

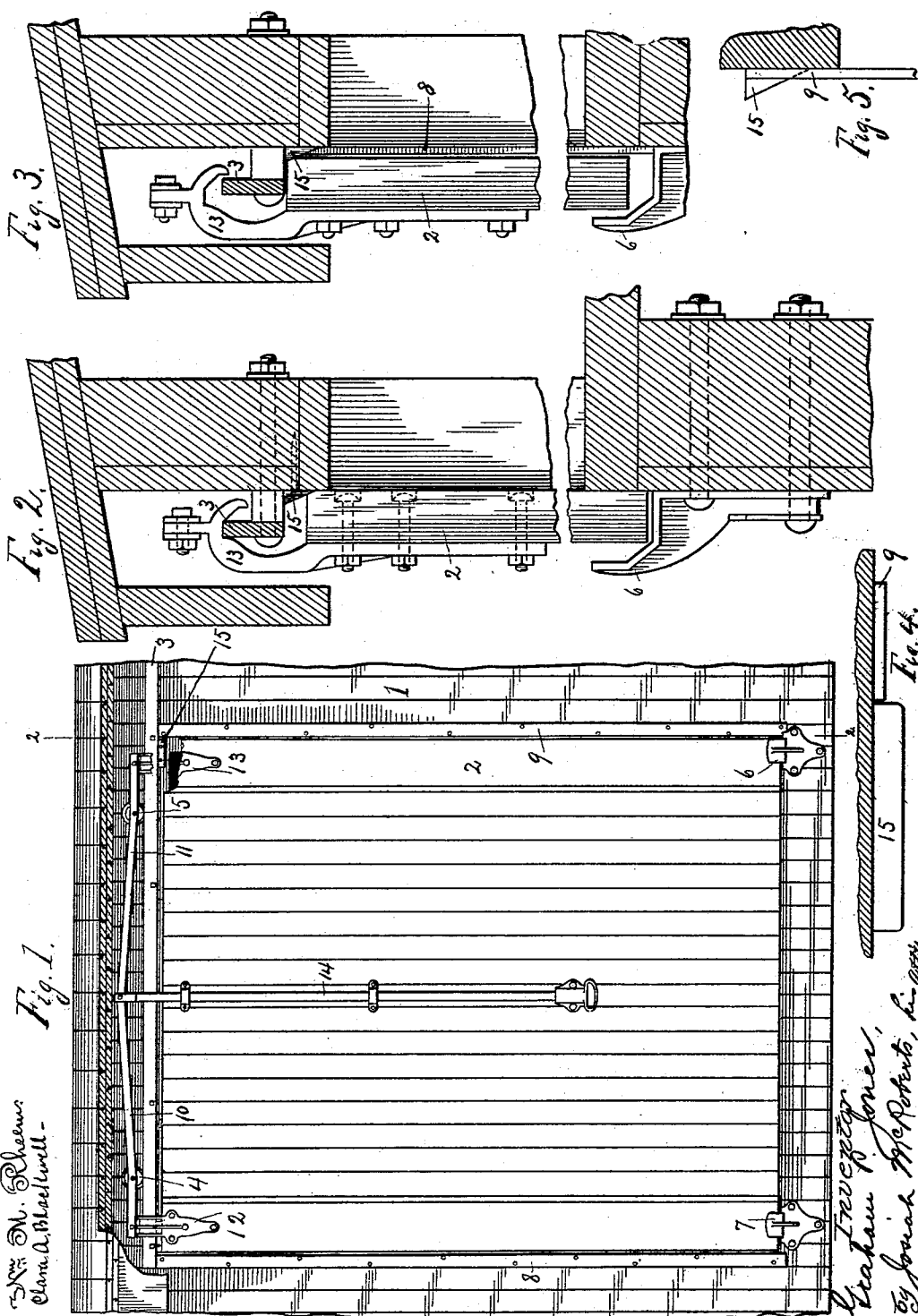
No. 623,283.

Patented Apr. 18, 1899.

G. P. JONES.
CAR DOOR.

(Application filed Sept. 20, 1898.)

(No Model.)



Witnesses.
S. M. Phelps
Chas. A. Blackwell

Invention
Graham P. Jones,
by Joseph McPeters, Jr. atty.

UNITED STATES PATENT OFFICE.

GRAHAM P. JONES, OF CHICAGO, ILLINOIS.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 623,283, dated April 18, 1899.

Application filed September 20, 1898. Serial No. 691,475. (No model.)

To all whom it may concern:

Be it known that I, GRAHAM P. JONES, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification.

My invention relates to car-doors, and particularly to that class of car-doors in which devices are provided for making the doors cinder and weather proof.

The object of my invention is to provide certain improvements in car-doors of this description, which object I accomplish as illustrated in the drawings and as hereinafter set forth.

In the accompanying drawings, which form a part of this specification, Figure 1 is a partial side view of a car, certain portions being broken away, illustrating my improvements. Fig. 2 is an enlarged vertical section on the line 2 2 of Fig. 1, showing the door in its normal position. Fig. 3 is a section similar to Fig. 2, showing the door in its raised position ready for movement; and Figs. 4 and 5 are details of the wedge or incline.

In the drawings, the numeral 1 indicates the side of the car, 2 the car-door, and 3 the top rail, adapted to receive the sheaves 4 and 5, which support the door when it is moved.

6 indicates a cam-bracket having an inner inclined face by which the door is forced laterally against the side of the car when at rest, and 7 a supporting-bracket which may or may not be similar to the bracket 6.

8 and 9 indicate suitable cleats or strips, preferably metallic, permanently attached to the side of the car adjacent to the door-opening, the cleat 9 being upon the run side or the side in the direction in which the door moves to uncover the opening. These cleats are of course set back a slight distance from the inside edges of the door-opening, and the distance between them is slightly greater than the width of the door.

