(No Model.) 3 Sheets—Sheet 1.

G. M. BRILL.

DOOR FOR CARS.

No. 468,434. Patented Feb. 9, 1892.

Fig. 5.

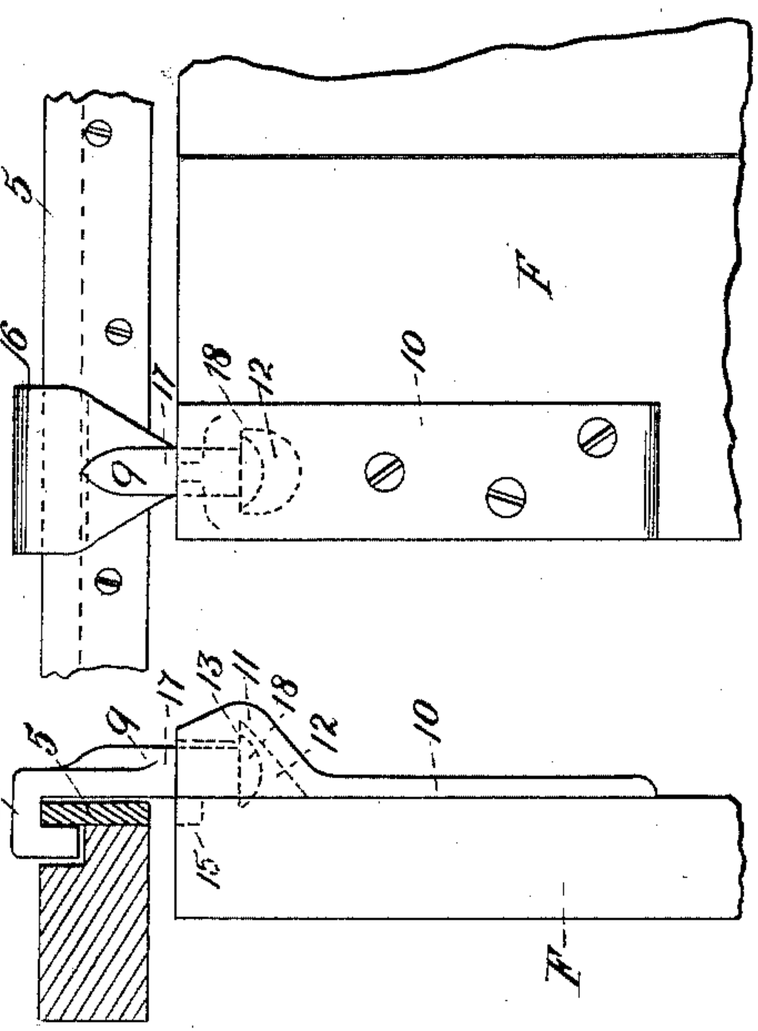


Fig. 4

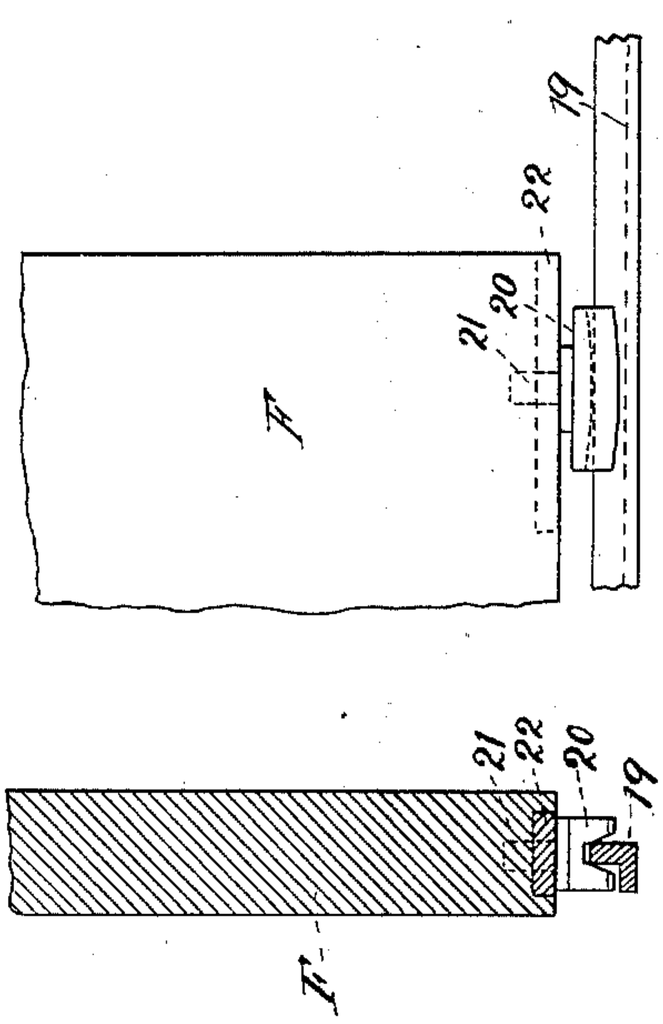
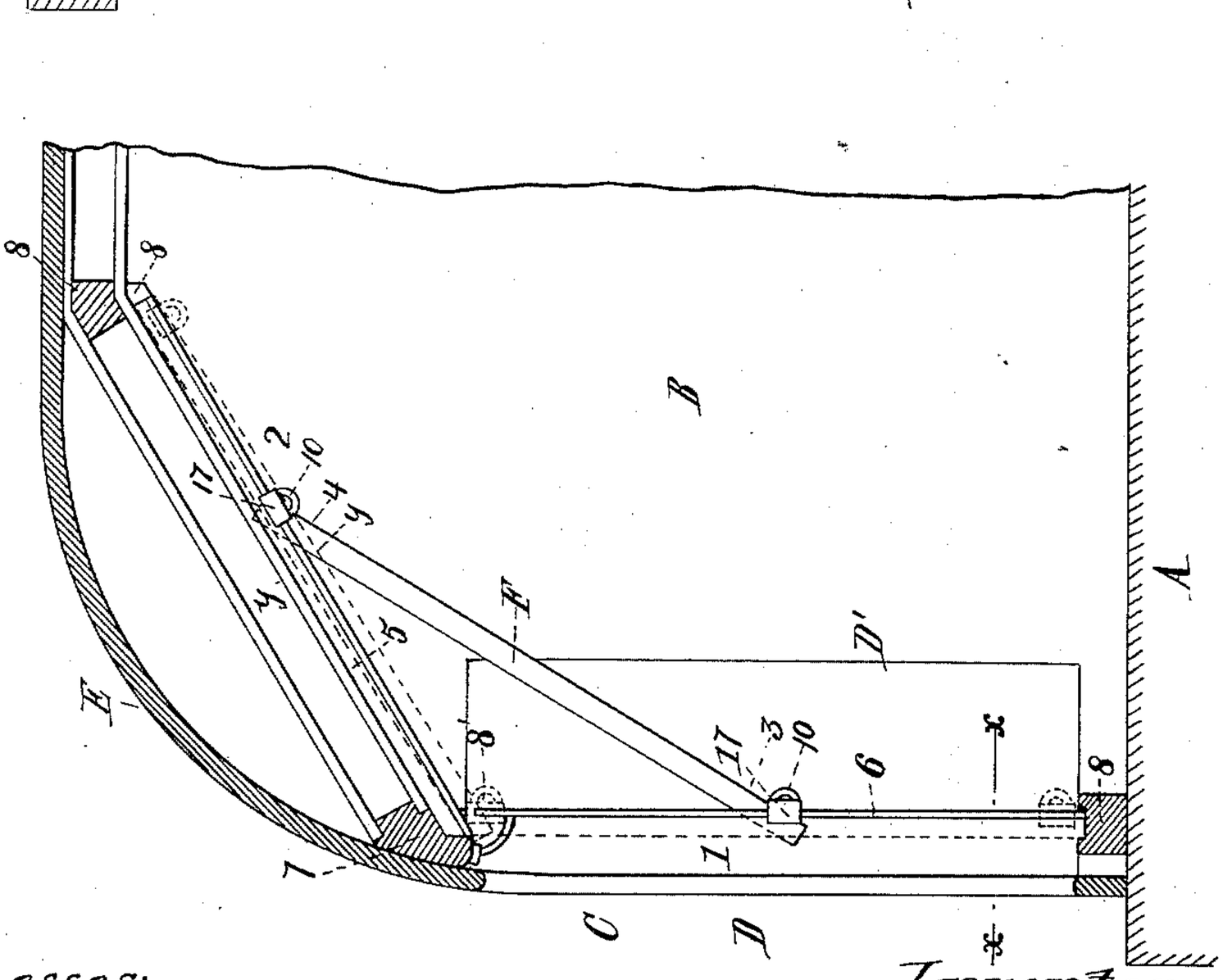


Fig. 1.



