

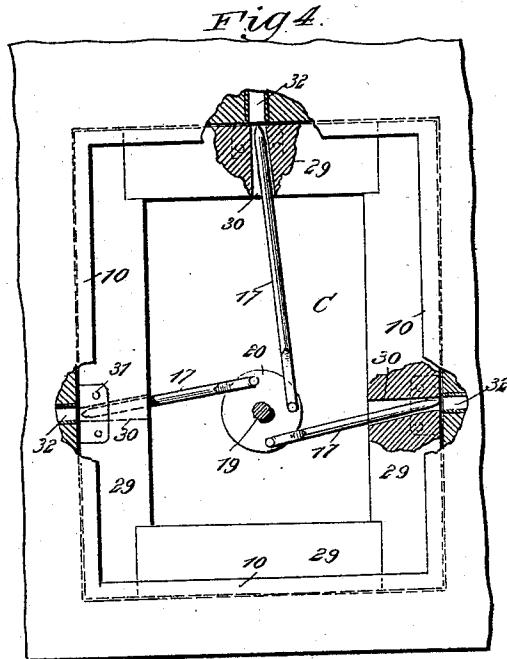
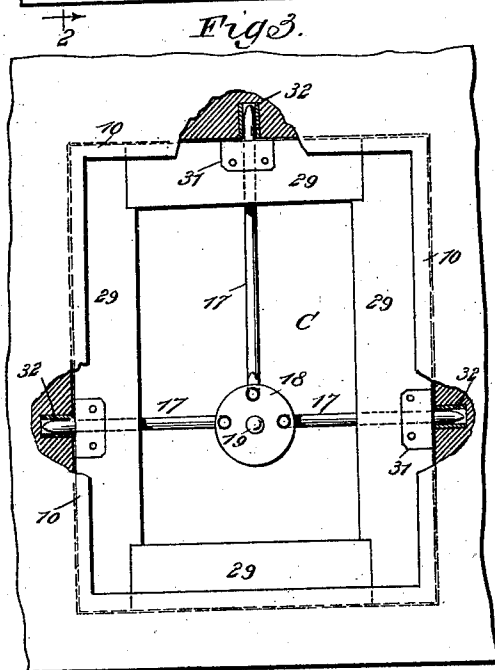
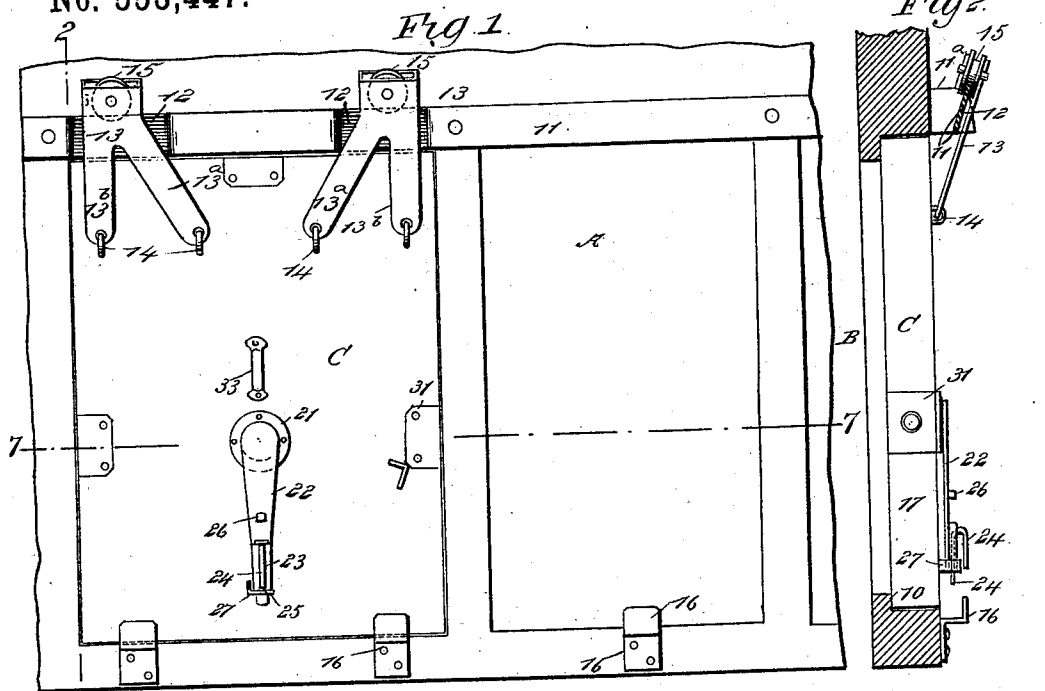
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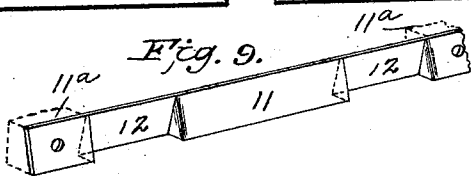
T. W. BRADMAN & H. HINES.
CAR DOOR.

