3 Sheets—Sheet 1.

J. STEPHENSON.

Tram Car.

No. 235,311. Patented Dec. 7, 1880.

Fig. 1.

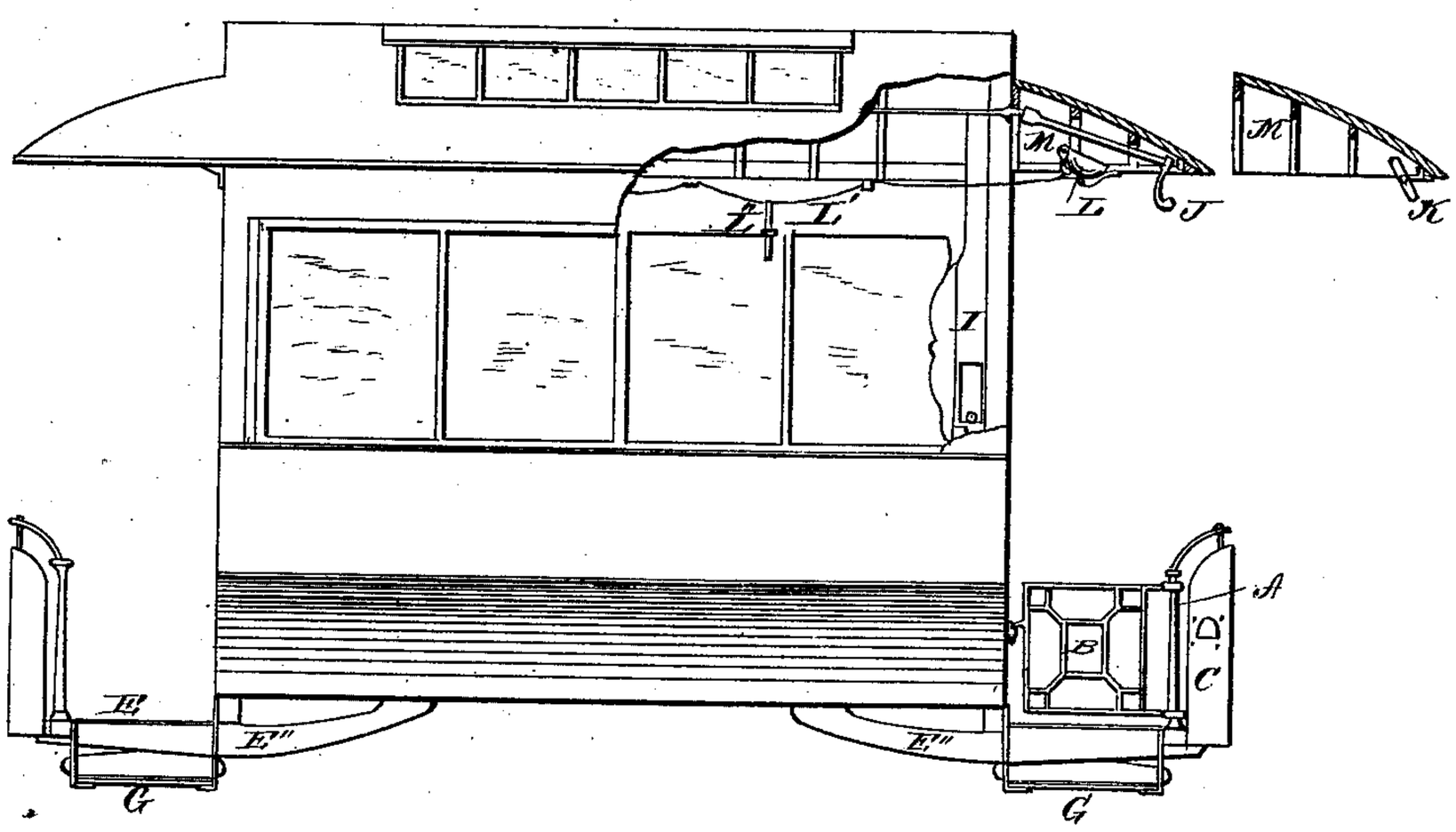

Fig. 2.

