No. 695,836. Patented Mar. 18, 1902.

H. J. RHODES.

CAR DOOR.

(Application filed Aug. 23, 1901.)

(No Model.)

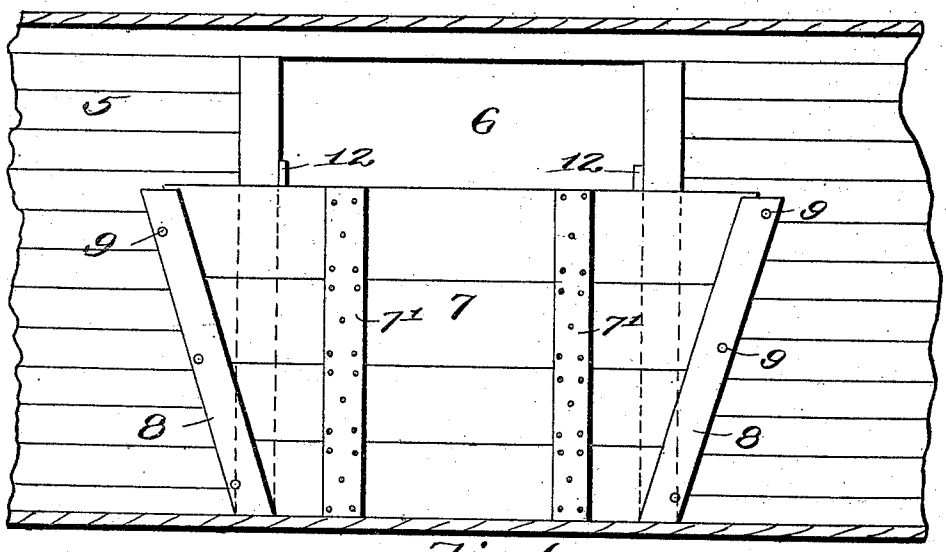

Fig. 1.

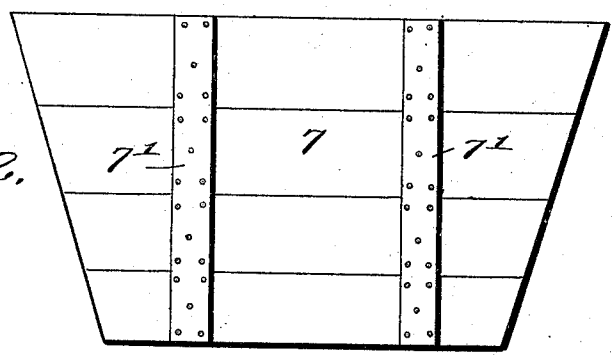

Fig. 2.

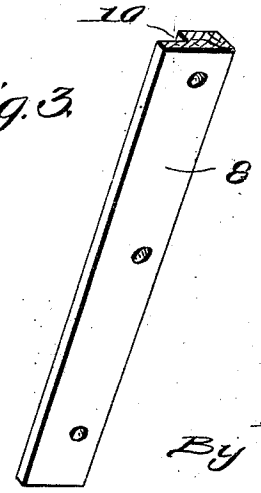

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

HERVEY J. RHODES, OF EAST ST. LOUIS, ILLINOIS.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 695,836, dated March 18, 1902.

Application filed August 23, 1901. Serial No. 73,042. (No model.)

To all whom it may concern:

Be it known that I, HERVEY J. RHODES, a citizen of the United States, residing at East St. Louis, in the county of St. Clair and State of Illinois, have invented new and useful Improvements in Car-Doors, of which the following is a specification.

This invention relates to car-doors, and more especially to that kind which are located within freight-cars, whether the latter be employed for carrying grain, live stock, merchandise, or anything of a similar kind, for the invention is in no wise limited to any particular use.

My improvements involve a car combined with a door inside the same, the door being confined in place by a pair of diagonal cleats or stays suitably held in place and which diverge from the bottom toward the top of the car and the lower ends of which are in proximity to the door-opening. These cleats are grooved upon the inner faces thereof to receive the door, while the inner edges of the outer faces of the cleats are inclined, and the opposite edges of the door are correspondingly inclined, and the cleats are free of door-holding means. When the door is in its normal position, it rests upon the floor of the car and is received within the grooves of the cleats, and by virtue of the construction pointed out it is necessary to lift the door but a very short distance to carry it free of the cleats, at which time it can fall inward. It will be evident, therefore, that the upper edge of the door when shut can be brought nearly to the roof of the car, thereby materially increasing the effective capacity of the same. In fact, the car can be practically completely filled, which is a matter of prime importance when it is remembered that ordinarily grain-cars are only loaded to a height of about four feet from the floor.

