D. SHIELD.

Operating Street-Car Door.

No. 168,791. Patented Oct. 11, 1875.

Fig. 1

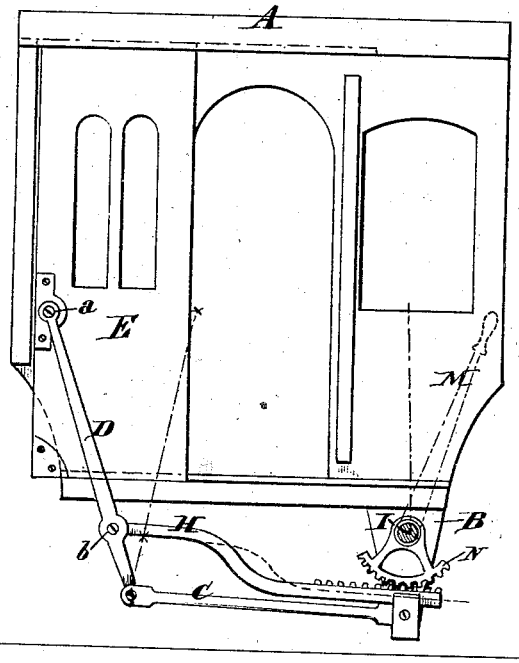
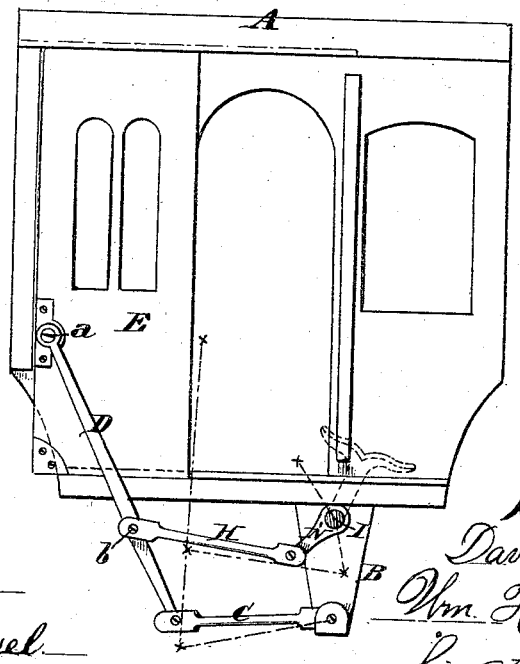


Fig. 2



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UNITED STATES PATENT OFFICE.

DAVID SHIELD, OF CAMBRIDGE CITY, IND., ASSIGNOR OF THREE-FOURTHS HIS RIGHT TO INDIANA CAR COMPANY, OF SAME PLACE.

IMPROVEMENT IN OPERATING STREET-CAR DOORS.

Specification forming part of Letters Patent No. **168,791**, dated October 11, 1875; application filed June 15, 1875.

To all whom it may concern:

Be it known that I, DAVID SHIELD, a resident of the town of Cambridge City, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Devices for Opening and Closing the Doors of Street-Cars, of which the following is a specification:

My invention relates to certain improved devices combined with street-cars, whereby the driver or conductor can readily and easily open or close the doors of the car without leaving their respective stands on the car.

In the accompanying drawing, making a part of this specification, Figure 1 represents an end of a street-car constructed so as to embody my invention, and Fig. 2 represents an end of a street-car containing a modification of my invention.

The ordinary street-car, designated by letter A, is provided with a sliding door or doors, E. The doors are arranged to slide open or shut in any desirable way. From the bottom of the car depends an arm, B, at whose lower end is pivoted one end of a lever, C. The other end of this lever C is pivoted to the lower end of a lever, D, the upper end of this last-named lever being pivoted at *a* to the outer edge of the sliding door.

In Fig. 1, a lever, H, is pivoted at one end to lever D, at a point, *b*, between the bottom of lever D and the bottom of the car. This lever H lies in about the same vertical plane as lever C. The upper side of this end of lever H, which is not pivoted to lever D, is provided with a ratchet, which latter engages with a semicircular ratchet, or ratchet-segment, N, fastened to and rotated by a shaft, I, which latter is supported by and turns in the arm B, and, when desired, turns also in another arm attached to the bottom of the car at a suitable distance from the arm B. The shaft I is operated by means of a treadle, as shown in Fig. 2, attached at its lower extremity to the shaft I, and projecting up through and above the bottom of the car a sufficient distance to be appropriately operated.

In Fig. 2 the arrangement of levers and mechanism is substantially the same as in Fig. 1, the actual differences being that the end of lever H, which is, in the mechanism shown in Fig. 1, provided with ratchet-teeth, is here constructed without ratchet-teeth, and is pivoted to the lower end of an arm, N′, which latter takes the place of the ratchet-segment N shown in Fig. 1, and is rigidly attached to the shaft I. The shaft I is operated by the treadle or hand-lever in the manner aforementioned.

The mode in which my invention operates is as follows, viz: The operator — that is, the driver or the conductor of the car — should the door be open, (see Figs. 1 and 2 of drawing,) moves the hand-lever M to the left, thus turning shaft I, which latter turns ratchet-segment H, and thereby moves the ratchet-lever E to the right. The latter, in moving, draws the upper end of the lever D over to the right, and lever D moves with it the door E, and thus closes the latter. When the treadle is used, the foot is employed instead of the hand to turn the shaft I.

In case the ratchet-segment N and the ratchet-teeth on lever H are dispensed with, and the mechanism is that shown in Fig. 2, the shaft I, when rotated by the treadle or hand-lever, in turn moves the lever N′ to the right, thereby drawing the lever H and lever D, and the door E, to the right, thus closing the latter. To open the door the operation is reversed.

One of the most important features of my invention is the combination of the fixed fulcrum B, lever C, and lever D, the latter, *i. e.*, lever D, being pivoted to the door, and actuated by any suitable mechanism controlled and operated by the driver or conductor.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a car-door the lever D, lever C, pivoted to a fixed fulcrum, lever H, lever N′, and a hand or foot lever, substantially as and for the purposes set forth.

2. In combination with a car-door, the lever D and lever C, the lever C pivoted to a fixed fulcrum, and the lever D to a moving adjustable fulcrum, and operated by mechanism under the control of the driver or conductor, as may be desired.

DAVID SHIELD.

Attest:
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