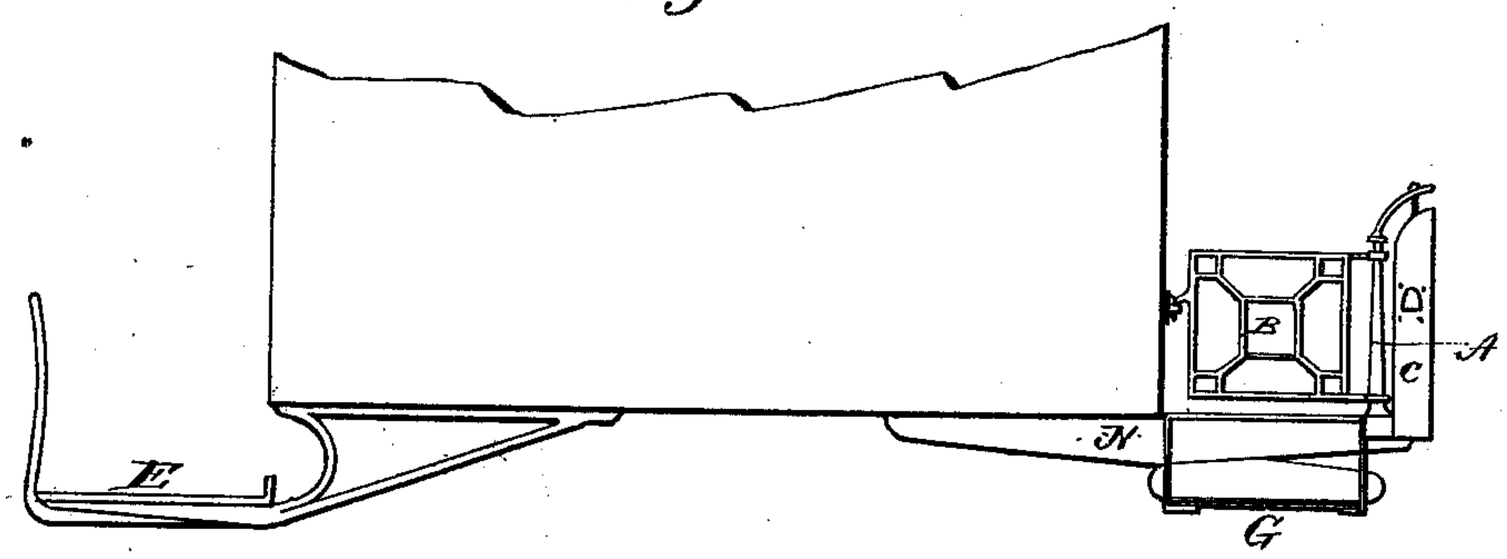

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Fig. 3.

