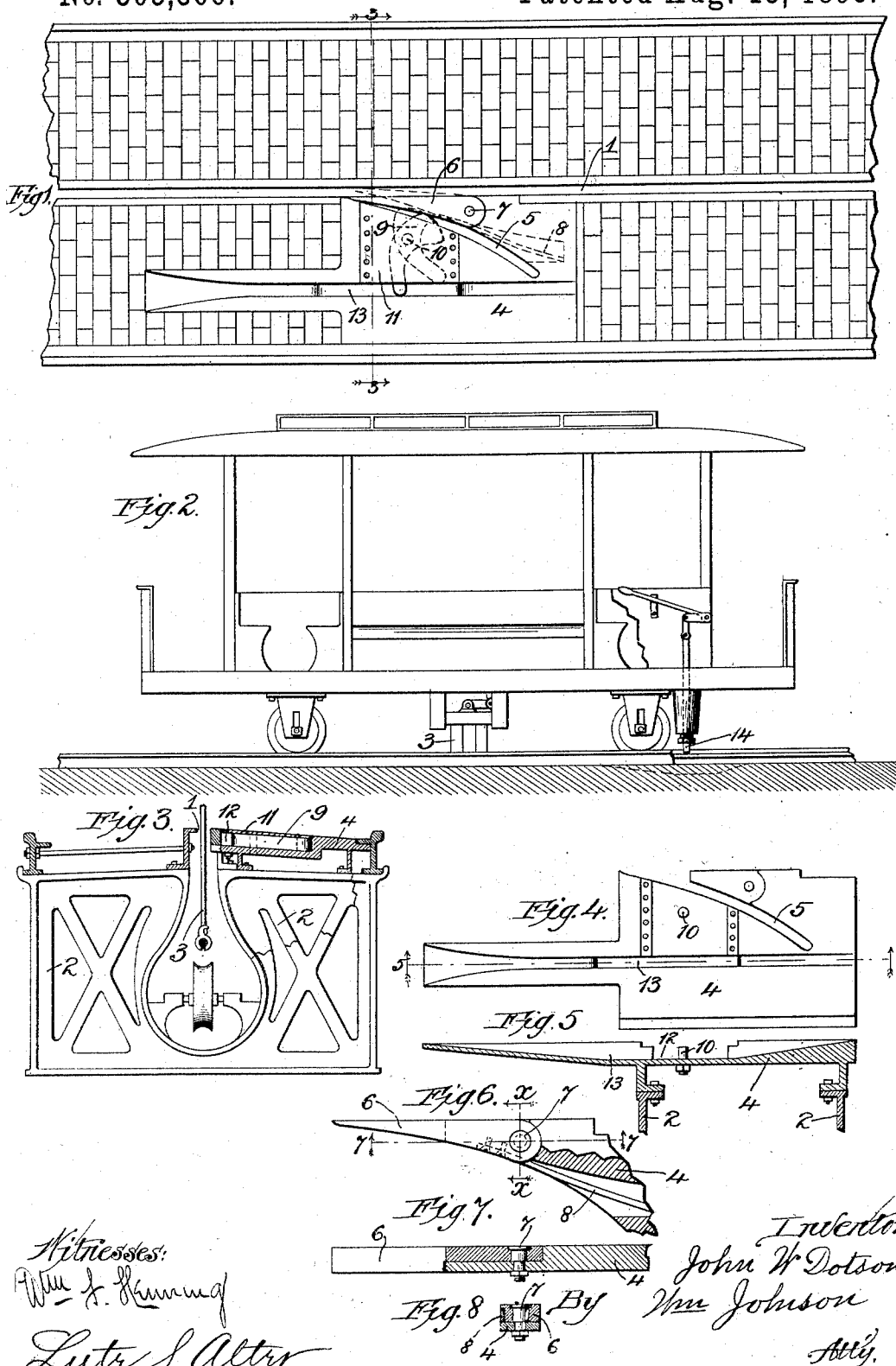


(No Model.)

J. W. DOTSON.
CABLE RAILROAD.

No. 503,366.

Patented Aug. 15, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN W. DOTSON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
RICHARD J. CLARK, OF SAME PLACE.

