

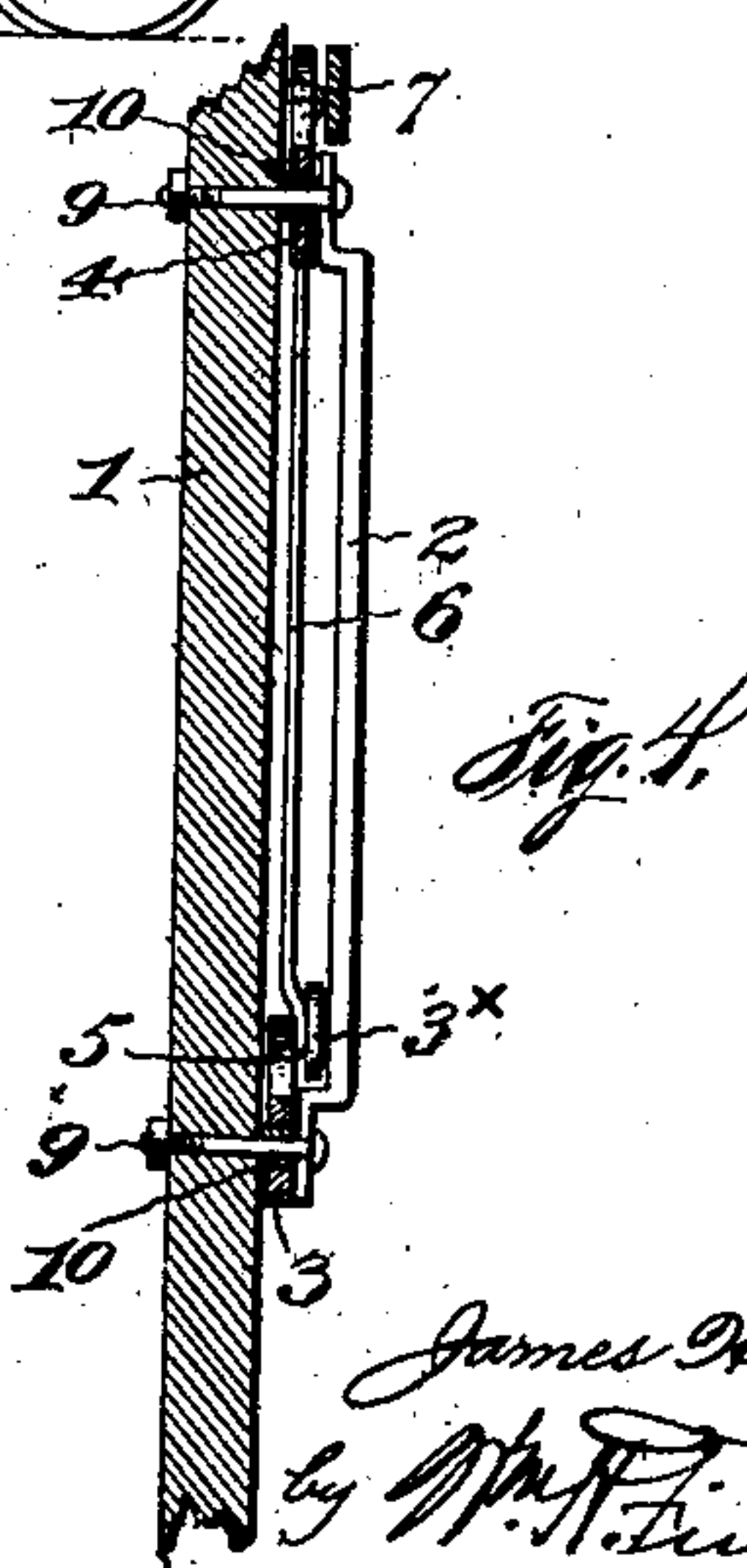