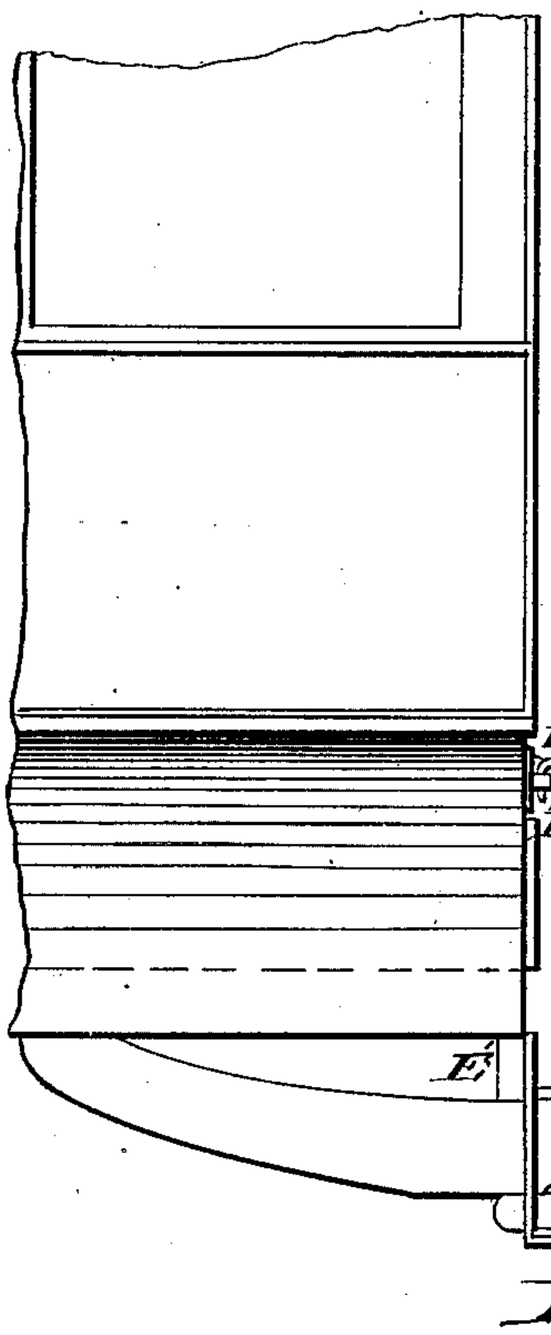


Fig. 6.