No. 553,447.

Patented Jan. 21, 1896.



WITNESSES:
Paul J. ...
John A. ...



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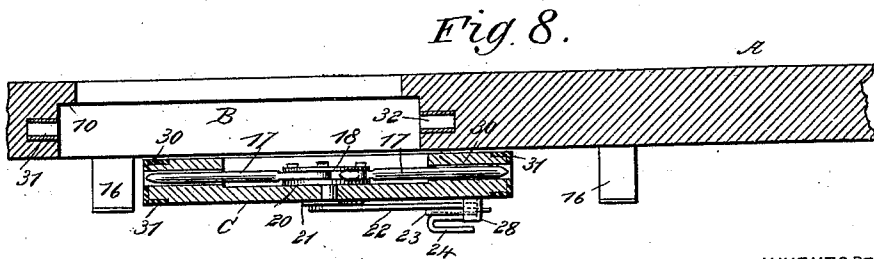
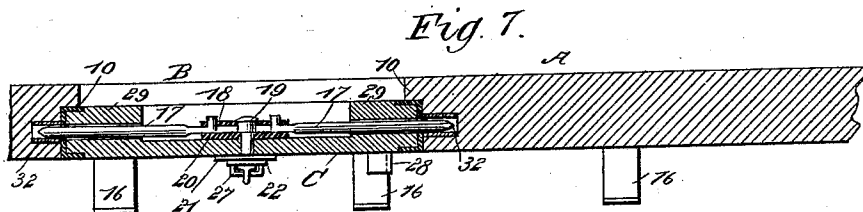
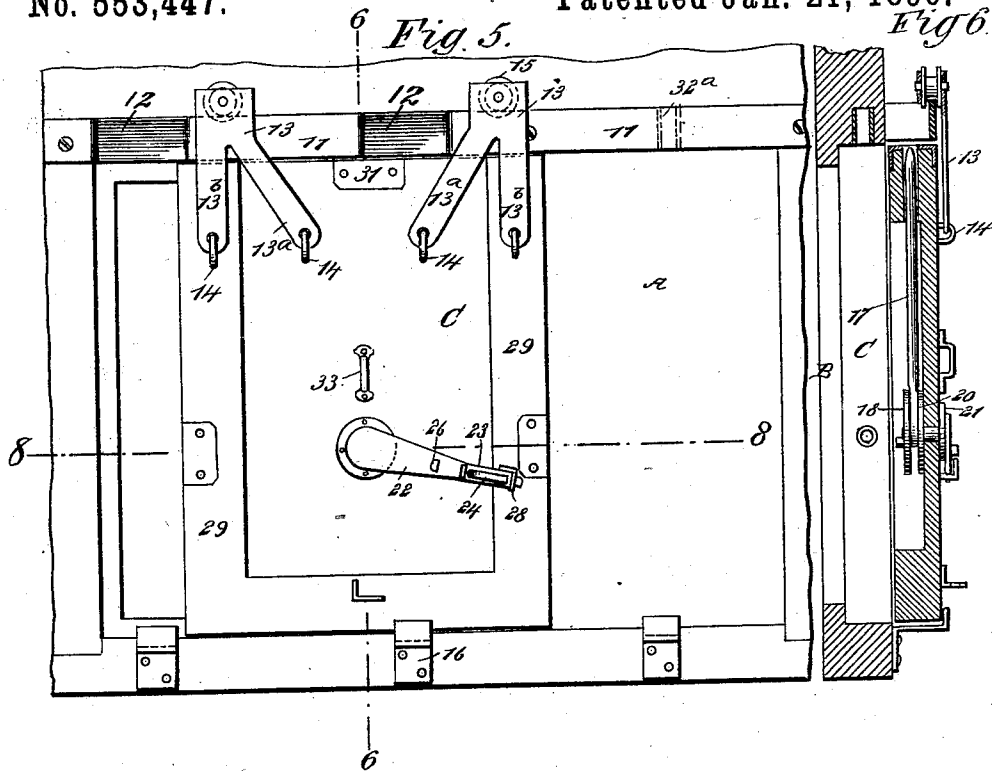
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UNITED STATES PATENT OFFICE.