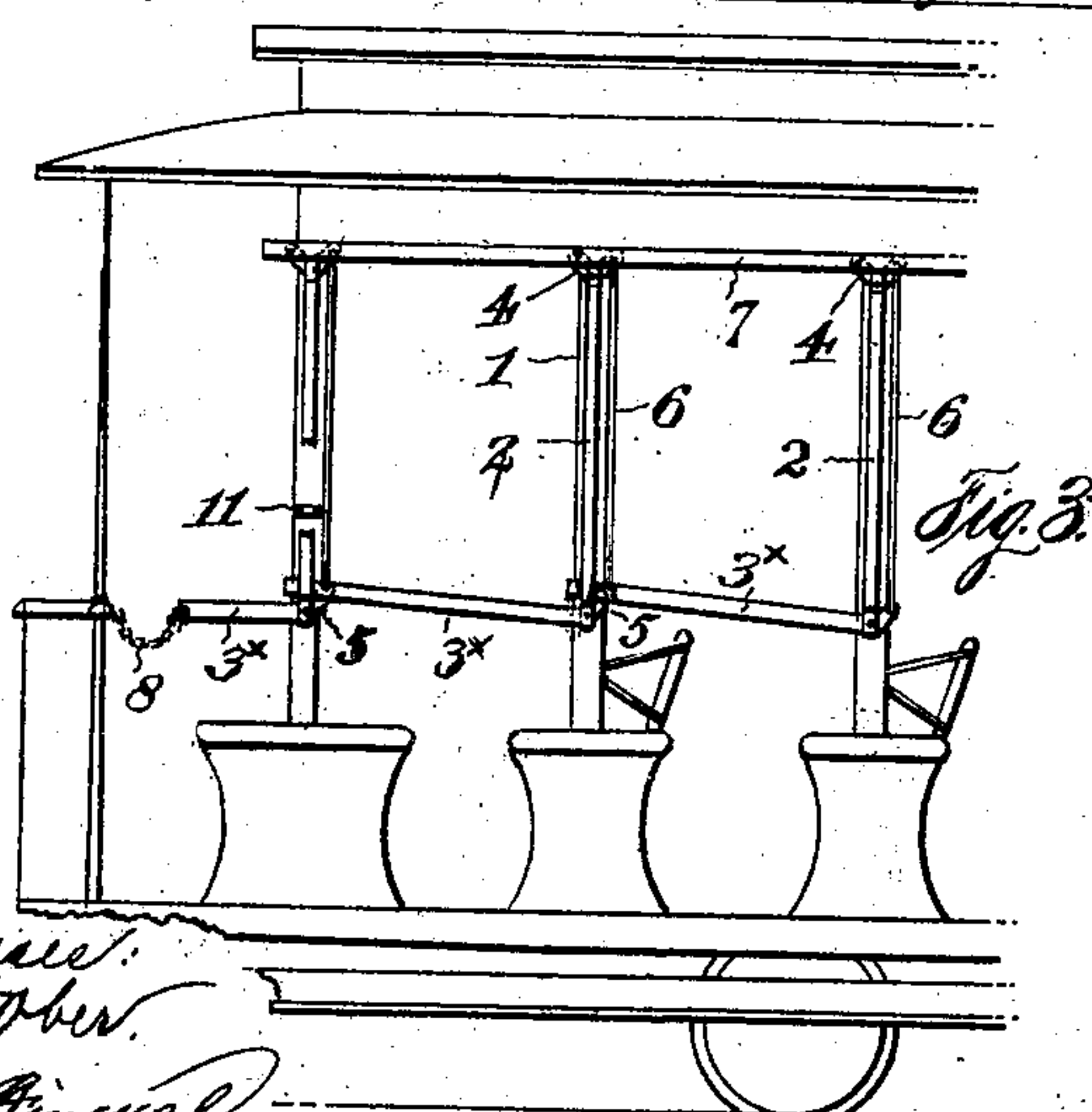
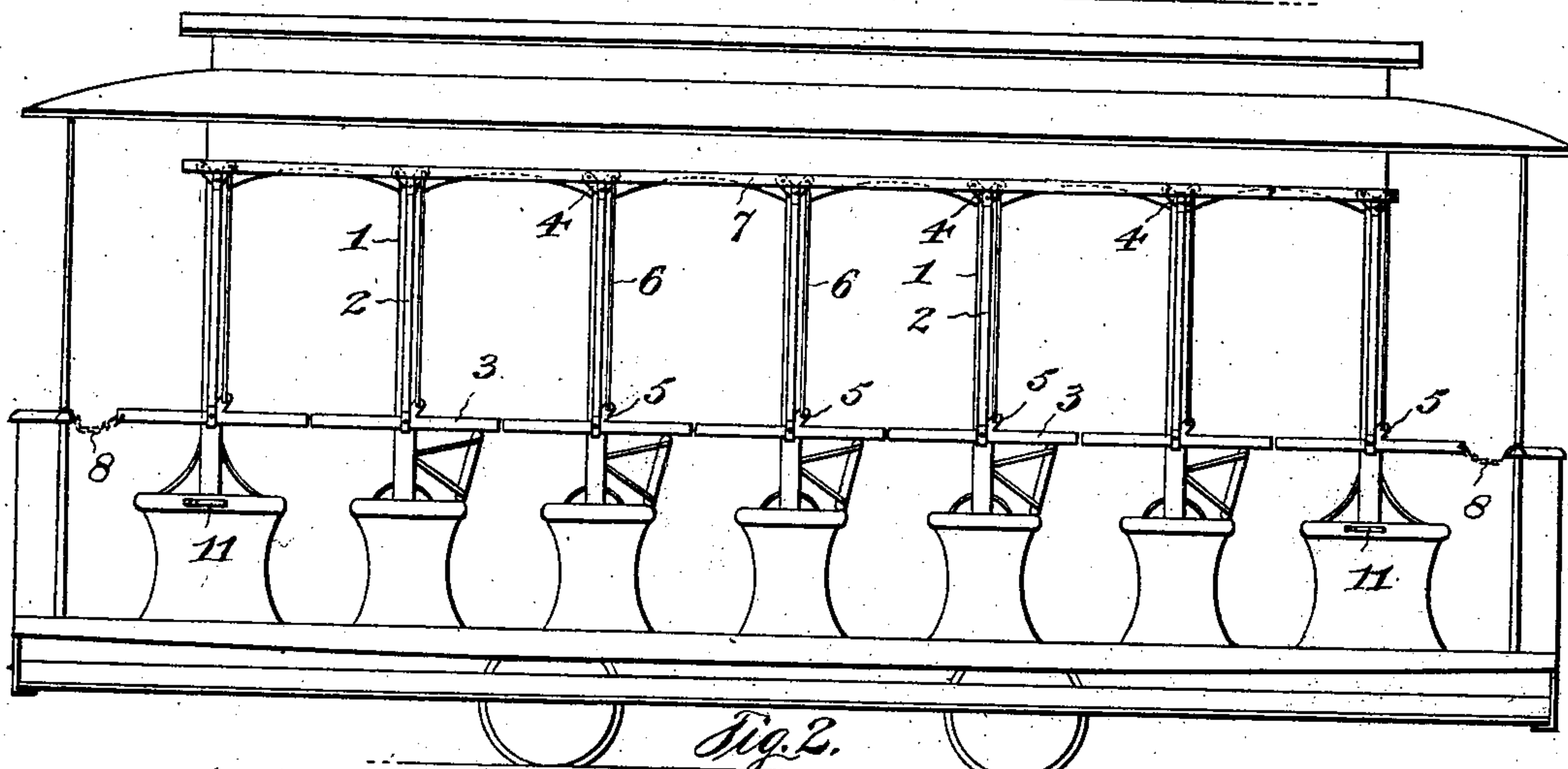