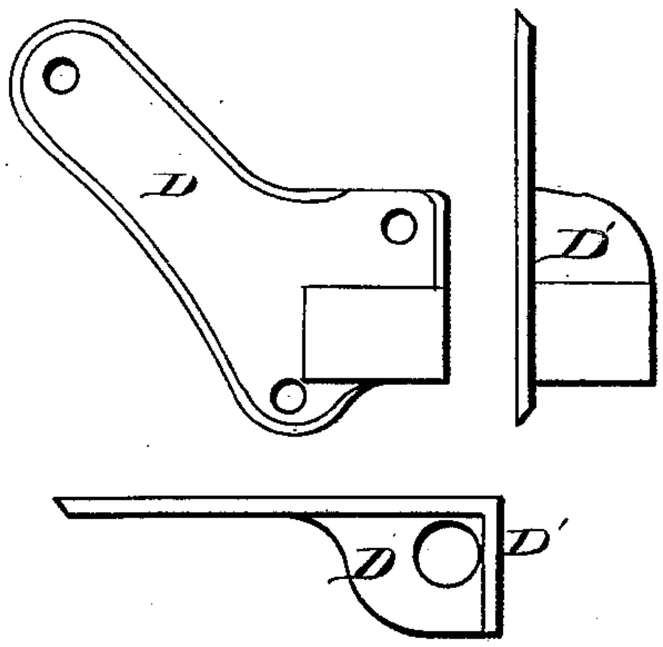
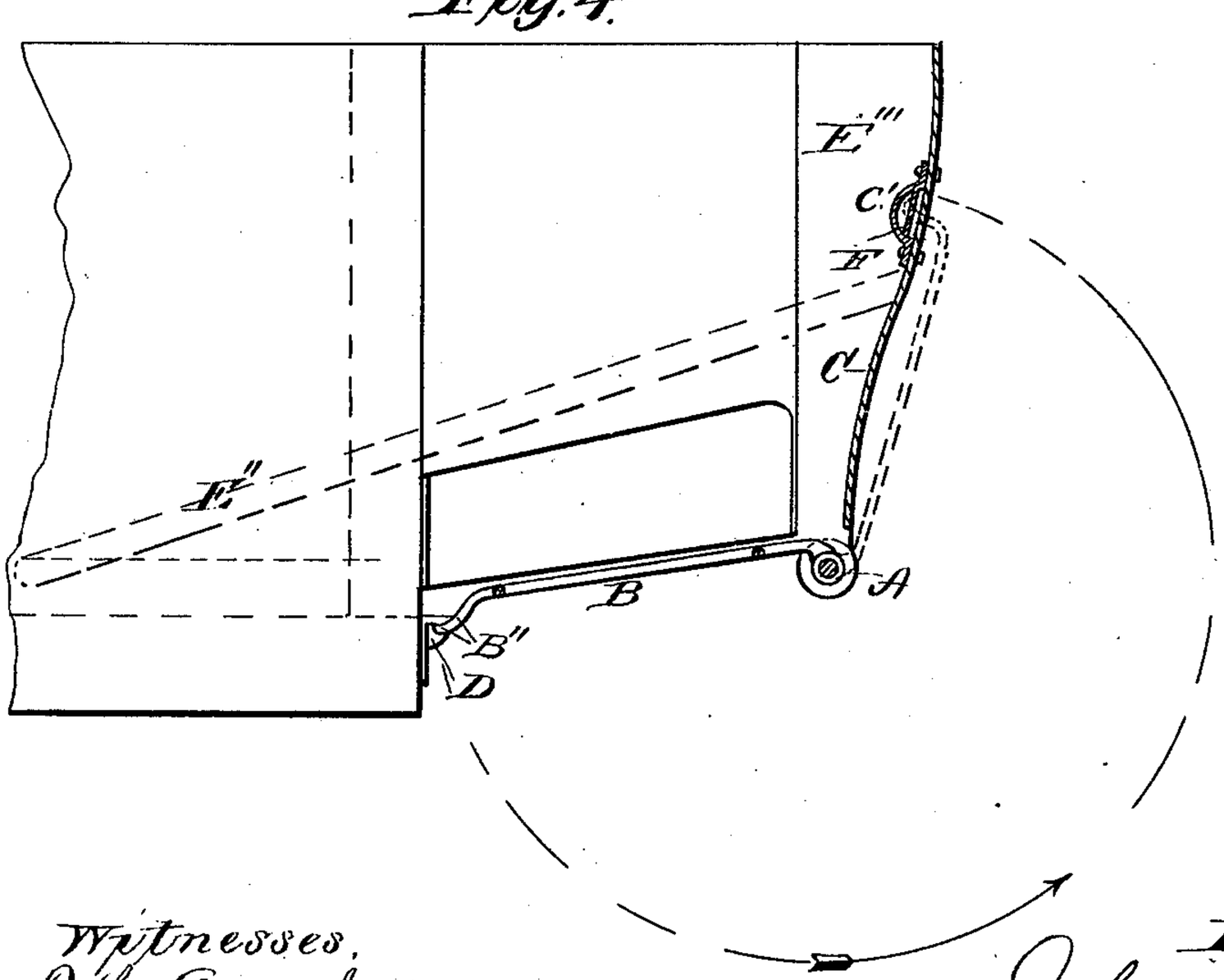


