J. McGREGOR.

OPERATING STREET-CAR DOORS.

No. 185,118. Patented Dec. 5, 1876.

Fig. 1.

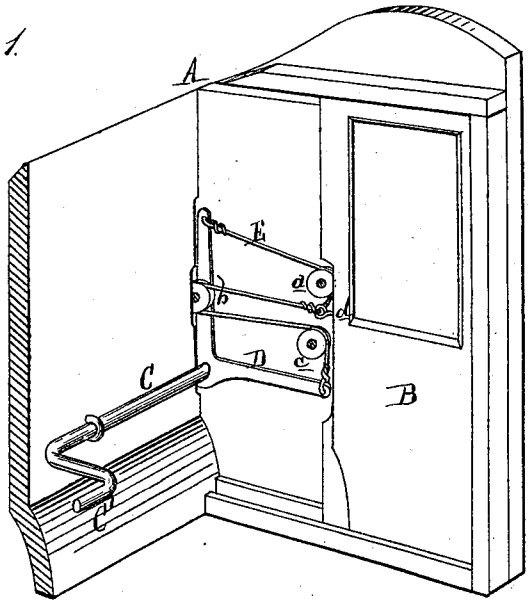
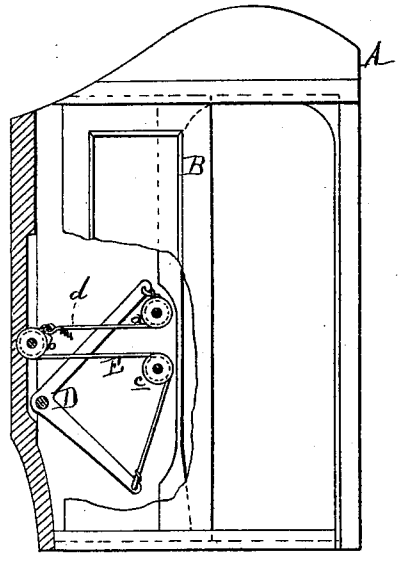


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES McGREGOR, OF DETROIT, MICHIGAN, ASSIGNOR TO MICHIGAN CAR COMPANY, OF SAME PLACE.

IMPROVEMENT IN OPERATING STREET-CAR DOORS.

Specification forming part of Letters Patent No. **185,118**, dated December 5, 1876; application filed July 1, 1876.

To all whom it may concern:

Be it known that I, JAMES McGREGOR, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Operating the Doors of Horse-Cars, of which the following is a specification:

The object of my invention is to provide a horse-car with a simple but effective device by means of which the driver, standing on the front platform, can open and close the rear door of the car without leaving his post.

The invention consists in a rock-shaft longitudinally journaled in the space behind the lining, at one side of the car, provided with a crank at the front end for the driver to rotate it with, and at the rear end carrying a lever-crank, to whose ends the ends of a cord are secured. This cord runs over three guide-sheaves at the rear end of the car, and is secured at one point to the edge of the car-door, in such a way that it (the door) is opened or closed by a quarter-turn of the rock-shaft in either direction.

Figure 1 is a perspective view, showing a portion of the interior of a car fitted with my improvement, the door being closed and the car-linings removed. Fig. 2 is a cross-section, showing the door opened and partially broken away.

In the drawing, A represents a portion of the body of a car, and B a door, sliding in ways partially across the rear end thereof. C is a rock-shaft, horizontally journaled along one side of the car, behind the lining thereof, projecting through the front end, where it receives a crank, C′, within easy reach of the driver, and with which he oscillates the said rock-shaft to move the door B. At the rear end of the rock-shaft a lever-crank or bent lever, D, is secured thereto, to one arm of which is secured the end of a cord, E, which is led over a grooved pulley, *a*, journaled on the rear-end wall of the car, at the inner edge of the door-frame, which is cut nearly through to receive it. It passes thence to and over a pulley, *b*, at the side of the car, thence over a pulley, *c*, under the pulley *a*, and fastened to the other arm of the lever-crank. After the cord has passed over the pulley *a* it is fastened to an eyebolt, *d*, projecting from the inner edge of the door.

In throwing the crank downward the lower arm of the lever-crank pulls upon its end of the rope to pull open the door, and in a reverse movement the upper arm pulls on its end of the rope, and thus draws the door to the closed position with less friction and greater ease than devices heretofore used for the purpose.

The lever may be single, compound, or a bell-crank, and the cord may be arranged as in Fig. 2.

What I claim as my invention is—

In mechanism for operating car-doors, the combination, with the rock-shaft C, passing along the side of the car, of the bent lever D, the cord E, and the pulleys *a b c*, constructed, arranged, and operating substantially as described and shown.

JAS. McGREGOR.

Witnesses:
S. S. DE LANO,
HUGH McMILLAN.