

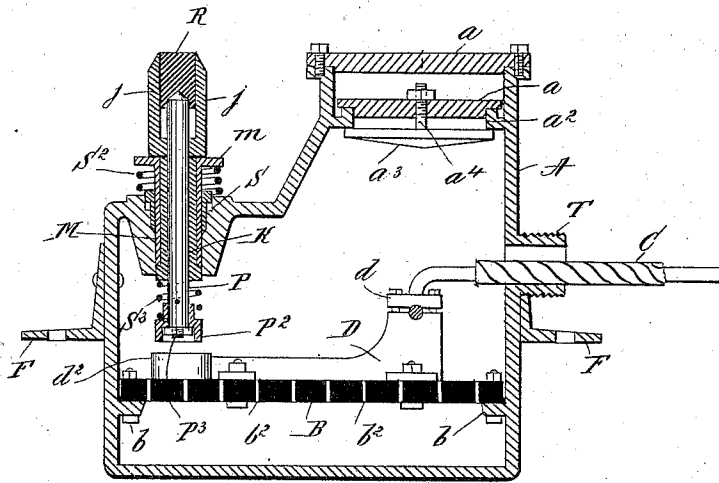
(No Model.)

W. GRUNOW, Jr.

CONTACT BOX FOR DEPRESSIBLE CONDUCTOR RAILS.

No. 576,268.

Patented Feb. 2, 1897.



WITNESSES

John Buckler,
Edgar

INVENTOR

William Grunow, Jr.,
BY
Edgar Bates & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM GRUNOW, JR., OF BRIDGEPORT, CONNECTICUT, ASSIGNOR OF ONE-HALF TO ZALMON GOODSSELL, OF SAME PLACE.

CONTACT-BOX FOR DEPRESSIBLE CONDUCTOR-RAILS.

SPECIFICATION forming part of Letters Patent No. 576,268, dated February 2, 1897.

Application filed May 8, 1896. Serial No. 590,787. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GRUNOW, JR., a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Contact-Boxes for Depressible Conductor-Rails, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to that class of electrical railways which employ depressible rails as conductors and in connection with which the trolley wheel or wheels, which are attached to or connected with the car, operate; and the object of the invention is to provide an improved contact-box for the depressible rail or rails.

My invention is particularly applicable to electrical railways and trolley-cars in which depressible rails are employed as conductors, said rails being placed in the center of or between the rails of the track—such, for instance, as are referred to or described in applications for Letters Patent of the United States filed by me August 27, 1895, Serial No. 560,662, and October 28, 1895, Serial No. 567,139.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, said drawing being a transverse vertical section of my improved contact-box.

In the practice of my invention I provide a box A, which is cast in the required form or in separate parts, which are securely connected or bolted together in any desired manner, and if cast in separate parts which are afterward bolted together the connections should be such as to render the box water-tight.

One side of the box A is higher than the other and is provided with a cap or cover consisting of one or more lids or plates a , which are secured in position in any desired manner and one of which is placed over the other, and, as shown in the drawing, the lower lid or plate a is placed upon an annular shoulder or projection a^2 , and is secured thereto by a cross-head or disk a^3 , which is provided centrally with a bolt a^4 , which

passes through the lid or plate with which it is connected, and these connections should be such as to prevent the passage of moisture into the box or casing.

The box A is provided with outwardly-directed flanges or plates F, whereby it can be secured to the ties of the track or to a specially-built frame, or any suitable support; and it is also provided with a tubular projection T at one side thereof, which may be screw-threaded in order to provide means for attaching pipes thereto, and through which passes a conducting cable or cables C, and any desired number of these tubular projections T may be employed.

Within the box A and near the bottom thereof is a partition-plate or transverse block B, consisting of any preferred insulating material and which is supported on and is bolted to inwardly-directed flanges b , and this insulating block or plate B is perforated, as shown at b^3 , in order that any moisture or water within the upper portion of the box or casing will pass through into the space below said plate or block, thus preventing the accumulation of water or moisture on the upper surface of the insulating plate or block B, as will be readily understood, and any water that may accumulate in the compartment below the plate or block may be removed by means of a pipe or hose from above, to which a hand-pump or other device may be attached.

To the upper surface of the block or plate B is attached a metal contact-bar D, with one end of which the cable C is connected by a clamp or plate d , and the other end of the contact-bar D is preferably provided with a circular head d^2 , which is planed off or made smooth on its upper surface, so as to insure a perfect metallic contact with the lower end of the spring operated and insulated plunger or shaft P when the same is forced downwardly in the operation of the device, as hereinafter described. This shaft P is surrounded by an insulating-bushing K, which is incased in a metallic sleeve M, and said sleeve, the bushing therein, and the shaft P are free to slide vertically through a stuffing-box S, by means of which a water-tight connection is made.

