April 15, 1924. 1,490,190

D. D. SCOTT

CAR DOOR CONSTRUCTION

Filed June 23, 1923 2 Sheets-Sheet 1

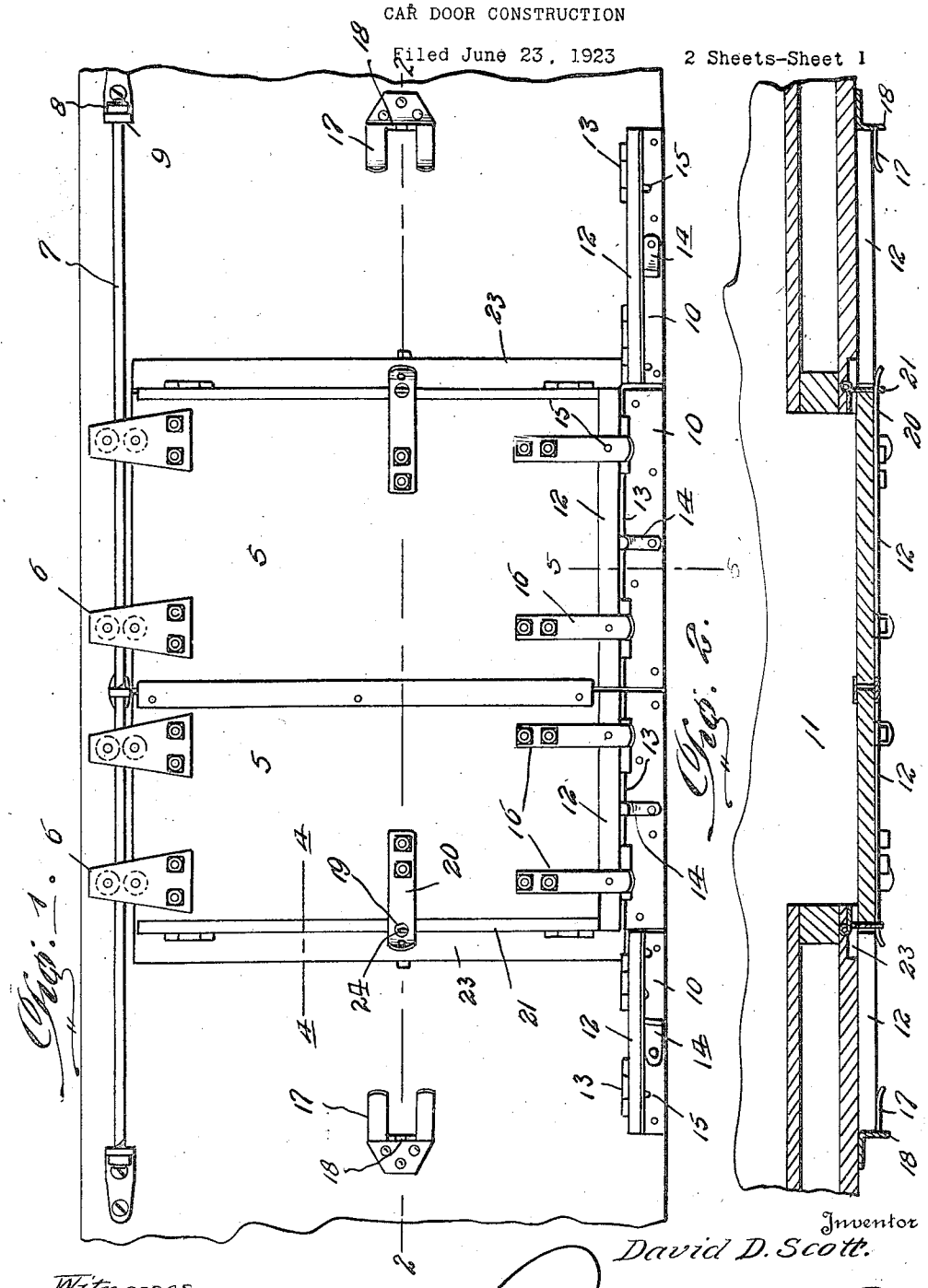

Fig. 1.

Fig. 2.

Witnesses

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Fig. 3.

