

J. G. & G. M. BRILL.  
Car-Door.

No. 202,921.

Patented April 30, 1878.

Fig. 1.

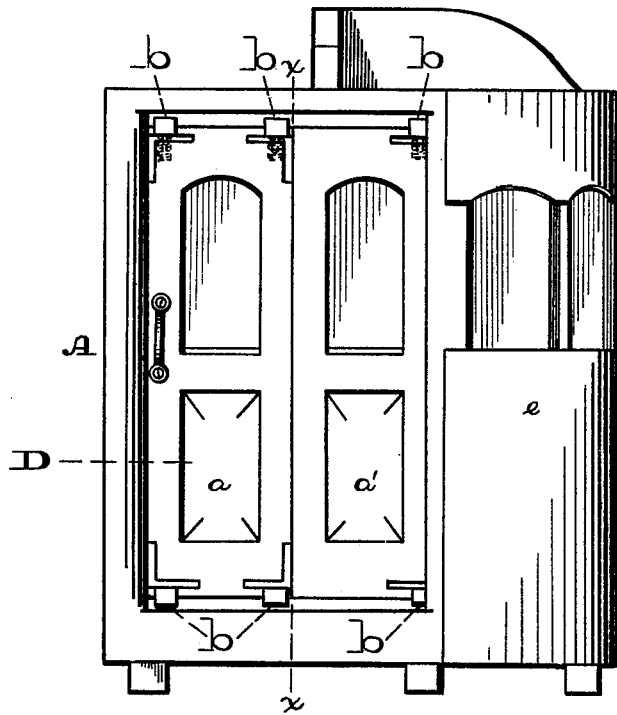


Fig. 3.

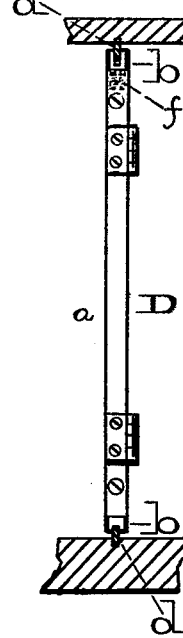
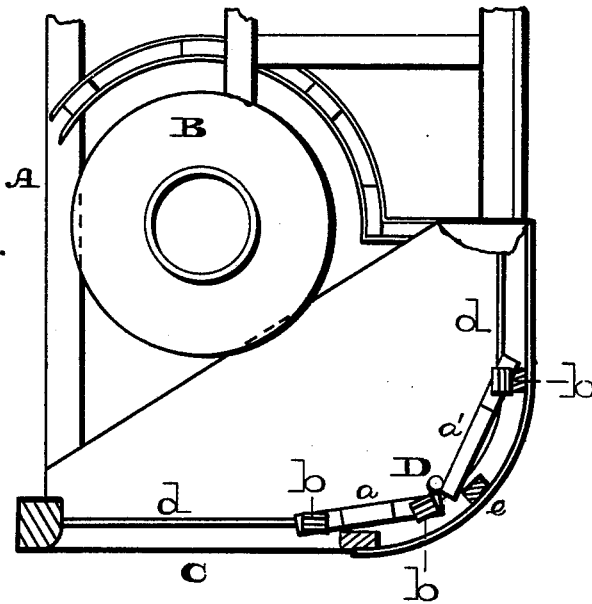


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CAR-DOORS.

Specification forming part of Letters Patent No. **202,921**, dated April 30, 1878; application filed December 13, 1877.

*To all whom it may concern:*

Be it known that we, JOHN G. BRILL and GEORGE M. BRILL, both of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Cars, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a front view of a portion of a car embodying our invention. Fig. 2 is a top view thereof. Fig. 3 is a vertical section in line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

In street-cars of the order of dummies it will be found requisite, occasionally, to remove the boiler and the engine, or portions of the motor. To accomplish this in the cars as now constructed, the parts adjacent to the boiler, &c., must necessarily be displaced, or the car partly dismantled.

Our invention has for its object the remedy of such difficulties; and it consists of an enlarged doorway, with a sectional door of corresponding size, and opening both transversely and longitudinally, said door having connected to it swiveled guides, which ride on transversely and longitudinally extending ways, whereby the width of the car is not increased to accommodate the enlarged door, and ample provision is afforded for the removal and replacement of the boiler, &c., by opening the door, and without disturbing the framework of the body of the car.

Referring to the drawings, A represents the body of a mechanically-operated car or dummy, and B the boiler or other power or motor of the same; but the invention is applicable to other street-cars. C represents a wide doorway, leading from the engine-room to the front, rear, or side of the car, and D represents a correspondingly-sized door, which is formed of vertical sections *a a'*, hinged together and moving as one.

To the upper and lower ends of the door there are pivoted or swiveled guides *b*, which engage with and ride on ways *d*, secured to the upper and lower portions of the frame of the car at the end occupied by the door, and said ways extend transversely from one side of the car to

the other, are then curved at the corner of the car, and extend longitudinally, or toward the rear or front of the car; and the corner of the car, behind which the curved portions of the ways *d* are located, is also curved or bent, as at *e*.

It will be seen that when the door is pushed open the guides *b* follow the direction of the ways *d*, and cause the door to move into, around, and beyond the corner *e*, (see Fig. 2,) and as the door is formed of the sections *a a'*, hinged together, and the guides are pivoted thereto, these sections move on their hinges and permit the door to accommodate itself to the curvature and change of direction of the ways *d* without binding or necessity of increase of power to effect the opening of the door.

The closing of the door is accomplished with ease, and the appearance of the door when closed is not materially altered, except as a matter of size.

It will be also seen that when the door is open a large space is afforded for the removal from or application to the car of the boiler, engine, &c., without in any respect disturbing the frame-work of the car; and although a large door is employed, the width of the car is not increased to accommodate such door when open, as the length of the car is rendered available to receive the open door, the advantage of which is evident.

It will also be seen that when the door is opened it occupies one corner of the car, and the engineer is permitted to look out at the side of the car which he occupies without obstruction of the door. The same advantage exists when the door is closed.

In order to prevent rattling of the guides *b* we employ springs *f*, which may encircle the stems of the guides, or they may be placed below said stems, or located between the guides and ways, or elsewhere.

If desired, the ways *d* and guides *b* may be so disposed that the door will hang and open on the outside of the car, without, however, departing from the nature of our invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The car-door D, formed of hinged sections, in combination with the transversely and longitudinally extending ways *d*, and swiveled guides *b*, substantially as and for the purpose set forth.

2. The sectional car-door D, ways *d*, swiveled guides *b*, and springs *f*, combined and

operating substantially as and for the purpose set forth.

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