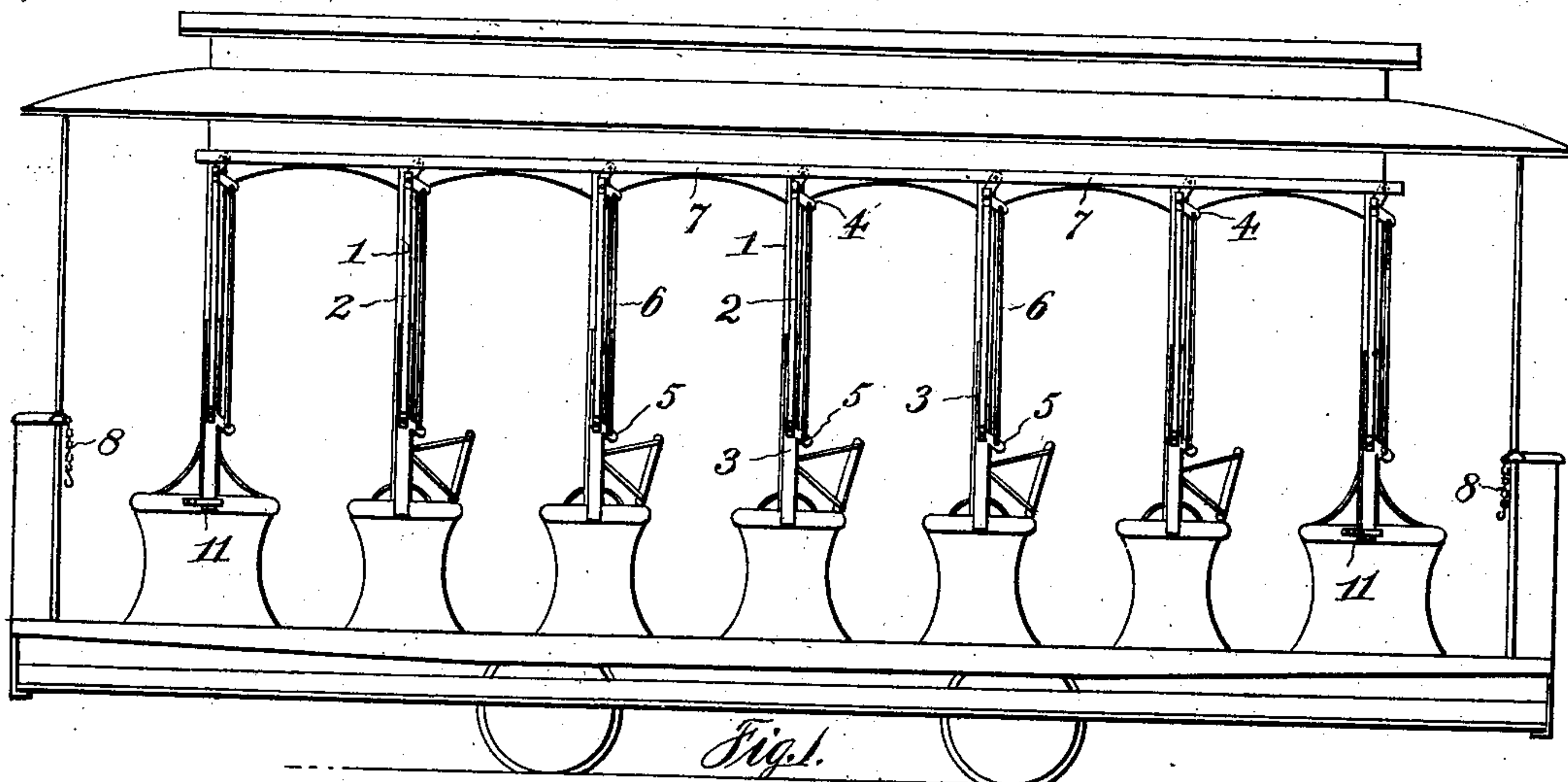
No. 708,209.

