

UNITED STATES PATENT OFFICE.

THOMAS YOUNG, OF BRADFORD, PENNSYLVANIA.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 670,944, dated April 2, 1901.

Application filed June 23, 1900. Serial No. 21,373. (No model.)

To all whom it may concern:

Be it known that I, THOMAS YOUNG, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented a new and useful Car-Door, of which the following is a specification.

This invention relates to car-doors in general, and more particularly to that class employed upon freight-cars; and it has specific reference to the mechanism for locking and unlocking the door and also to the means for holding the door open.

The object of the invention is to provide a construction which will be simple and efficient in its operation and by means of which the door may be effectively locked against accidental opening and may be easily engaged to hold it open and may be readily released to permit it to be closed.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is an elevation showing the side of a portion of a freight-car with a door applied thereto and equipped in accordance with the present invention. Fig. 2 is a section on line 2 2 of Fig. 1 and showing parts of the construction in elevation. Fig. 3 is a vertical section taken through the car and door and showing the door in its open position and engaged by the retaining device. Fig. 4 is a section through the door and showing the latch thereof.

Referring now to the drawings, 5 represents the side of a freight-car, having a door-opening 6 therein, which is adapted to receive a door 7, with its outer face flush with the outer face of the car-body, the door when opened being first drawn from the door-opening and then moved laterally to uncover the door-opening or doorway. To permit this manipulation of the door 7, a track in the form of a rod 8 has its ends engaged with brackets 9, secured to the outer face of the car-body and adjacent the upper edge thereof, the car-door being slidably engaged with this rod through the medium of hinges 10, one leaf of each of which is secured to the outer face of the door, while the other leaf is bent to encircle the rod. The rod 8 is so po-

sitioned with respect to the side of the car that the door will normally hang parallel with the side of the car and removed from the door-opening.

In order to move the door 7 into the doorway preparatory to locking the door, it is necessary to raise it and press it inwardly slightly, the raising action acting to swing the door into the doorway, because of the hinges, after the door has been moved from its dead-center. To thus raise the door, a pulley-wheel 12 is disposed rotatably upon the rod 8 and is held in proper relation to the door by arms 13, which are attached to the outer face of the door and extend upwardly to lie adjacent to the ends of the pulley-wheel. Thus as the door is moved along the rod the pulley-wheel is moved with it. A chain or other connection is connected at one end to the outer face of the door 7 and is passed upwardly and outwardly over the pulley-wheel and is then brought downwardly and attached to a lever 14, which is bifurcated at its end to form arms 15, which receive between them the ear 16 upon the outer face of the door, a pivot-pin being engaged with the arms and ear, as shown. The outer end of the lever 14 is provided with a weight 17, which holds it normally lowered and assists in counterbalancing the weight of the door in raising the latter. With this construction it will be seen that if the lever 14 is moved downwardly the chain 18 will be drawn downwardly and the door will be raised and swung inwardly into the doorway. As the door is moved into this position its upper edge engages under a cleat 19, which is disposed transversely of the upper end of the doorway, while its lower beveled end engages against a beveled sill 20, thus effecting a tight closure. When the door has been moved into the doorway, as described, it is held in such position by engagement of the lever 14 under a finger 21 upon the outer face of the car, the lever having sufficient sidewise play to permit this engagement and to permit disengagement. The finger 21 is disposed below the car-door, and to hold the lever in engagement therewith a plate 23 is pivoted to the outer face of the door and has an outwardly-extending lug 24, which when the plate is properly moved upon its pivot

rests against the side of the lever, the plate thus acting as a keeper for the lever. The lug 24 has a transverse perforation adapted to register with the perforation in a lug 25 upon the lever 14 to permit engagement of a padlock 26 with the lugs to hold the lever in its locking position. When the padlock has been removed, the keeper-plate may be pivotally moved and the lever then disengaged from the finger, after which it may be raised to permit the door to drop and swing from the doorway. After the door has moved from the doorway it may be moved laterally to uncover the doorway, this movement being limited by stops 28 upon the outer face of the side of the car. When the door is moved to uncover the doorway, it moves behind a retaining device consisting of a lever 30, pivoted between ears 31 upon the outer face of the car-body, this lever having a cam 32 at its inner end for engagement with the face of the door and having a weight 33 at its outer end, which acts to hold the lever with its cam against the door and to press the latter against the outer face of the car-body. To hold the weighted end of the lever raised and the cam from engagement with the car-door, a finger or prop 35 is pivoted thereto and is adapted for engagement with a rest 36 upon the car-body. When the lever 30 is raised, the outward movement of the door is prevented by means of a friction-roller 37, rotatably mounted upon a pin at the outer end of a bracket 38, secured to the car-body.

It will of course be understood that in practice various modifications of the construction shown may be made and that any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

In order to hold the door positively at different points of its sliding movement, a rack in the form of a notched plate 40 may be secured at the lower edge of the door with its teeth disposed downwardly, whereby when the cam 32 is moved inwardly it may engage between the teeth.

A turn-button 41 is pivoted at one side of the doorway and is adapted to turn over the door to prevent outward swinging thereof, and at the opposite side of the door is pivoted a latch 43, having an operating-handle 44, this latch being adapted to engage a notched plate 45, secured to the adjacent jamb of the door, as shown.

What is claimed is—

1. The combination with a car having a doorway of a track disposed transversely of the doorway, a door pivotally and slidably connected with the track and adapted for bodily upward and forward movement to engage the doorway, a lever pivoted to the door, and a flexible connection attached to the door and to the lever and passed over the track.

2. The combination with a car having a doorway, of a track disposed transversely of the doorway, a door pivotally and slidably connected with the track and adapted for bodily upward and forward movement into the doorway, a pulley rotatably and slidably engaged with the track, a lever pivoted to the door, a flexible connection attached to the lever and door and passed over the pulley, and means for moving the pulley slidably with the door.

3. The combination with a car having a doorway, of a track disposed transversely of the doorway, a door having a link pivoted thereto and slidably engaged with the track to permit upward and forward movement of the door, a lever pivoted to the door and having lateral movement, a flexible connection attached to the door and lever and passed slidably over the track, a finger upon the car to receive the lever beneath it and a keeper pivoted to the door for engagement with the lever to hold it beneath the finger, said lever and keeper being adapted to receive a retaining device to hold the keeper operative.

4. The combination with a car having a doorway, of a track disposed transversely of the doorway, a door, links connected pivotally with the door and slidably with the track, a pulley disposed slidably and rotatably upon the track, a lever pivoted upon the door, a flexible connection attached to the lever and door and passed over the pulley, means carried by the door for engagement with the pulley to slide it with the door, means for holding the lever raised to drop the door, means for holding the lever lowered to hold the door raised, and means for holding the door against outward movement when slid to uncover the doorway.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS YOUNG.

Witnesses:

DANIEL W. HEALY,
RALPH M. GEORGE.