Witnesses:
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M. E. Stoddard

Inventor:
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by Joseph L. Levy
Atty.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 3.

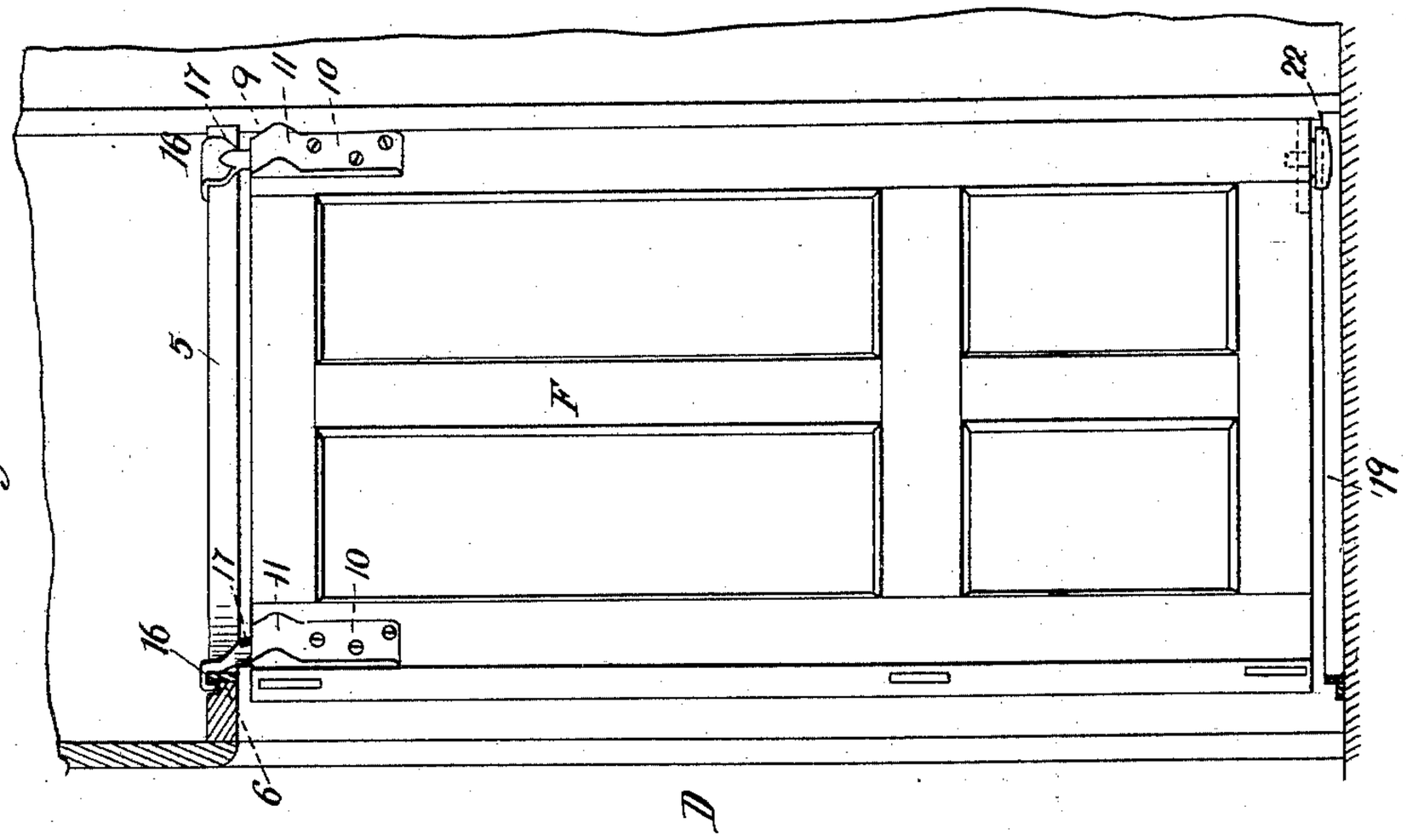
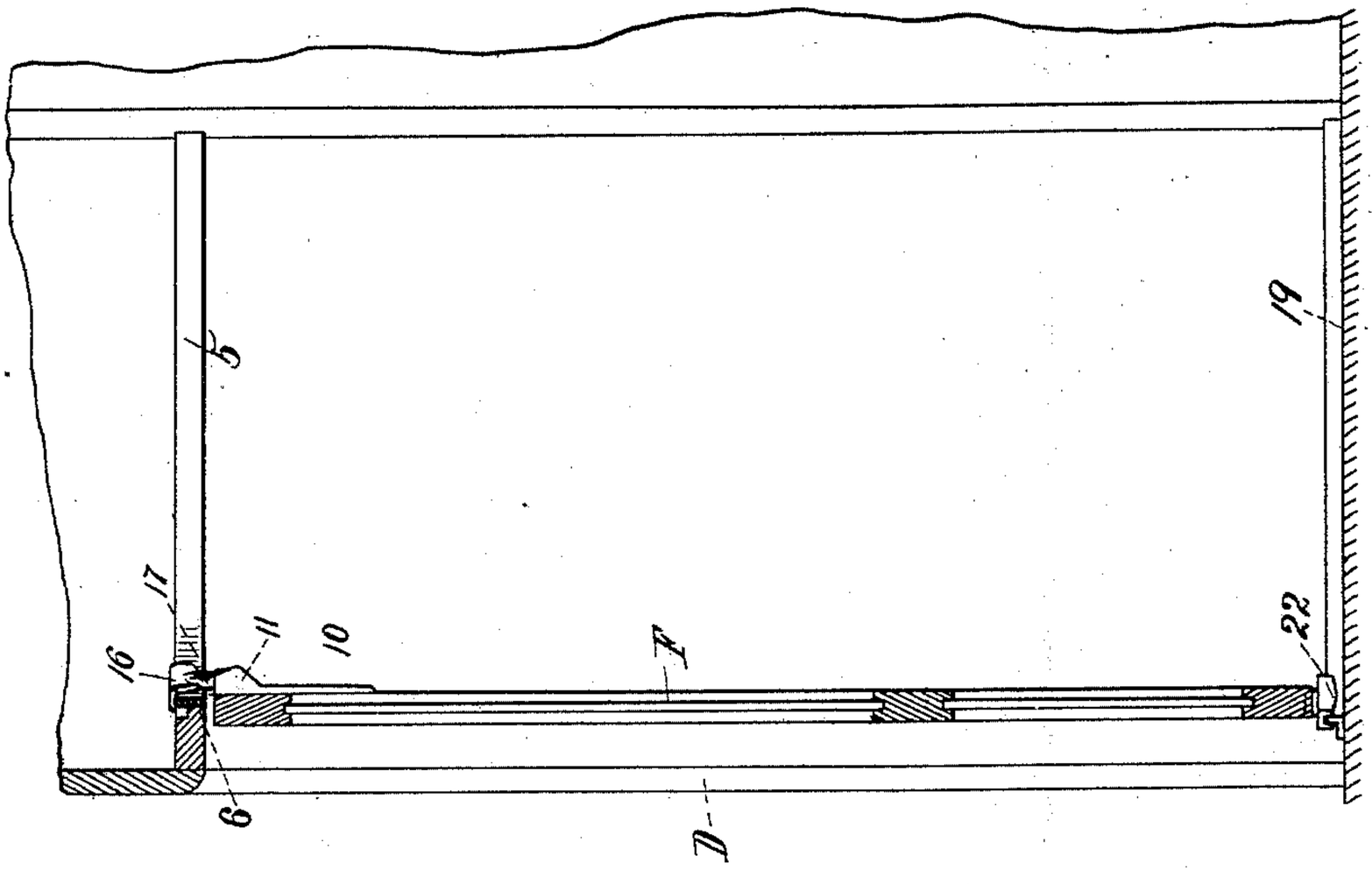