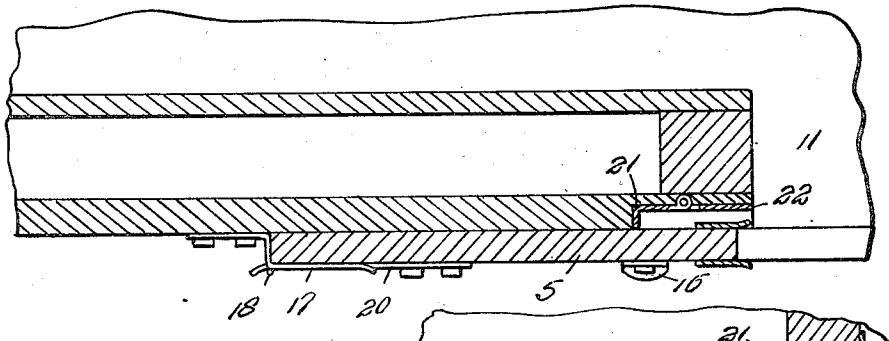


Fig. 4

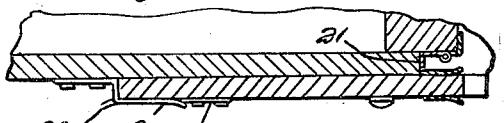


Fig. 7.

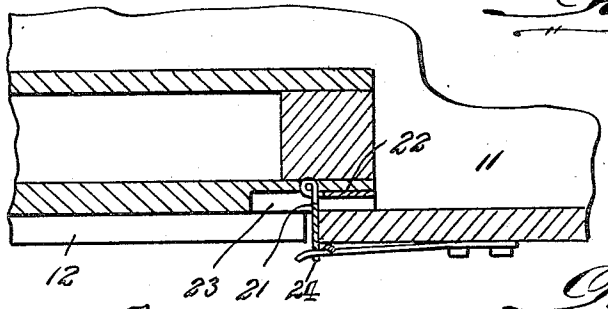
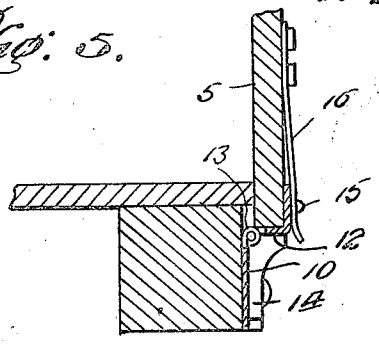
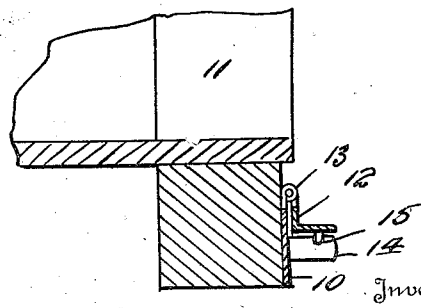


Fig. 6.

Fig. 5.





Witnesses:
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UNITED STATES PATENT OFFICE.

DAVID D. SCOTT, OF MARSHALL, MICHIGAN.

CAR-DOOR CONSTRUCTION.

Application filed June 23, 1923. Serial No. 647,224.

To all whom it may concern:

Be it known that I, DAVID D. SCOTT, a citizen of the United States, residing at Marshall, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Car-Door Constructions, of which the following is a specification.

This invention relates to certain new and useful improvements in car door constructions, and has particular reference to the mounting of sliding car doors, and means for effectively retaining the same in open or closed position.

The primary object of the invention is to provide mounting and securing devices for oppositely sliding car doors, by means of which the doors may be easily opened or closed and effectively retained in either position.

Another object of the invention is to provide means for releasably retaining the doors against outward swinging movement when in either of their closed or opened positions.

The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawings, the invention residing in the construction, combination, and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views, and wherein:

Figure 1 is a fragmentary view of the side of a car provided with doors having securing means and a mounting constructed in accordance with the present invention.

Figure 2 is a horizontal sectional view on line 2—2 of Figure 1.

Figure 3 is an enlarged view similar to Figure 2, showing one of the doors in opened position.

Figure 4 is a horizontal fragmentary sectional view taken on line 4—4 of Figure 1, and drawn on a larger scale.

Figure 5 is a vertical fragmentary sectional view on line 5—5 of Figure 1.

Figure 6 is a view similar to Figure 5, showing the means for holding the doors against outward swinging movement in released position, and

Figure 7 is a view similar to Figure 3, showing a slight modification of the invention.

Referring more in detail to the drawings, the present invention contemplates providing the upper edges of the sliding doors 5 with roller carriages 6, adapted to travel upon a horizontal track 7, which may be in the nature of a rod or a wire cable having a circular cross section, so that the doors may swing outwardly about the track 7 as a pivot. In order to maintain the track 7 in a taut condition, suitable nuts 8 or the like may be threaded upon the ends thereof outwardly of the supporting brackets 9.

