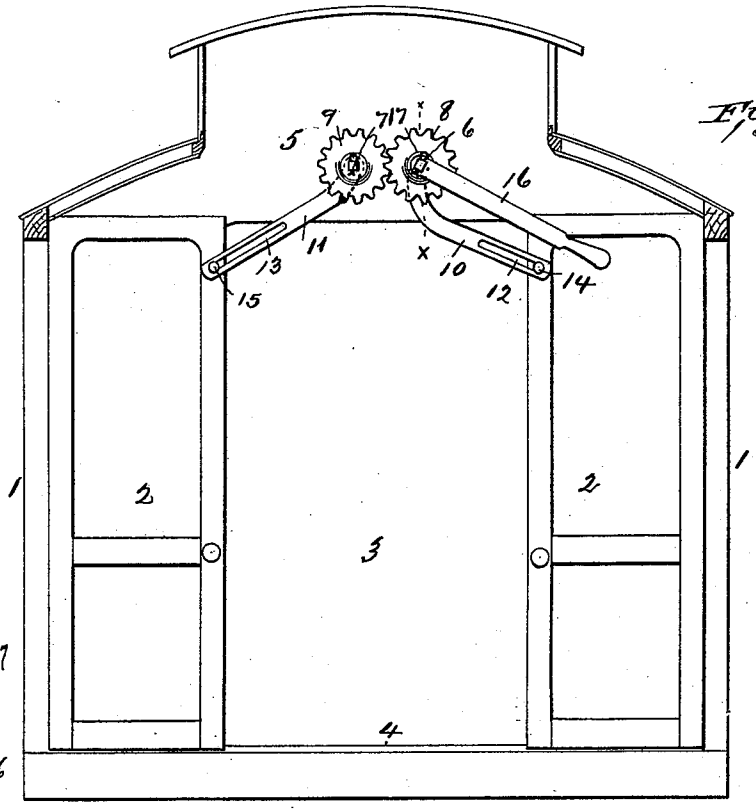
(No Model.)

J. RAWLE.

DEVICE FOR OPERATING DOORS.

No. 523,710. Patented July 31, 1894.

Fig. 1.



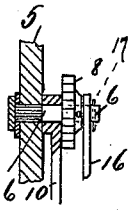
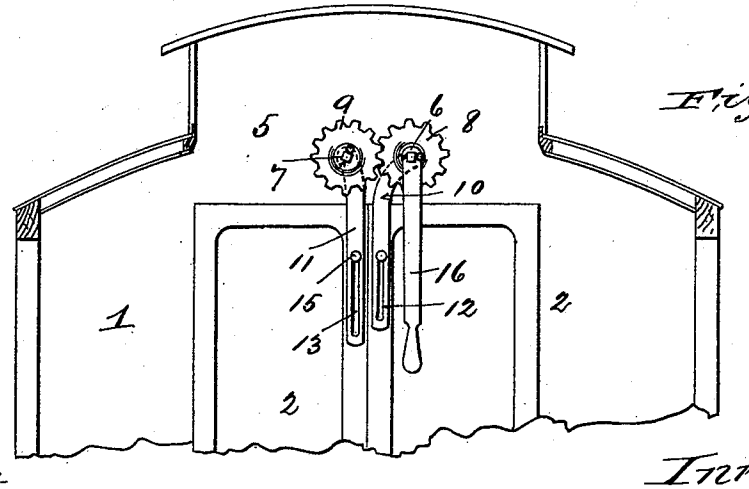


Fig. 3.

Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES RAWLE, OF RADNOR, PENNSYLVANIA.

DEVICE FOR OPERATING DOORS.

SPECIFICATION forming part of Letters Patent No. 523,710, dated July 31, 1894.

Application filed August 23, 1893. Serial No. 483,814. (No model.)

To all whom it may concern:

Be it known that I, JAMES RAWLE, a citizen of the United States, residing in Radnor township, in the county of Delaware and State of Pennsylvania, have made certain new and useful Improvements in Devices for Operating Doors, of which the following is a specification.

My invention has relation to devices which will simultaneously move, or open and close, two doors or like bodies arranged to move to or from each other to open or close a passageway, motion being communicated by the operation of one door to the other door moving them to or from each other simultaneously.

My invention is especially adapted for use upon street cars wherein it is desired that a wide passageway be made quickly without increasing the size of the doors, which would be necessitated were the doors as wide as the opening in the car.

My invention also comprises devices whereby the doors can be operated simultaneously by means other than by the primary movement of one of the two doors.

My invention therefore consists of the structure and combination of the parts hereinafter described and more fully pointed out in the claims.

In the drawings—Figure 1 is a sectional elevation through a portion of a car body of any convenient or desired form, showing the doors open and a passageway between them. Fig. 2 is a like view, the lower portion of the car being detached and the doors closed; and Fig. 3 is a sectional elevation approximately on the line *x x*, Fig. 1.

In the drawings 1 represents the body of an ordinary car, and 2 the doors thereof mounted to be moved in front of an opening 3 leading preferably to the car platform, the doors being carried below upon a suitable guide way or bar 4 and supported above in any desirable manner. Thus the two doors are movable to or from each other to close or open the passageway leading from the platform to the car. This opening of course does not necessarily need to be at the end of the car but can be at the side or in any other desirable place.

For operating both doors simultaneously by the movement of one I have employed the following device. Secured in the front or face board 5 of the car are two spindles 6 and 7, each preferably being mounted to rotate in suitable bearings. Fixedly secured upon the spindles 6 and 7 are intermeshed gear wheels 8 and 9, and also fixedly secured upon both spindles are crank arms 10 and 11, the ends of which are provided with slots 12, 13 which engage with pins 14, 15, extending from the doors and secured thereto in any desirable manner. Thus it will be seen that with the movement of one of the doors a like movement will be communicated to the other door both to open and close them. Any form of device for supporting the intermeshed gears and slotted crank arms can be used, the form shown in Fig. 3 being merely a convenient one.

I further provide a device for operating both of the doors without primarily moving either one of them, that is, without directly moving one to move the other. This device consists simply in securing to the extension of either one of the spindles 6 or 7 a lever 16, it being shown as secured to the squared end of the spindle 6 and secured in place by a cotter 17. The lever 16 should be of sufficient length to be grasped by the hand, and when so grasped a slight vibration in either direction will simultaneously move both of the doors through the medium of the intermeshed gears and the slotted crank arms and pins on the door, opening or closing them without having the operator primarily move one of the doors for this purpose.

Having described my invention, I claim—

1. The combination, with the frame of a doorway, doors sliding against said frame to close the doorway, and guides for said doors, of slotted crank arms, connected each to a door and to the frame, and gear wheels geared to rotate reversely to each other and connected to said crank arms whereby the movement of one of the doors will produce an opposite movement of the other, substantially as described.

2. The combination, with the oppositely sliding doors, of the intermeshed gears, suitably supported slotted crank arms movable by said gears, and pins on the doors for engagement with the slots in said crank arms, substantially as described.

3. The combination, with positively-guided and oppositely-movable sliding doors, of the

intermeshed gears 8 and 9, spindles 6 and 7 for supporting the gears, slotted crank arms operated by said gears and having a movable connection with the said doors, and a device connected to one of said gears for primarily operating them to move the doors, substantially as described.

Signed at Philadelphia, in the county of Philadelphia and State of Pennsylvania, this 11th day of August, 1893.

JAMES RAWLE.

Witnesses:
HENRY C. ESLING,
CHARLES MCQUILKIN.