Other objects and advantages of the invention will appear in the following description, while the novelty thereof will form the basis of the appended claim.

The invention is clearly represented in the accompanying drawings, wherein—

Figure 1 is a sectional inside face view of one wall of a car with the door in its closed position. Fig. 2 is a face view of the door. Fig. 3 is a perspective view of one of the cleats.

Like characters refer to like parts in all the figures of the drawings.

I desire to state at this point that the invention is not limited in its application to any particular style of car, though it is of peculiar utility in conjunction with those for carrying grain, nor to any dimensions nor material.

In the drawings, Fig. 1, the numeral 5 indicates one side or wall of a freight-car, the same having the usual door-opening 6, by which said car can be loaded and unloaded and which is shown as being of rectangular form. The door which when shut covers said opening or practically covers the same is denoted by 7, and it will be seen that its edges are inclined, they diverging toward the top, and I find an inclination of two inches to the foot a desirable one. The door is shown as consisting of boards held together by transverse strips, as 7′, though it may be of other constructions. The door when in its normal or shut position rests upon the bottom of the car and is held against displacement by a pair of cleats, as 8, which diverge toward the top of the car, their inclination agreeing with that of the edges of the door 7. The cleats can be fastened to the framing of the car by bolts, screws, or other fastening devices, as 9, and they have upon their inner faces open grooves, as 10, which serve as ways to receive the door, the latter overlapping or resting against the car frame or wall, so as to be held against outward displacement, while opposite motion is normally prevented solely by the overhanging portions of the cleats. The cleats themselves serve as the sole means for normally preventing inward movement of the door, and it will be seen that the inner edges of the cleats and the bottoms of their grooves are inclined to exactly agree with that of the door, by virtue of which and also of the fact that the cleats serve as sole means for normally preventing inward displacement of the door it is found that a very slight vertical motion is necessary to carry the door beyond the restraint of the cleats, at which time said door can be pushed inward, and this action is aided by the fact that the grooves are of

such depth relatively to the inclination of the respective cleats that the door need be elevated only a trifling distance to bring the opposite inclined edges of said door in line with the inner and correspondingly-inclined edges of the cleats, at which time the door will be released. The upward motion of the door can be secured by a pinch-bar or in any other convenient manner. In this way the door when down can have its upper edge practically within a few inches of the top of the car, so that practically the entire carrying capacity of the latter can be utilized. The door, therefore, is in the nature of a permanent one, though not a fixture, and it can be quickly placed in position without the necessity of nailing it to the side of a car, and the inclined cleats 8 form a solid bearing for said door.

The door can be made of the same material as the ordinary doors without additional expense. It is a saver of time and labor, for an unskilled mechanic can equip ten cars with the improved door as quickly as he can one with a door of the usual kind, and as the improved door is not nailed in place the woodwork of the car is not injured in putting it in place.

Means are provided to hold the door normally against upward motion, and the same is shown as consisting of a pair of blocks, as 12, suitably fastened to the door-frame and bearing against the upper edge of the door. Other means, however, can be employed for this purpose. When these blocks are taken off, the door can be lifted to free it from the cleats, and a movement of about six inches will accomplish this result, at which point the grain in the car will rush out through the opening between the lower edge of the door and the bottom of the car and will cause said door to fall inward.

Having described the invention, I claim—

The combination of a car having a door-opening, diagonally-disposed cleats upon the inside of said car, said cleats diverging toward the top of said car and the lower ends thereof being in proximity to said opening, and having grooves right-angular in cross-section and open upon the sides next said car, and a door fitted in said grooves and the cleats serving as the sole means to prevent inward displacement of said door when the same is down and the inclination of the inner edges of the cleats and the grooves in said cleats exactly agreeing with that of the door and the outer surface of the door resting against the inner surface of the car, and the opposite edges of said door being at right angles to the outer and inner surfaces thereof, and said door consisting of a plurality of boards and transverse strips fastened to the inside faces of the boards and the depth of said grooves being such relatively to the inclination of the cleats that when the door is elevated a short distance the opposite inclined edges of said door will be brought into alinement with the inner and correspondingly inclined edges of the cleats to thereby effect the release of said door.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HERVEY J. RHODES.

Witnesses:
D. A. BEEKEN,
F. E. ABELL.