Fig. 4.



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3 Sheets—Sheet 3.

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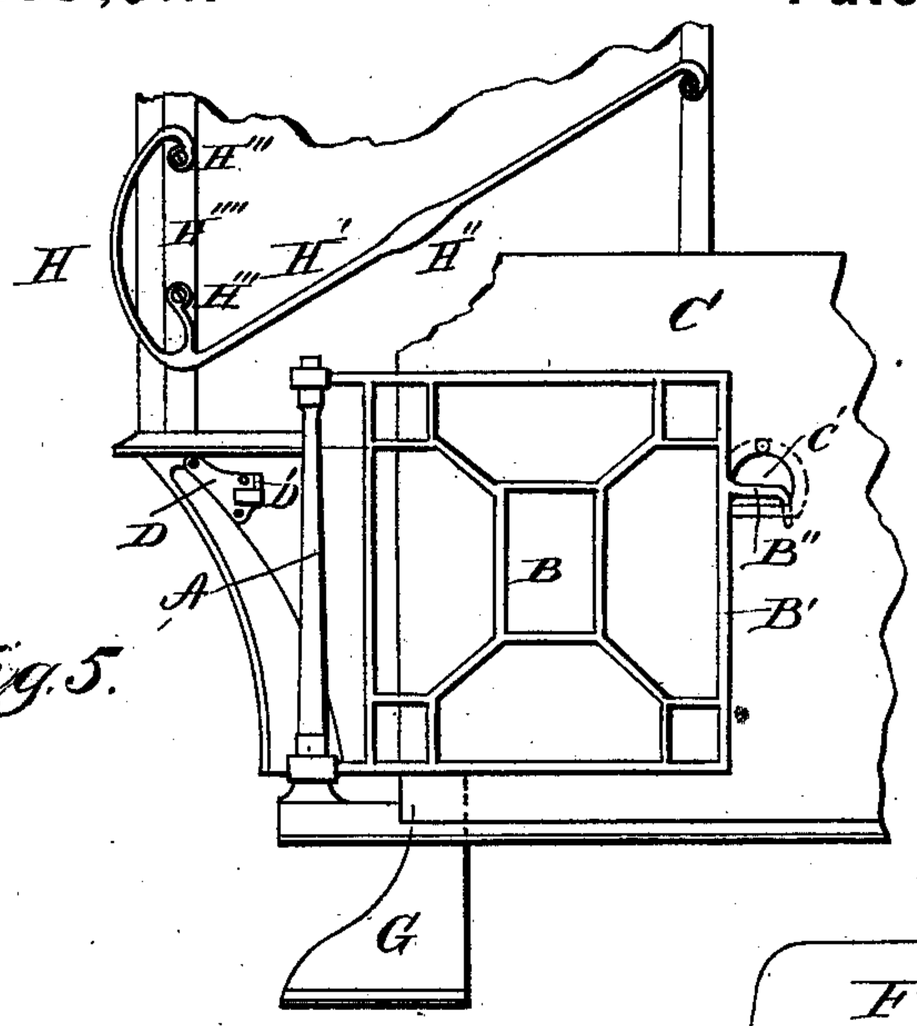
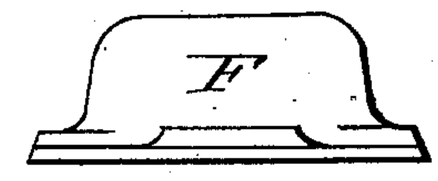


Fig. 5.



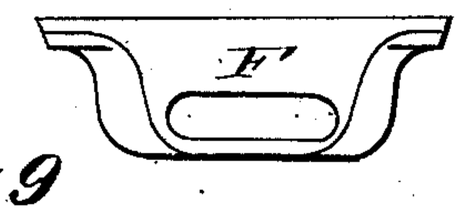


Fig. 9

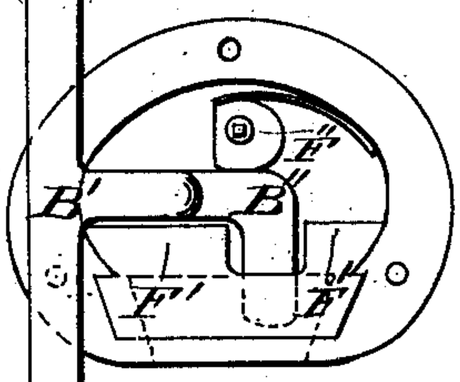
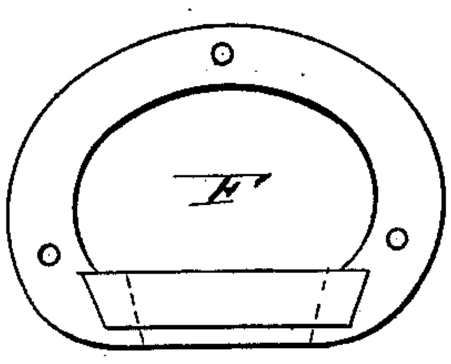


Fig. 7.