The sheaves 4 and 5 are journaled in the levers 10 and 11, respectively, which are hinged at their opposite ends to cam-hangers 12 and 13, secured, respectively, at the upper corners of the car-door and extending inwardly over

the rail 3, the ends of the levers 10 and 11 being connected by an operating-rod 14, provided with a suitable handle.

The wedge 15 is arranged at the upper right-hand corner of the door-opening, adjacent to cleat 9, as shown in the drawings, and has an inclined outer face. The upper edge of the incline projects laterally beyond the face of the cleat, for a purpose to be hereinafter fully described.

The car-door normally rests upon one or both of the brackets 6 and 7 and the cam-hangers 12 and 13. The inclined faces of these parts carry the door obliquely against the side of the car or the door-jambs, according to its position with relation to the door-opening. When the door is in this position over the door-opening, its top edge is approximately in line with the lower edge of the cleat or incline 15, as shown in Fig. 2. When it is desired to move the door, the operator takes hold of the handle of the rod 14 and by a downward pull raises the door by means of the levers, the journals of the sheaves resting on the top rail serving as fulcrums. As the door is raised by the levers its upper right-hand corner passes over the inclined face of the wedge. When it reaches its raised position, the lower edge of the door swings outwardly into line with the top, this movement being permitted by the increased width of the top of the cam-bracket. As the upper edge of the wedge projects laterally beyond the outer face of the cleat, the door will clear the cleat when the operator shifts it along its track by reason of the upper edge of the cleat 15 projecting beyond the face of the cleat 9. While in this raised position the door may be freely moved back and forth without any danger of contact with cleat 9, its inner face being slightly beyond the plane of the outer face of the cleat. When it is again moved over its opening and the handle released, the door will drop upon its brackets and cam-hangers back into its normal position between the cleats 8 and 9, and snug against the door-jambs, owing to the cam action of the bracket and hangers.

The opening between the door and the cleat 9, when the former is in its normal closed position,

sition, is sufficient to allow the free lateral movement of the door caused by the wedge or incline 15.

From a consideration of the foregoing it will be apparent that the door in its normal closed position rests against the protecting strip or cleat, which makes it practically cinder and weather proof, and that at the initial action of the operating mechanism the door moves laterally or obliquely away from the side of the car a distance sufficient to clear the cleat 9, so that the operator may move it to clear the door-opening. By providing such a structure the cleat 9 may be permanently secured to the car, obviating all the inconvenience and objections of having to attach a temporary cleat every time the car is used.

The cleat 8 at the stop side of the opening may of course be replaced by any suitable stop, and any other suitable arrangement of lifting and lowering mechanism may be employed without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a car having a cleat upon the run side of its door-opening, of a sliding door, mechanism for lifting and lowering it to and from its sliding position, and means for moving it laterally away from the body of the car when lifted, substantially as described.

2. The combination with a car having a cleat upon the run side of its door-opening, of a sliding door, mechanism for lifting and lowering it to and from its sliding position, and means in the path of the door to bring the inner face of the door beyond the plane of the outside face of the cleat when the former is raised, substantially as described.

3. The combination with a car having a cleat upon the run side of its door-opening, of a sliding door, mechanism for lifting and lowering it to and from its sliding position, and means operating upon the inner face of the door whereby the door is moved laterally as it is raised so that it will clear the cleat when operated, substantially as described.

4. The combination with a car having a cleat upon the run side of its door-opening, of a sliding door, mechanism for lifting and lowering it to and from its sliding position, and a wedge to force it outwardly as it is raised, substantially as described.

5. The combination with a car having a cleat upon the run side of its door-opening, of a sliding door, mechanism for lifting and lowering it to and from its sliding position, and a wedge having an inclined outer face to force it laterally when raised, substantially as described.

6. The combination with a car having a cleat upon the run side of its door-opening,

of a sliding door, mechanism for lifting and lowering it to and from its sliding position, and a wedge arranged above the door, substantially as described.

7. The combination with a sliding car-door, a track attached to the side of the car, and a cleat on the run side of the door-opening levers provided with sheaves to run on the track, for raising and lowering said door, and inclines for carrying said door when lowered against the side of the car and when raised away from the side of the car, substantially as described.

8. The combination of a sliding car-door, a cleat on the run side of the door-opening a rail from which the door is suspended when operated, sheaves running on the rail, levers in which the sheaves are journaled and by which the door is raised and lowered, hangers to which the levers are pivoted provided with inclines for carrying the door against the car when lowered, and an incline for carrying the door away from the car when raised, substantially as described.

9. The combination of a sliding car-door, a cleat on the run side of the door-opening a rail, levers for raising and lowering the door, sheaves journaled in the levers by which the door is supported when raised, cam-hangers to which the levers are pivoted and which support the door against the car-body when it is lowered, and a wedge to carry the door away from the car-body as it is raised, substantially as described.

10. The combination with a car-door having a cleat on the run side of its door-opening normally resting on cam-hangers and brackets, and a rail from which it is suspended when operated, of sheaves running on the rail, levers for raising the door to operative position, and a wedge in the path of the door as it is raised to move it laterally, substantially as described.

11. The combination with a car having a cleat upon the run side of its door-opening, of a sliding door, mechanism for lifting and lowering it to and from its sliding position, an incline operating upon the door as it is raised to move it laterally so that it will clear the cleat when operated, substantially as described.

12. The combination with a car having a cleat upon the run side of its door-opening, of a sliding door, mechanism for lifting and lowering it to and from its sliding position, and an incline interposed between the car and the door whereby the door is moved laterally as it is raised so that it will clear the cleat when operated, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GRAHAM P. JONES.

Witnesses:

G. J. M. PORTER,
BELDEN D. JONES.