CABLE RAILROAD.

SPECIFICATION forming part of Letters Patent No. 503,366, dated August 15, 1893.

Application filed April 5, 1893. Serial No. 469,085. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. DOTSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful improvements in Cable-Car Railroads; 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.

My invention relates to improvements in cable railroads for street cars.

The object of the invention is to provide means by which to lessen the danger and liability of injury to persons, and of damage to property now incident to the passage of cable cars through the overcrowded streets of cities and towns.

With this object in view, the invention consists in the combination with the grip slot of the roadway, of short slots or openings connecting therewith, and which are provided with switch bars which are adapted to be moved across the main slot by means attached to the cars, and to switch or turn the grip from the main slot, or conduit into the short slot and side conduit, for the purpose of breaking the grip, and thus to make it possible to stop the cars when the cable or rope is stranded, and the strand is wound about the grip so that it cannot be disconnected therefrom by the usual means, the invention being fully described in the following specifications and claims and illustrated in the accompanying drawings in which—

Figure 1 is a plan view of the roadway and of the grip switch arranged therein, the position being its normal or closed one, and in which the open position is shown by the dotted lines. Fig. 2 is a side elevation of a grip car with a bar attached thereto by means of which the switch is adapted to be opened. Fig. 3 is a transverse section of a cable roadway and of the switch taken on the line 3. 3. of Fig. 1. Fig. 4 is a detached plan view of the switch supporting casting. Fig. 5 is a longitudinal section taken on the line 5. 5. of Fig. 4. Fig. 6 is a detached top view of the switch bar and a portion of the supporting casting

showing the arrangement of the switch bar 50 spring. Fig. 7 is a section taken on the line 7. 7. of Fig. 6, and Fig. 8 is a section on the line X. X. of Fig. 6.

Referring to the drawings 1, designates the grip slot, 2 the roadway and conduit castings, which together with the slot rails and track rails form the roadway, the construction being that in general use for cable roads.

3 is the grip which is also of the ordinary kind.

4 is a cast or metal plate adapted to support the switch bar and to be solidly secured to the conduit castings or road way. Said plate is provided with a short grip slot or opening 5, one end of which connects with the main grip slot and extends therefrom into the roadway at a suitable angle or curve for switching the grip from the main slot into said short slot or opening, and which terminates in the roadway.

6 is a switch bar, one end of which is pivotally attached to the said metal plate by means of the stud bolt 7, and the other end of which extends out and tapers therefrom to a point. One side of said pointed switch bar when in its normal position is adapted to form the side of the main grip slot—the slot rail being cut away for the purpose—and the other side of said switch bar is adapted to form a portion of one side of the switch slot when said bar is turned to a position for switching the grip therein. Said switch bar is held in its normal position across the entrance to the switch slot by the spring 8, one end of which is solidly attached to the said bar, and the other end of which abuts or rests against a shoulder formed upon said metal plate.

9 is a cam-lever, pivoted to turn upon a stud pin 10, solidly inserted in said metal plate, a depression being formed therein, which is covered over with a boiler plate covering 11 screwed thereto, and which forms a chamber or opening 12 in said metal plate, adapted for the insertion and movement, or vibration of said cam-lever. The cam-end of said lever rests against one side of the switch bar, and the other end of said cam-lever, when the switch is closed, stands across the longitudinal chan-

nel or groove 13, formed in said metal plate, as shown by dotted lines Fig. 1. Said cam lever is adapted to be moved by means of a bar 14, attached to the grip car, and which is operated by the gripman. Said bar is dropped into said longitudinal channel or groove, and strikes against the outer end of said cam-lever, forcing the cam end against the switch bar, and thereby moving the point of said bar across the main grip slot, shown also by dotted lines in Fig. 1, the outer end of the cam-lever being turned around by the operation sufficient to allow the passage of the bar through said longitudinal channel, and as said bar is located upon the car some distance in front of the grip, the operation is performed before the grip reaches the switch slot, and as the pitch of the cam is so small that it cannot move or turn back of itself, the switch bar will thus be held firmly across the main grip slot until the grip enters the switch slot and reverses the movement of the cam-lever by pushing it back to its first position, and the grip is then broken in said switch slot, by the running or pulling strain upon the cable attached thereto, and the momentum of the cars, and when this is accomplished, the cars may be stopped by the application of the brakes, and in the usual manner.