Patented Sept. 2, 1902.

J. H. DONNELLY.  
SIDE GUARD FOR CARS.

(Application filed May 15, 1902.)

(No Model.)



Witness:  
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# UNITED STATES PATENT OFFICE.

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## SIDE GUARD FOR CARS.

SPECIFICATION forming part of Letters Patent No. 708,209, dated September 2, 1902.

Application filed May 15, 1902. Serial No. 107,472. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. DONNELLY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Side Guards for Cars, of which the following is a full, clear, and exact description.

This invention relates to side guards for cars, and is especially designed to be used in connection with open or summer street-cars. The object of the invention is to simplify and cheapen the construction of such devices and to provide a side guard which may be readily and economically installed upon cars of usual construction as they are being built, as well as upon cars already in use.

The invention consists in a series of guard-arms, a series of bell-cranks, connections between said guard-arms and bell-cranks, and a reciprocating connection for said bell-cranks whereby all of said bell-cranks and guard-arms are movable simultaneously to open and close the entrances to the seats, all as I will proceed now more particularly to set forth and finally claim.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation of a car equipped with one form of my invention, the guard-arms being in the open position. Fig. 2 is a view similar to Fig. 1, the guard-arms being in the closed position. Fig. 3 is a side elevation of one end of a car equipped with another form of my invention; and Fig. 4 is a vertical section of a portion of one of the uprights of Fig. 3, on a larger scale, showing this latter manner of applying my invention to a car.

1 represents the uprights, and 2 the handle-bars, of a type of usual or approved construction. Pivoted to each of the uprights 1 at a suitable distance above the seats of the car is a series of guard-arms 3 of suitable length to extend across the openings or entrances in the side of the car between the uprights 1. Toward the upper end of and pivotally secured to the uprights 1 are a series of bell-cranks 4, corresponding in number to the number of guard-arms 3. Connected to the guard-arms 3 to one side of

their pivotal points, as by means of an offset 5, are a series of rods or links 6, which have their other ends connected to one end of the bell-cranks 4. The other ends of the bell-cranks 4 are connected by a reciprocating bar or rod 7 or other suitable connection, whereby all of said bell-cranks may be moved simultaneously.

In Figs. 1 and 2 I have shown the guard-arms 3 as centrally pivoted to the uprights 1 and extending upon opposite sides of said uprights to about midway between the uprights, the guard-arms of adjacent uprights meeting at this point when in the lowered position to form a complete closure at the entrance between adjacent uprights, as shown in Fig. 2. The guard-arms of the outer or end uprights extend to within a short distance of the dashboards and are provided with suitable hooks or eyes to receive chains 8, secured to the dashboards, to thereby close the entrances at the platforms of the car.