Fig. 2.



Witnesses;
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(No Model.) 3 Sheets—Sheet 3.

G. M. BRILL.

DOOR FOR CARS.

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Fig 6

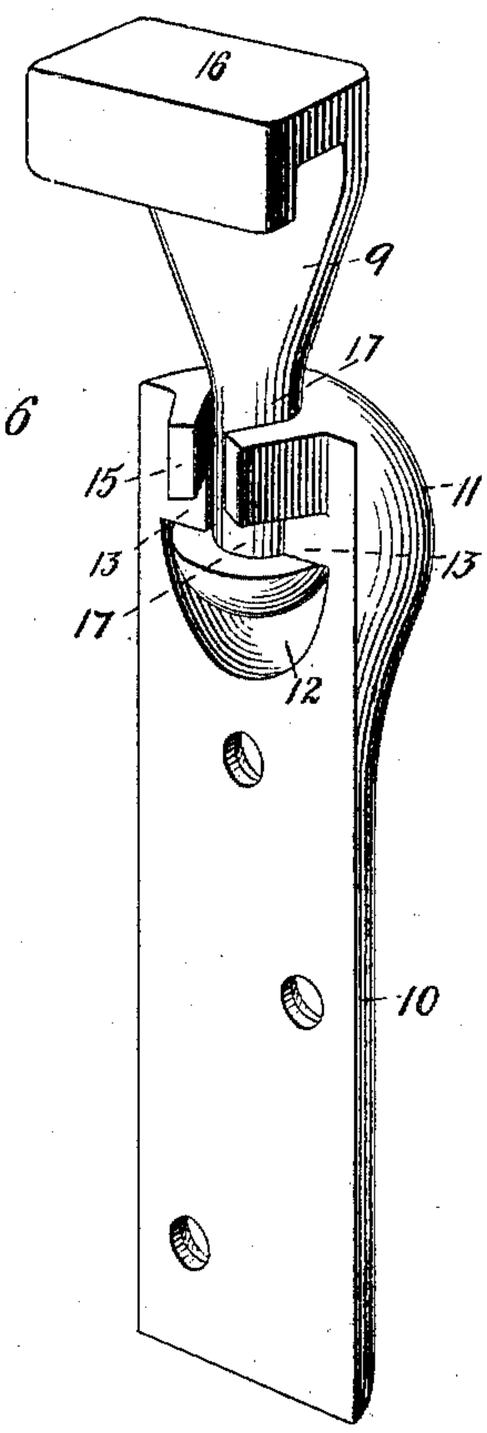
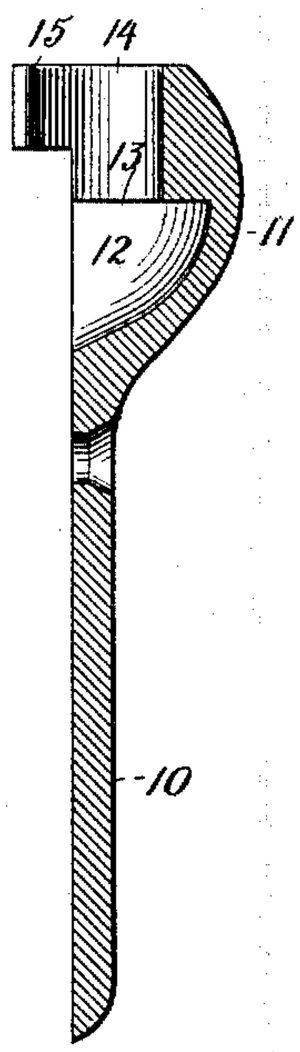


Fig 7.



Witnesses:
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Inventor:
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by Joseph L. Levy
Atty.

UNITED STATES PATENT OFFICE.

GEORGE MARTIN BRILL, OF PHILADELPHIA, PENNSYLVANIA.

DOOR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 468,434, dated February 9, 1892.

Application filed March 17, 1891. Serial No. 385,349. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MARTIN BRILL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have made a new and useful Improvement in Doors for Cars and the Like, of which the following is a specification.

My invention relates to sliding doors and to that class which are mounted on a track by means of trolleys. My invention is especially designed for use in those parts of cars and the like which have rounded or squared ends or sections diverted from a straight line and openings designed to be closed by doors located in close juxtaposition to said places, where the space within the car is not sufficient to allow for the use of the ordinary folding door or one swinging into the car.

My improvements in the methods of mounting a door enable me to locate the entrance to the car, such entrance being designed to be closed by a door, close up to the squared or rounded section of the same and to open and close the door without taking up but very little of the interior space.

The improvements wherein my invention resides will be further set forth in the specification and claims.

In the drawings, Figure 1 is a plan view of the door and mounted devices secured to the car, the car being in section; Fig. 2, a vertical section taken on the line *x x*, Fig. 1, showing the door closing the doorway, which position is shown in Fig. 1 in dotted lines at 1; Fig. 3, a side elevation showing the door open and occupying the position shown at dotted lines in Fig. 1 at 2; Fig. 4, an end elevation of the door and trolley for mounting the same; Fig. 5, a side elevation of the same, the door being broken away for the purpose of clearly illustrating the application of my invention thereto. The upper part of the door of the last two figures refers to that part of the door in full lines in Fig. 1 at the arrow 3, the lower part of the door in these figures being indicated by the arrow 4, Fig. 1. Fig. 6 is a perspective view of the trolley and socket-plate, and Fig. 7 a vertical section of the socket-plate.

In the drawings the same letters and figures of reference refer to similar parts throughout the several views.

