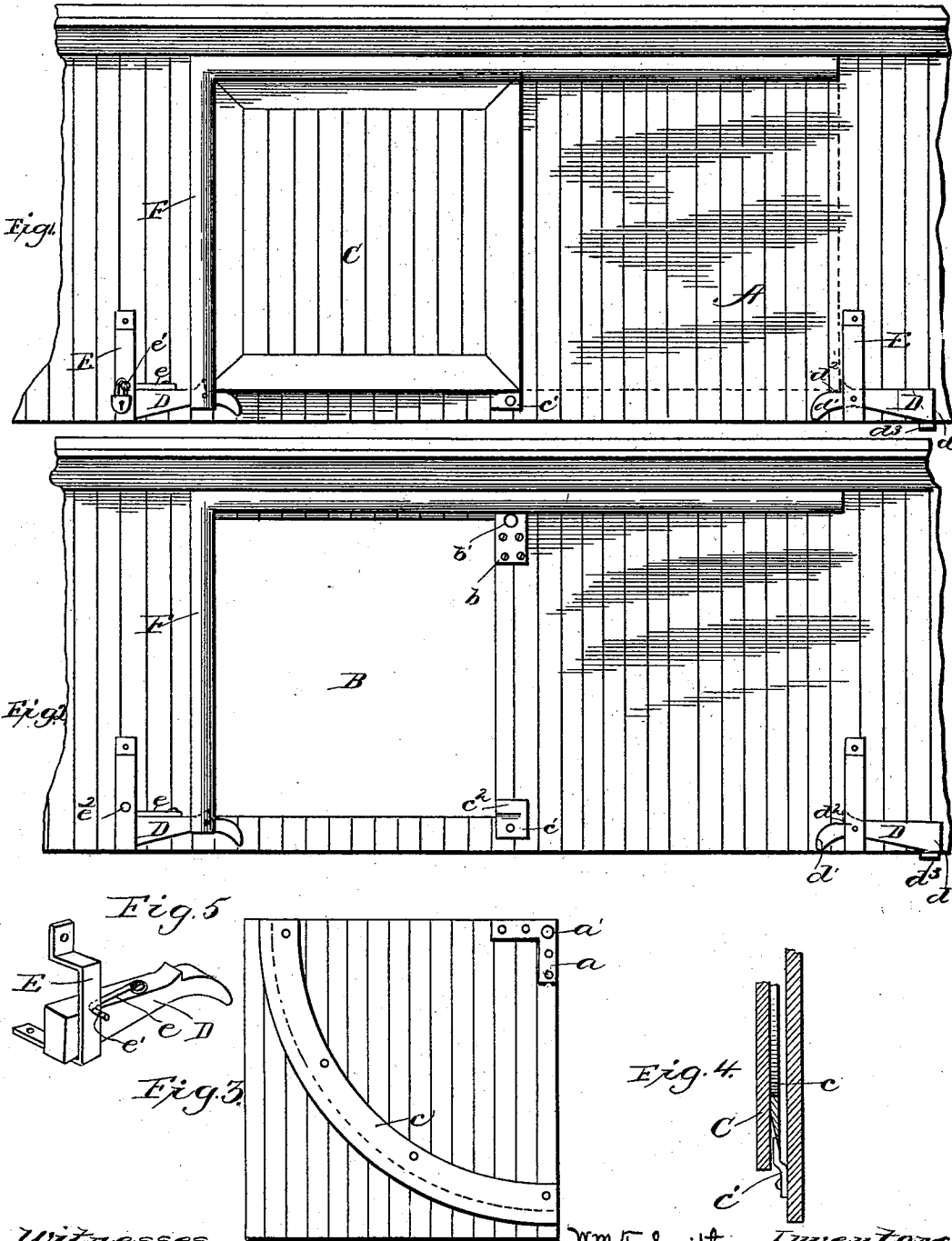


(No Model.)

W. T. SMITH & J. C. HARTMAN.
CAR DOOR.

No. 544,133.

Patented Aug. 6, 1895.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM T. SMITH AND JOHN C. HARTMAN, OF CRESTON, IOWA.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 544,133, dated August 6, 1895.

Application filed December 8, 1894. Serial No. 531,238. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM T. SMITH and JOHN C. HARTMAN, citizens of the United States, residing at Creston, in the county of Union and State of Iowa, have invented certain new and useful Improvements in Car-Doors; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to an improvement in car-doors and particularly to that class of doors known as "swinging doors," and it consists in the peculiar combination, construction, and arrangement of parts hereinafter described, and more definitely pointed out in the subjoined claims.