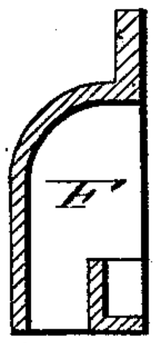
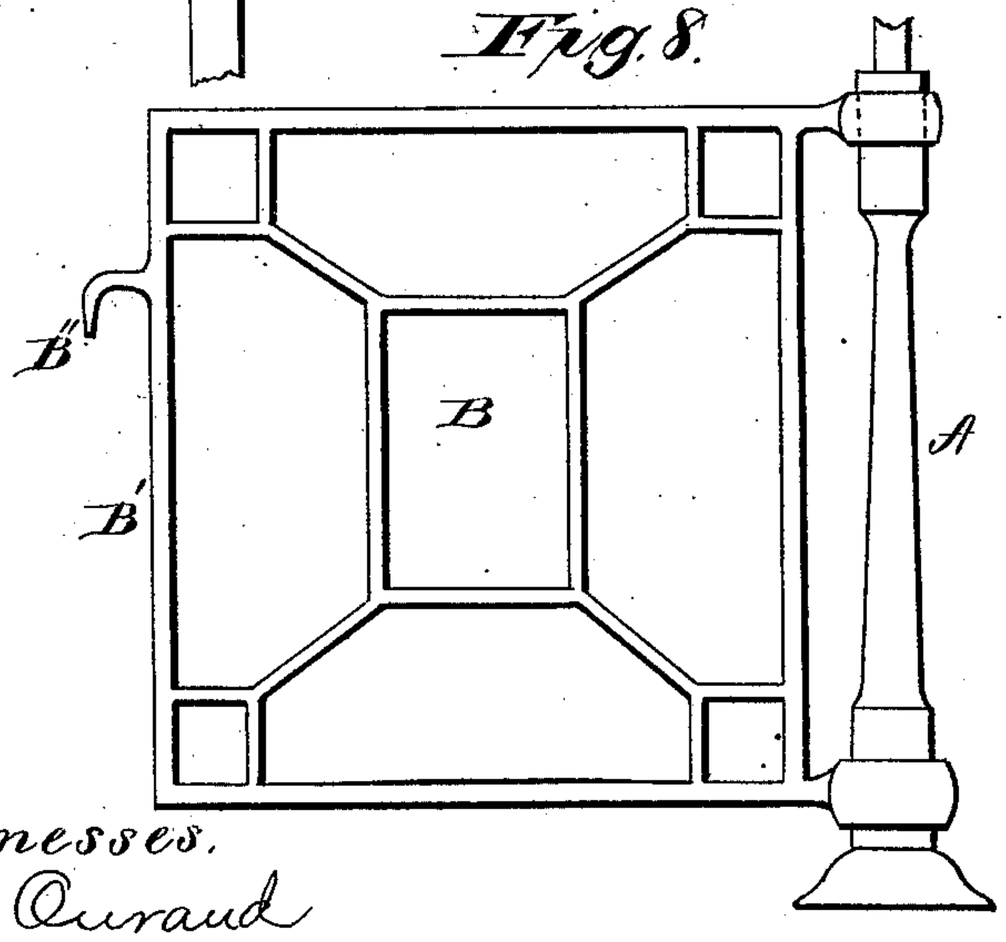


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, OF NEW YORK, N. Y.

TRAM-CAR.

SPECIFICATION forming part of Letters Patent No. 235,311, dated December 7, 1880.

Application filed November 8, 1879.

To all whom it may concern:

Be it known that I, JOHN STEPHENSON, of the city, county, and State of New York, have invented certain new and useful Improvements in Tram-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a side elevation, partly in section, of a tram-car with my improvements applied. Fig. 2 is a similar view, partly broken away, showing the improved gate at the forward end, and the depressed step-platform at the rear end. Fig. 3 is an enlarged side elevation of one end of the car, showing the improved gate for closing the platform. Fig. 4 is a partial plan view of the same. Fig. 5 is a partial front elevation with the gate open, showing, also, the hand and grab rail, hereinafter described. Fig. 6 shows an enlarged plan view and front and side elevation of the eye or socket plate for locking the gate in its closed position. Fig. 7 shows similar views, and also a sectional view, of the pocket or receptacle for the gate hook or latch for holding the gate open detached from the dash; Fig. 8, a side elevation of the corner standard or pillar of the dash forming the gate-pivot, showing the manner of hanging the gate thereon, and Fig. 9 shows the receptacle in the dash for the gate-hook and the means for locking and releasing the hook.