As before stated, my invention consists in so mounting a door that it will be enabled to turn corners and move about diversely-shaped sections which are diverted from a straight line, and I therefore do not limit myself to the specific method of carrying my invention into effect, one of such means being shown and described herein.

A represents the body of a car of any suitable construction, and B an enlarged compartment, wherein may be located a driver, &c. Generally these inclosed apartments are located at the end of a car and are used for the convenience of a gripman or engineer. They are usually small in comparison with the car-body, have comparatively very little interior space, and have either rounded or squared ends.

C is the outline of the compartment, and D the doorway thereof.

At D′ is shown a step located within the frontage of the doorway.

At E, Fig. 1, it will be seen that the corner of the compartment is rounded in cross-section.

It will be noticed that the door F is not one composed of hinged sections, but is rigid or inflexible throughout. In order to enable a door of this description to be operated without materially encroaching upon the inner space of the compartment, I provide means whereby the door will be moved in a path diverted from a straight line. To do this I secure ways 5 and 6 to the door-posts or any other part of the car-frame accessible for this purpose, the way 5 being secured to the car at 7 and 8 and the way 6 secured to the car and so supported at the other end at 7 that it will permit one of the suspending trolleys to pass it, such way being shortened at 8′ for this purpose, and suitably secured to the car.

To the upper portion of the door F, I secure the swiveled trolleys 9, which are in turn secured within the socket-plates 10, which has an enlarged or socket section 11. The socket-section 11 is provided with an interior socket 12, a shoulder 13, and an upwardly-extending opening 14, circular or otherwise. Extensions 15 are formed on the socket-section for a purpose hereinafter set forth. The trol-

leys 9 have a hooked section 16 for engagement with the guides, and a bolt 17 ending in the enlarged head 18. The trolleys 9 are placed within the sockets 11, and when in position the extensions 15, which were previously wide enough apart to permit the bolt 17 to pass through, are brought together, thereby securing the trolley within the socket. When secured to the door, the extensions 15 enter a hole cut in the door to receive them and in a measure tend to steady the device. When being used—that is, in supporting the door—the head 18 of the trolley-bolt bears against the shoulder 13 of the socket-section, the trolley-bolt being free to turn therein. In the present structure the trolley on the way 5 is confined in its travel to that particular way, and the trolley on the way 6 is likewise confined. In operating, the door and trolleys assume the position shown in full and dotted lines in Fig. 1, and also in Figs. 2 and 3.

From the foregoing it will be seen that the door can be properly hung and can be operated without projecting it into the car-space but a very short distance, and when fully opened it abuts closely against the side of the car and is out of the way. The ways being arranged in the arc of a circle or diverted in any way from a straight line by reason of the configuration of the car about which the door is to be moved, my invention will permit it to be moved back and forth to open and close the doorway without materially encroaching upon the interior space of the car, and the door can be moved around and about variously-configured sections, which otherwise would obstruct and prevent the movement of a sliding or swinging door.

In order to prevent the door from swinging on the trolleys, and also in a measure to assist the way in directing the line of travel of the door, I locate below the door a way and guide, which way should preferably be disposed in the same line as the upper suspended way is. At 19 is shown such a way, preferably made of angle-iron, and secured to the floor preferably below and in the same line as the upper way. At 20 is a guide secured to the under part of the door. The guide 20 has an upwardly-extending spindle 21, and a plate 22 is set in the bottom of the door, said door and plate having a hole into which the spindle 21 enters and is free to turn or swivel therein. This guide, like the upper trolley, is confined in its travel to its particular way, and the guide and way can be duplicated on the other end of the door, if desired, and any form of guides and ways may be used without departing from the spirit of my invention.

I am aware of the patent to J. G. Brill and G. M. Brill, No. 202,921, dated April 30, 1878, and do not intend to claim herein anything there shown and described.

What I claim is—

1. The combination, with the inflexible door F, upper suspending-ways 5 and 6, and the lower way 19, of the trolley 9, having the hook 16, bolt 17, enlarged head 18, socket-plate 10, socket 12, and shoulder 13, and lower guide 20, with spindle 21 extending into the door, substantially as described.

2. The combination, with a sliding door and ways, of a trolley 9 for suspending the door on the ways, comprising the socket-plate 10, having the enlarged socket-section 11, socket 12, shoulder 13, upwardly-extending opening 14, and lug 15, hook 16, bolt 17, and head 18, substantially as described.

Signed at the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, this 23d day of February, 1891.

GEO. MARTIN BRILL.

Witnesses:
R. S. REED,
R. J. HAWKINS.