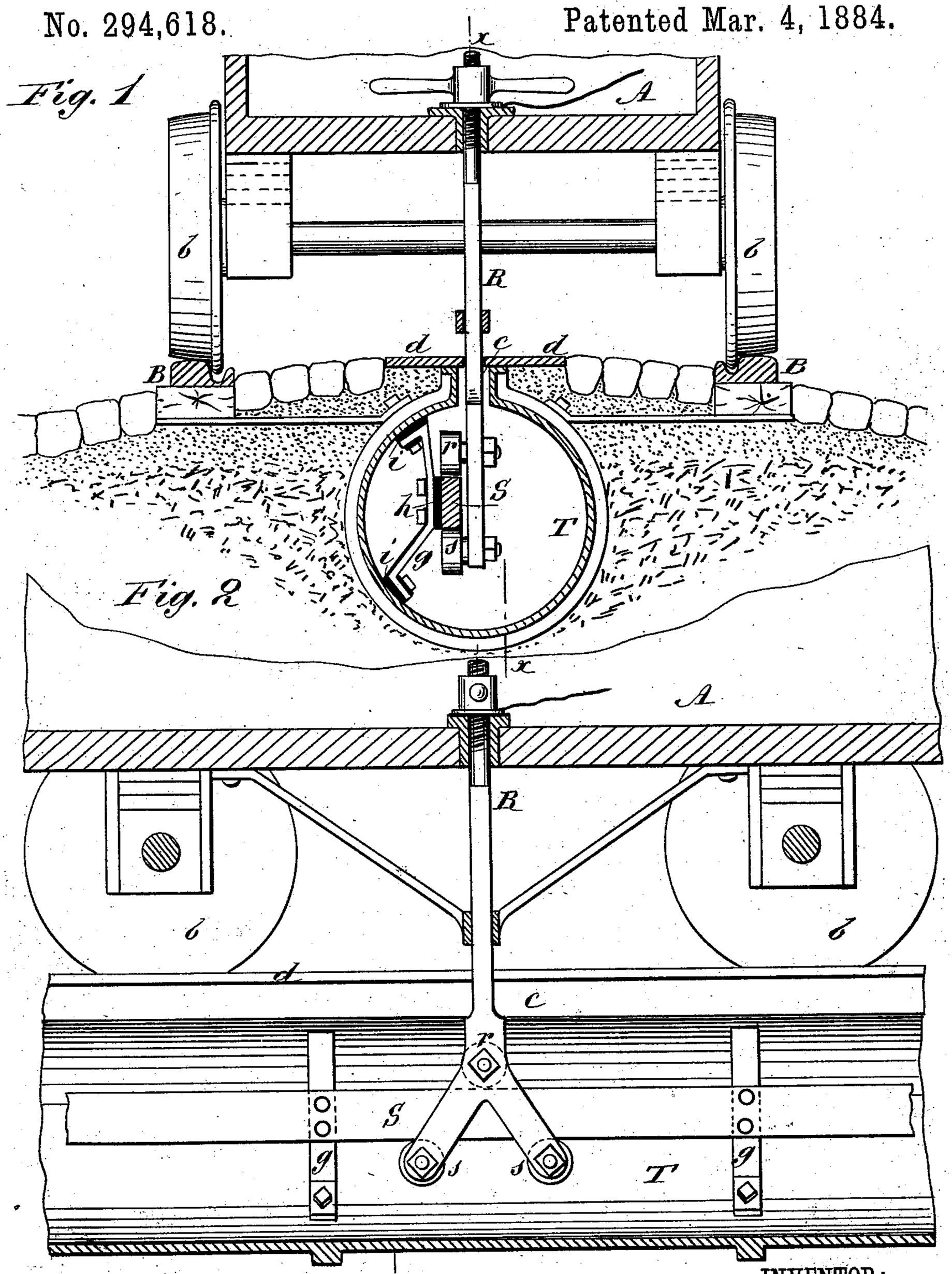

Fig. 2

WITNESSES:

C. Neveux

B. G. Underwood.

INVENTOR:

J. C. Henderson,

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN CARLOS HENDERSON, OF NEW YORK, N. Y.

GRIP FOR ELECTRIC CARS.

SPECIFICATION forming part of Letters Patent No. 294,618, dated March 4, 1884.

Application filed July 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. HENDERSON, of the city, county, and State of New York, have invented certain new and useful Improvements in Grips for Electric Cars, of which the following is a full, clear, and exact description.

This invention relates to apparatus for increasing the propelling grip or friction of electric motors on railways and other electric conveyers of goods and passengers, or either; also for conducting the current by which said motors are operated. It is, however, more especially designed for electric motors on railways; and the invention consists in certain combinations and constructions of parts, including an adjustable clamp capable of operation from the car of the motor, and which may also serve as a current-carrier, and a rail or bar arranged within an underground or separate duct, for said clamp to bear against to increase the friction of the motor-wheels when necessary, or, in case of the failure of the electric current, to assist the brake by increasing the pressure of the car-wheels on the track, the said rail also serving, if desired, as a conductor of the electric current to the motor, substantially as hereinafter described and claimed.

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

Figure 1 represents a vertical transverse section of a line of railway with electric motor-car in part thereon and my improved apparatus applied. Fig. 2 is a longitudinal vertical section of the same on the line *x x* in Fig. 1.

A represents an electric-motor-driven car arranged to run by its wheels *b b* upon the rails B B of a line of railway, and which may be fitted with any suitable electric motor or mechanism for operating the propelling-wheels of the car.

Arranged beneath the track, and longitudinally with it between the rails B B, is a tube or duct, T, made to extend throughout the length of the track, and having a longitudinal slit or opening, *c*, that may be partly covered from either side by upper plates, *d d*, in its top, to provide for communication while in transit between the car and the interior of said duct. This communication allows for the passage through the tube of an adjustable rod, R, which forms part of the adjustable clamp, and which is connected with the car. Said clamp, which may also serve as a current-carrier, consists in part of the adjustable or tightening rod R, that passes through the floor of the motor-car, and may be operated either by hand or by foot, and in part of upper and lower rollers, *r s s*, on the lower end of said rod within the duct T. These rollers are arranged to run above and below and in contact with a longitudinal rail or bar, S, within the duct T, against which rail, on tightening up the rod R, the rollers *s s* are made to bite or bear, for the purpose of increasing the friction of the motor-wheels on the rails B B, to prevent slip, or, in case of the failure of the current when descending an incline, to produce increased friction on the track, and so assist the ordinary brakes applied to the car-wheels.

The rail or bar S may also be made to serve as a conductor of the electric current to the motor through the clamp-rod and rollers connected then with the car, and which becomes also a current-carrier, said rail carried by the braces *g g* within the duct T being suitably insulated—as, for instance, at *h* and *i i*—for utilizing it as a conductor. If desired, however, the current may be otherwise transmitted than through the rail S, which may be used exclusively as a grip-bar, as hereinbefore described.

I do not abandon or dedicate to the public any patentable feature set forth herein and not hereinafter claimed, but reserve the right to claim the same either in a reissue of any patent that may be granted upon this application or on any other applications for Letters Patent I may make.

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

The combination, with an electric-motor drive-car having a hole in its bottom, of a top-threaded rod, R, carrying a nut at the upper end and rollers *r s s* at the lower end, and the longitudinally-slotted tube T, carrying within it the fixed rail S, as and for the purpose described.

JOHN CARLOS HENDERSON.

Witnesses:

DYSON DEARBORN WASS,

EDGAR TATE.