Similar letters of reference denote corresponding parts wherever used.

The invention consists in employing corner-pillars on the dash of a tram-car as pivots upon which to hang gates having a capability of movement to and from the corner-posts of the car for closing or opening the platform, and in novel means for holding the gate in either position.

It further consists in a novel construction and arrangement of hand-rails for giving increased security in entering and leaving the car, and in certain details of construction and arrangement hereinafter described.

The system of conductorless cars for tramways is rapidly spreading, and the use of "double-ender" cars for such purpose has developed a new class of wants. Open platforms to such cars are objectionable, not only because most of the serious accidents occur to persons falling from the front platform, but the driver of such car should be secluded, that his undivided attention may be given to the multifarious requirements of his position, consequently some ready method of closing the platform which for the time being is in front is necessary.

Gates in various forms have been used, some made portable to be carried from one end of the car to the other. This requires labor incompatible with the duties of the driver of such car. Other gates have been hinged at the corner of the body, to fold, when open, against the end of the car or the inner side of the dash. This is found objectionable, as placing the gate in a position obstructing the ingress and egress of passengers.

My invention avoids these difficulties, and for this purpose I modify the corner standards or pillars A of the dash C, adapting such pillars to act as pivots, on which I hang the gates B, and around which said gates swing.

The lock-style B′ of the gate is provided with a hook, B″, of proper form to enter an eye, D, at the corner of the body, the eye having at its farther side a lug or stop, D′, to prevent the gate-hook from passing beyond the eye. This connection secures the gate in position to close the platform, and when the platform is to be left open the gate is swung around against the front of the dash, and the hook referred to enters a pocket or receptacle, F, in the dash, and the gate is thus held open.

The receptacle for the gate-hook is formed by making an opening in the dash-apron, through which the hook is projected, and the hook is covered by a cap fastened to the inner side of the apron. To prevent noise or wear a piece of india-rubber, F′, is secured within the receptacle in such manner that the hook and the weight of the gate rest upon it. This method of fastening the gate open, while regarded as the best, is not the only way, as an eye secured to the front of the dash, or other suitable device for holding the gate-hook, may be employed; but it is desirable to avoid having projections on the dash-apron, which might come in contact with and injure the horse.

To prevent mischievous persons from unfastening the gate and allowing it to swing around loose, the receptacle F for the gate-hook may be provided with an eccentric, F″, bolt, or other suitable device for locking the gate-hook in place, said device being adapted to be operated by the driver for releasing the hook, when desired.

The absence of a conductor to assist infirm persons, ladies, and children makes it important that the platform of the car be within convenient distance of the ground, so that the intervening step may be easy. I accomplish this by blocking down the bearers E″ by means of a transverse strip, E′, interposed between said bearers and the end sill of the car, said strip filling the space between the end sill and the platform-flooring E, and preventing injury to the feet of the passengers. Increased strength with diminished weight is given to the construction by spreading the bearers under the car in such manner that the ends under the car-floor shall be wider apart than the ends at the nose-piece or outer verge of the platform. The ends under the car-body are, by preference, bolted directly to the side sills of the car, but there is advantage in any degree of approximation thereto.

When the platform is constructed and arranged as described the distance of the platform from the ground is so diminished as to permit the employment of a single intervening step, making but two intervals, short and easily accomplished, while at the same time keeping the platform up so near the level of the car-floor as to obviate danger to persons leaving the car without observing that the platform is depressed.

To assist persons ascending to or leaving the platform, I apply a grab-handle at the corner of the car, having a vertical member, H, of such form as to be easily grabbed, and from the lower end of this grab-handle I project another member, H′, ascending at a suitable angle to the door-standing pillar near the belt-rail. This forms a hand-rail on which the hand of the passenger can rest in ascending and descending. Upon this hand-rail, about midway between its ends, is formed a collar, bulb, or enlargement, H″, which affords a resting-place for the hand, beneficial in ascending and descending. The grab-handle thus made is fastened to the car-body through two feet, H‴ H‴, located on the panel-plate over the corner pillar, H⁗, into or through which the retaining screws or bolts are passed, and similar fastenings serve to secure the inner end of the handle to the door-standing pillar or belt-rail, a firm support for the handle being thus obtained at both ends.