The upper end of the shaft P enters the de-

pressible rail R, which is incased on three of its sides and at its ends by insulating material J, made, preferably, of oak-strips saturated in boiling oil and heavily coated with tar or asphaltum, and between said depressible rail and the contact-box is a spring S², which is placed around the sleeve M, and which bears upon an annular rim or flange *m* at the upper end thereof and which is designed to keep the rail R in the raised position when it is not depressed by the trolley-wheels, which are not shown.

To the lower end of the shaft P is applied a sliding sleeve P², which is prevented from dropping off said shaft by a nut P³, and between the sleeve P² and the shoulder formed by the lower end of the insulating-bushing K is placed a spiral spring S³, which is designed to press the sleeve P² downwardly to the extreme end of the shaft P and upon the nut P³.

The operation will be readily understood from the foregoing description, when taken in connection with the accompanying drawing, and the following statement thereof. The rail R is depressed by the trolley or contact wheel or wheels when passing over it, thus forcing the shaft P downwardly until the sleeve P² rests on the end *d*² of the contact-bar D, and the current will thus pass through the cable C, through said bar D, and through the shaft P to the rail R. The object of the sleeve P² being spring-cushioned is to insure a steady contact after the shaft P is pressed downwardly; thus allowing for any vertical oscillation of the rail which may occur even though it is operated on by the trolley wheel or wheels. This device is simple in construction and operation, and it is evident that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages, and I reserve the right to make all such alterations therein and modifications thereof as fairly come within the scope of the invention.

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

1. The herein-described contact-box, which is adapted for use in connection with electrical railways, provided with a depressible contact-rail, said box or casing being provided with a suitable cap or cover, and near the bottom thereof with a transverse non-conducting partition plate or bar, provided with perforations and on which is mounted a conducting-bar with one end of which a cable or conductor is connected, said box being also provided with a vertically-movable insulated shaft which is adapted to make contact with the opposite end of said bar, and which is adapted to be depressed by the depressible rail, substantially as shown and described.

2. The herein-described contact-box, which is adapted for use in connection with electrical railways, provided with a depressible contact-rail, said box or casing, being provided

with a suitable cap or cover, and near the bottom thereof, with a transverse non-conducting partition plate or bar, provided with perforations and on which is mounted a conducting-bar, with one end of which a cable or conductor is connected, said box being also provided with a vertically-movable insulated shaft which is adapted to make contact with the opposite end of said bar, and forced downwardly against the action of the spring thereon and which is adapted to be depressed by the depressible rail, and said shaft being mounted in a vertically-movable sleeve from which it is insulated, and adapted to move therewith, and said sleeve being spring-supported, substantially as shown and described.

3. The herein-described contact-box, which is adapted for use in connection with electrical railways, provided with a depressible contact-rail, said box or casing being provided with a suitable cap or cover, and near the bottom thereof, with a transverse non-conducting partition plate or bar, on which is mounted a conducting-bar, with one end of which a cable or conductor is connected, said box or casing being also provided with a vertically-movable insulated shaft which is adapted to make contact with the opposite end of said bar, and which is adapted to be depressed by the depressible rail, and said shaft being mounted in a vertically-movable sleeve from which it is insulated, and adapted to move therewith, and said sleeve being spring-supported, and said shaft being provided at its lower end, with a spring-cushioned sleeve which is adapted to slide thereon, substantially as shown and described.

4. The herein-described contact-box, which is adapted for use in connection with electrical railways, provided with a depressible contact-rail, said box or casing being provided with a suitable cap or cover, and near the bottom thereof, with a transverse non-conducting partition plate or bar, on which is mounted a conducting-bar, with one end of which a cable or conductor is connected, said box or casing being also provided with a vertically-movable insulated shaft which is adapted to make contact with the opposite end of said bar, and which is adapted to be depressed by the depressible rail, and said shaft being mounted in a vertically-movable sleeve from which it is insulated, and adapted to move therewith, and said sleeve being spring-supported, and said shaft being provided on its lower end with a spring-cushioned sleeve which is adapted to slide thereon, and said partition plate or bar being perforated, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 2d day of May, 1896.

WILLIAM GRUNOW, JR.

Witnesses:

H. F. NORCROSS,
CHARLES KELSEY.