The operation as described will be clearly understood from an inspection of the drawings.

It will be observed, that the longitudinal groove or channel in the supporting metal switch plate, and which is adapted to guide the end of the operating bar, attached to the car, so that it will strike against the end of a cam-lever, is widened at the front to insure the entrance of said bar thereto, and gets deeper as it approaches the lever, so that the operating bar is dropped gradually down an inclined plane, and that after it has passed the cam-lever, it is again lifted up an inclined plane until it is brought to the top of the roadway, and also that the switch slot is curved outward, so that the grip bars may be broken laterally across and in the weakest direction.

The invention is of very great importance in the practical operation of a cable road, as the stranding of a cable is of very frequent occurrence in our large cities, and a broken strand invariably wraps itself around, or about the grip, so that the cars cannot be detached therefrom except by stopping the cable, and before this can be done very great and serious injury to persons, and damage to property may take place, as is frequently the case, whereas, by a series of properly located switch slots, as herein provided for, the danger from accidents of this kind may be largely averted if not wholly removed.

In the lever arrangement attached to the car for the purpose of moving the operating bar, I have shown one practical mode of carrying out my invention, but I claim the right

to use such modification thereof as may be found most advantageous, and there are modifications in the details, and arrangements of other parts which will readily suggest themselves, such as securing or locking the switch bar in its normal or closed position by other means than a spring, and in moving the switch bar by hand from the ground, and by other devices than that of a cam-lever, but which do not depart from the spirit of my invention, and I do not therefore desire to limit myself to the exact construction, and arrangement of parts as herein shown and described.

Having fully described my invention, I claim—

1. In a cable roadway, the combination therewith of the metal plate or casting 4, solidly attached to said roadway, said plate provided with a slot or opening 5, and said slot or opening communicating and connecting with the grip slot 1 of said cable roadway, the switch bar 6, movably attached to said metal plate, and means adapted to move said switch bar upon said plate and across said grip slot, substantially as and for the purpose specified.

2. The combination in a cable roadway of the metal plate 4, provided with the switch slot or opening 5, said switch slot communicating with the grip slot 1, in said roadway, the switch bar 6, pivotally attached to said metal plate and adapted to be moved thereon and across said grip slot, and means adapted to hold said switch bar in its normal or closed position, and said switch bar adapted to form a side portion of said grip slot, substantially as and for the purpose specified.

3. In a cable roadway the combination of the metal plate 4, solidly supported therein, said metal plate provided with the switch slot 5, and also provided with the chamber or opening 12 and channel 13, said switch slot communicating with the grip slot 1 in said roadway, and said channel adapted for the passage of the bar 14 attached to a cable grip car on said roadway, said bar vertically adjustable on said car, the cam lever 9, pivotally attached to said metal plate in said chamber and adapted to be moved therein by said bar 14, and the switch bar 6, movably attached to said metal plate and adapted to be moved thereon by means of said cam lever, substantially as and for the purpose specified.

4. In a cable roadway or railroad the combination comprising the grip slot 1, adapted for the passage of a cable grip 3, the metal plate 4, solidly attached to said roadway or conduit castings 2 in said roadway, and provided with a switch slot or opening 5, communicating or connecting with said grip slot, and said metal plate also provided with the chamber or opening 12 and the longitudinal channel 13, the switch bar 6, pivotally attached to said metal plate by means of the stud bolt 7, and provided with the spring bar 8, adapted to hold said switch bar in its nor-

mal or closed position and to return it to said position, the cam lever 9, pivotally attached to said metal plate by the stud bolt 10, and adapted to be turned in a direction to force
5 said switch bar across said grip slot, by the bar 14 attached to the front end of a grip car, and to be turned in a reverse direction by the cable grip of said car, when said grip is

switched into the said switch slot, substantially as and for the purpose specified. 10

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

JOHN W. DOTSON.

Witnesses:

CYRUS A. HULL,

J. CHARLES MOORE.