The car is provided with mechanism enabling the driver to open and close the rear door, said mechanism, in the present instance, being arranged in the top of the car.

J represents a lever, arranged in the forward part of the hood or bonnet M, and connected by a rock-shaft and crank-arm, or other suitable means, with the door at the opposite end of the car, for operating it.

L is a bell (shown arranged in the hood) operated through a strap, L′ passing lengthwise at the side of the car, and a series of bell-pulls, L″, arranged upon the frame posts or uprights of the car-body, as shown, and within convenient reach of the passengers in their seats.

K represents a mirror, arranged under the hood or bonnet in advance of the driver, made adjustable, that it may be set at a suitable angle to enable the driver to observe the movements of the passengers without necessitating his turning around for that purpose.

As the features of arrangement of parts last above referred to are made the subject-matter of another division of this application, they need not be described in detail here.

I is a box for the reception of fares, said box being of any usual or preferred construction and arrangement.

Where the car is to be drawn always with the same end in advance, it may sometimes be preferred to use at the rear end of the car what I term a "depressed-step platform," such as shown at O, Fig. 2, in lieu of the one above described. In this case the usual side step or steps are dispened with, the platform itself being depressed by means of angular bearers, as shown, in such manner as to divide the distance between the car-floor and the ground. This depressed platform is provided at its rear end with a dash or projecting hand-rail, so arranged that passengers leaving the car step down first upon the platform, and turning thence to one side or the other, step from said platform to the ground at one side of the car, the platform extending laterally to or beyond the tram-way or track. This arrangement serves to insure safety to near-sighted persons and passengers leaving the car in the night-time, and failing to notice that the platform is depressed, this having been found a source of accident where only an ordinary step is used between the car-floor and the ground.

Parts of the car not particularly described may be constructed and arranged in any usual or preferred way.

Having now described my invention, I claim—

1. A tram-car with end platforms, having the dash corner pillars made in proper form and arranged as pivots, on which are hung gates having a capability of motion from the corner of the body to the dash.

2. A tram-car with gates hung on the dash corner pillars, around which the gates rotate.

3. A tram-car with gates hung on the dash corner pillars, around which the gates rotate from the corner of the car-body to the front side of the dash.

4. A tram-car with gates hung on the dash

corner pillars, on and around which the gates rotate, the lock-stile of the gates being provided with hooks lodged in eyes at the corners of the body.

5. A tram-car with gates hung and pivoted on the dash corner pillars, and the hook on the lock-stile lodged in an eye near the corner of the body, the eye being provided with a stop or fence, to prevent the gate from passing through and beyond the eye.

6. A tram-car with gates pivoted on the dash corner pillars, the lock-stile of the gate having a hook for fastening the gate open or shut.

7. A tram-car with gates pivoted on the dash corner pillars, and with a stile-hook fastening the gate shut when in union with an eye at the corner of the body, or fastening the gate open when it is folded against the dash, with the hook passing through an orifice in the dash.

8. A tram-car having gates for closing the platforms, the gates, when open, folding against the dash, and the stile-hook of the gate passing through the dash-apron and fastening the gate, the gate-hook being capped or having a receptacle covering the hook.

9. In a tram-car, the combination of the gate-hook, receptacle, and india-rubber, substantially as described.

10. In a tram-car, the combination of the gate-hook, receptacle, and cam, bolt, or other suitable device forming a lock to prevent improper loosening of the gate.

11. A tram-car provided with an inclined hand-rail, having at some convenient place between its ends a collar, bulb, or enlargement for greater security of the hand-gripe.

In testimony whereof I have hereunto set my hand this 3d day of November, 1879.

JOHN STEPHENSON.

Witnesses:

STUART A. STEPHENSON,
JOHN S. PUGH.