It will be seen that car doors may be easily swung outwardly and separated or opened when suspended in this manner, thus overcoming the difficulty in opening doors which have angular track-ways at both the tops and bottoms thereof, which angular tracks become damaged and bent, so as to prevent opening of the doors by binding against the same. It will be understood that means must be provided for effectively retaining the doors against outward swinging movement when brought to their closed or opened positions, and that it is highly desirable to provide means, which, at the same time, will releasably retain the doors opened or closed, as the case may be. For this purpose, I have provided strips 10, which are rigidly fastened against the side of the car in end to end relation, directly beneath the door opening 11, and at either side thereof, which strips have suitable angle iron members 12 hinged to the upper edges thereof as at 13, so that when these angle members are swung upwardly, their flanges respectively engage the lower edges of the doors, and the outer surfaces of the doors adjacent and along said edges, as shown in Figure 5. Turn buttons 14 are pivoted to the strips 10, so as to be swung upwardly for retaining the members 12 in upwardly swung position, whereby the doors are effectively held against outward swinging movement, it being understood that the doors may be readily released upon swinging the turn buttons downwardly as illustrated in Figure 1. For initially holding the angular door retaining members 12 in upwardly swung position, they are provided with outstanding studs 15 upon the free flanges thereof, adapted to snap into suitable apertures provided in the free ends of depend-

ing resilient latch strips 16, which are fastened at their upper ends to the lower portions of the doors.

From an inspection of Figures 1 and 2, it will be seen that a door retaining member 12 is provided for each of the doors to engage the latter at their closed positions, and additional retaining members are provided to engage each door when in their open positions.

It is essential that the doors be effectively retained in open position and held against outward swinging movement when opened, and for this purpose, resilient keeper plates 17 are attached to the side of the car, so that the doors will move beneath the same as they are opened, said strips comprising a pair of spaced fingers with out-turned ends, whereby the doors may readily pass therebeneath, and having outstanding lugs 18 between the fingers adapted to enter the apertures 19 in the free ends of further resilient latching strips 20, which are fastened in a horizontal position adjacent the outer edges of the doors.

In operation, assume that the doors are closed as shown in Figure 1, and that it is desired to open the same, this may be readily accomplished by swinging the turn buttons 14 downwardly, and then snapping the lugs 15 out of the openings of the latch strips 16. The door retaining members 12 will then swing downwardly to the position shown in Figure 6, so as to allow the operator to swing the doors outwardly a slight distance in order that free movement of the doors may be had to a partially opened position. The doors are then further opened by sliding the same under the resilient fingers of the keeper plates 17 until the latch plates 20 engage the lugs 18 thereof. The end retaining strips 12 are then swung upwardly to engage the lower edges of the doors, and with their lugs 15 engaged with the strips 16. The turn buttons 14 of the end strips 12 are then swung upwardly and the doors are effectively retained in an opened position, and against outward swinging movement.

Referring to Figures 2, 3 and 4, additional means is provided for retaining the doors in their closed position, which means embodies angular retaining strips 21, which are hinged to plates 22, the plates 22 being suitably fastened to the sides of the car at the opposite sides of the car doors. The sides of the car are provided with recesses 23, into which the retaining members 21 may be swung when disengaged from the doors, so that the same will be out of the path of movement of the doors while being opened. The retaining members 21 are provided with outstanding lugs 24, which are adapted to engage the resilient latch strips 20, so that the retaining members 21 are in engagement with the vertical edges of the doors in a manner similar to that described above, with respect to the retaining members 12. Of course, the strips 20 will have to be disengaged from the retaining members 21, and the latter will have to be swung out of engagement with the doors, before they may be opened.

In the form of the retaining strip shown in Figure 7 of the drawing, the retaining member 21 is narrower than that shown in Figure 3 and consequently when the door is slid outwardly, it is moved for a shorter distance than that in which it is moved in conjunction with the form shown in Figure 3. In either instance, the outward movement of the door is sufficient to cause the inner surface thereof to clear the exterior surface of the side of the car body when it is desired to move the door.

From the foregoing description, it is believed that the construction and operation, as well as the advantages of the present invention will be readily understood and appreciated by those skilled in the art.

Minor changes may be made in the invention without departing from the spirit and scope of the invention as claimed.

Having thus described my invention, what I claim as new, and desire to secure by Letters-Patent, is:

In combination with a car body provided at its side with a door opening, a track mounted upon the body above the door opening, a door having carriages adapted to travel upon the track, a retaining strip mounted upon the body at the side edge of the door opening and having a portion adapted to engage behind the edge of the door to hold the same in position over the opening, a catch member carried by the door and engageable with the retaining strip to lock the door in position over the opening, resilient strips carried at the lower portion of the door and provided with openings at their free end portions, an angular member hingedly mounted on the side of the body beyond the edge of the door opening and below the lower edge of the door and adapted to be swung in an upward direction to receive the lower edge portion of the door when the door is moved to an open position with relation to the door opening, said angular member being provided with studs which are outwardly disposed when the angular member is swung to an upper position, the openings in the latch strips adapted to receive said studs, and a button pivotally mounted upon the car body and engageable with the lower side of the angular member and adapted to hold the same in an elevated position and retain the studs in the openings of the latch strips.

In testimony whereof I affix my signature.

DAVID D. SCOTT.