The object of the invention is the provision of a car-door which shall be simple, durable, easy of manipulation, and secure. These objects are attained by the construction shown in the accompanying drawings, where like letters of reference indicate corresponding parts in the several views, and in which—

Figure 1 is a side elevation showing door closed in full lines and open in dotted lines. Fig. 2 is a view of part of car with door removed. Fig. 3 is a view of the inner face of car-door detached, and Fig. 4 is a sectional view of the guiding means. Fig. 5 is a perspective view of the locking means detached.

In the drawings, A represents the car, B the opening in the car, and C the door. To the inner face of the door at its upper right-hand corner is bolted a plate *a*, which may be either square or L-shaped, to which is attached a pivot or bolt *a'*. A second plate *b*, provided with a thimble *b'*, adapted to register with a circular opening in the car A, is bolted or screwed to the car A near the upper right-hand corner of the opening B. The pivot *a'* is inserted within the thimble *b'*, and may be secured on the inside. Secured to the inner face of the door and extending from the upper left-hand corner to the lower right-hand corner of the same is a plate *c*, curved in the arc of a circle with its outer edge beveled and adapted to engage with a third plate *c'* affixed to the car and near the lower right-hand corner of the opening B, said plate *c'* having its upper end free and bent so as to form a

groove *c²* between it and the car A. By this construction the plates *c* and *c'* guide the door when it is swung on its pivot and prevent it from swaying. Gravity-catches D are pivotally secured to the car A, one near the lower left-hand corner of the opening B and the other at a point sufficiently distant in the opposite direction to permit of the door C being swung nearly open before striking it. One end of these catches, as at *d*, are made larger and heavier and may be further weighted to resist the downward pressure of the door. A stop *d³* prevents the heavy end of the catch D from falling too far. The small end of the catch is curved downwardly, as at *d'*, and has a shoulder *d²*, against which the edge of the door when in engagement with either of the catches rests. The curved end is used because it facilitates the movement of the door up or down on the catches. Braces E serve as additional means for retaining the catches in position and as protection from injury.

The catch on the left-hand side of the opening B has secured to its upper face a hook *e*, provided with an aperture *e'* in its end. When the door is closed and it is desired to lock or seal the same the hook *e* is pushed outwardly and through an opening *e²* in the brace E and a seal or lock inserted in the aperture *e'* in the hook *e*.

A beveled molding F is secured to the side of the opening B on the upper and left-hand side, that on the upper side being relatively longer, thus forming a frame for the door. The door being also beveled on those sides the two unite in forming a perfectly tight joint.

By the construction shown and described it will be readily apparent that a door of this character can be very easily operated from the ground. To open the car, after breaking the seal, it is only necessary to force the hook *e* out of engagement with the brace E and to push the free end of the catch D upward. The door being thereby released will swing, of its own weight, half-way open, and a very slight exertion is necessary to force it into engagement with the catch on the opposite side, where it is securely held until it is desired to reclose the car, when the operation is repeated and the car is again tightly closed and may be sealed or locked as before.

The guide-plates cause the door in opening to describe the arc of a circle, thereby permitting any thing which may have fallen against the door to drop down and out.

- 5 It is evident that many minor changes in the construction and arrangement of the several parts may be made without departing from the spirit of the invention.

Having fully described the invention,
10 what is claimed is—

1. The combination with a pivoted car door, and a pivoted locking catch for the same, of a frame adjacent to said catch, and a hook on said catch designed to engage said
15 frame, for the purpose specified.

2. The combination with a car door pivoted at one corner, of pivoted catches for locking the door in open and closed position respectively, each of said catches having a
20 shouldered and reduced end for engaging a corner of the door and its other end weighted, and stops for limiting the extent of the downward movement of said weighted ends of the catches, substantially as described.

- 25 3. The combination with a pivoted car door and a pivoted locking catch for the same, of a frame adjacent to said catch, said frame having a perforation, and a hook on said

catch, designed to extend through said perforation in the frame and having in its end a
30 perforation to receive a seal or lock, substantially as described.

4. The combination with a pivoted car door and a pivoted locking catch therefor, said catch having a weighted free end, of a
35 frame having its end in the path of the downward movement of said weighted end of the catch so as to form a stop therefor, said frame being formed with a perforation, and a hook pivoted upon said catch and designed to extend
40 through said perforation, substantially as described.

5. The combination of a door pivoted at one corner, a pivoted catch for engaging a corner of said door, a frame adjacent to said catch,
45 said frame being formed with a perforation, and a hook pivoted upon said catch and designed to extend through said perforation, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM T. SMITH.
JOHN C. HARTMAN.

Witnesses:

HUGH E. SMITH,
NELLIE J. KNOTTS.