In Fig. 3 I have shown the guard-arms 3<sup>x</sup> as pivoted at one end and extending entirely across the entrances or openings between adjacent uprights, and in this form of the device the free ends of the guard-arms when in the lowered or closed position will enter between the handle-bars and uprights, and thereby secure the guard-arms against outward strain.

In the application of my invention, as herein shown, the component parts thereof are secured to the car by the fastenings used to secure the handle-bars to the uprights, and, as more particularly shown in Fig. 4, the guard-arms 3<sup>x</sup> and bell-cranks 4 are arranged between the ends of the handle-bars 2 and the uprights 1, and the fastening-bolts 9 are passed through the handle-bars, guard-arms and bell-cranks, and the uprights. Sleeves or bushings 10 are placed upon the bolts 9 between the handle-bars and uprights and on which sleeves or bushings the bell-cranks and guard-arms are loosely mounted. These sleeves or bushings 10 are of a width greater than the thickness of the bell-cranks and guard-arms and serve to prevent the said bell-cranks and guard-arms from being bound against movement between the handle-bars and uprights when the bolts 9 are tightened.



By this construction it will be observed that the invention may be easily and very economically applied to cars as they are being constructed, and so also may as readily be applied to cars which are already constructed and in use.

Suitable fastening devices may be applied to the car for securing the device in open position. For this purpose I may use spring-catches 11, secured to the seats, as shown in Figs. 1 and 2, or to the uprights, as shown in Fig. 3, and adapted to receive and hold the end guard-arms when the said arms are raised or in the open position, as in Fig. 1.

Of course it will be understood that the device is duplicated upon both sides of the car.

The operation of the device is as follows: The parts being in the open position, as shown in Fig. 1, and it being desired to close the entrances to the car, it is only necessary that the motorman or conductor at either end of the car, as the case may be, grasp the end guard-arm and give it a pull, and the several guard-arms will thereby be lowered to the closed position (shown in Fig. 2) by reason of the fact that the said guard-arms are simultaneously operated through the connecting rods or links 6 and bell-cranks 4 and the reciprocating connecting rod or bar 7. In order to open the entrances to the car, the operation or manipulation of the end guard-arms is reversed and the guard-arms raised to the open position, the end guard-arms engaging their catches to secure the device in the open position. The operation of that form of the device shown in Fig. 3 is similar to that shown in Figs. 1 and 2. When the parts are in the lowered or closed position, the chains 8 are secured to the end guard-arms, to thereby close the entrances to the platforms.

I wish to be understood as not limiting my invention to the exact details of construction herein shown and described, as the same may be varied somewhat and still be within the scope of my invention.

What I claim is—

1. A side guard for cars, comprising a series of guard-arms, a series of independent bell-cranks, connections between said guard-arms and bell-cranks, and a reciprocating connecting-rod for said bell-cranks, substantially as described.

2. A side guard for cars, comprising a series of guard-arms pivoted to the uprights of the car, a series of bell-cranks also pivoted to said uprights, connecting rods or links for said guard-arms and bell-cranks, and a reciprocating connecting-bar for said bell-cranks, whereby said guard-arms and bell-cranks are movable simultaneously to open and close the entrances to the car, substantially as described.

3. A side guard for cars, comprising a series of guard-arms pivoted to the uprights of the car, a series of bell-cranks also pivoted to said uprights, connecting rods or links for said guard-arms and bell-cranks, a reciprocating connecting-bar for said bell-cranks, whereby said guard-arms and bell-cranks are movable simultaneously to open and close the entrances to the car, and catches for holding said parts in open position, substantially as described.

4. A side guard for cars, comprising a series of guard-arms pivotally secured to the car by the handle-bar fastenings, a series of bell-cranks also pivotally secured to the car by the said fastenings, connecting rods or links for said guard-arms and bell-cranks, and a reciprocating connecting-bar for said bell-cranks, whereby all of said bell-cranks and guard-arms are movable simultaneously to open and close the entrances to the car, substantially as described.

5. A side guard for cars, comprising a series of guard-arms pivotally secured to the car by the handle-bar fastenings, a series of bell-cranks also pivotally secured to the car by said fastenings, connecting rods or links for said guard-arms and bell-cranks, and a reciprocating connecting-bar for said bell-cranks, whereby all of said bell-cranks and guard-arms are movable simultaneously to open and close the entrances to the car, the free ends of said guard-arms when in the closed position adapted to engage the adjacent handle-bars, substantially as described.

In testimony whereof I have hereunto set my hand this 14th day of May, A. D. 1902.

JAMES H. DONNELLY.

Witnesses:

WARREN H. SAGE,  
W. W. RULEY.