THOMAS W. BRADMAN AND HARRISON HINES, OF BEARDSTOWN, ILLINOIS.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 553,447, dated January 21, 1896.

Application filed June 12, 1895. Serial No. 552,535. (No model.)

To all whom it may concern:

Be it known that we, THOMAS WARDELL BRADMAN and HARRISON HINES, of Beardstown, in the county of Cass and State of Illinois, have invented a new and useful Improvement in Car-Doors, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in car-doors, and especially to an improvement in doors for freight-cars, the object of the invention being to so construct the car-door as to afford safety to the operator, protection to property in transportation from theft, fire, and water, ease of operation and economy in production and maintenance.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a portion of a car-body and the improved door, the latter being in a closed position. Fig. 2 is a vertical section through the car-body and the opening closed by the door, the section being taken on the line 2 2 of Fig. 1. Fig. 3 is an inner face view of the door and the surrounding portion of the car-body, the bolts in the door being in their locked position. Fig. 4 is a view similar to Fig. 3, the bolts being in unlocked position and portions of the door being broken away to illustrate the formation of the opening in which the bolts play, the actuating-plate for the bolts being removed. Fig. 5 is a partial side elevation of the car-body and the improved door, the latter being partly open. Fig. 6 is a vertical section through the body and the door, the door being open and the section taken substantially on the line 6 6 of Fig. 5. Fig. 7 is a horizontal section taken substantially on the line 7 7 of Fig. 1, and Fig. 8 is a corresponding section taken practically on the line 8 8 of Fig. 5. Fig. 9 is a detail perspective of the track.

In carrying out the invention, a track 11 is located on the side of the body A of the car above the opening B therein adapted to be closed by the door C, which is a sliding door. The track 11 is held a predetermined distance

in advance of the side of the car-body by means of suitable blocks 11^a, and the track is straight throughout its length, except at each side of the said door-opening B, at which points the track is bent inwardly at its lower edge so as to form gradually-deflected portions 12, as shown in Figs. 1, 2, and 5.

The door-opening B is provided with a marginal shoulder or stop 10 at the inside of the body of the car, against which the inner marginal face of the door has bearing when the door is closed, and when the door is in this position, as illustrated in Fig. 2, its outer face will be flush with the outer face of the side of the car, or practically so, and the opening will be closed against the admission of water, fitting so closely as to prevent instruments being introduced to pry the door open or tamper with the locks.

The door is supported in its open position or when uncovering the opening B by means of hangers 13. These hangers may be of any approved construction. Usually, however, they are made as illustrated in the drawings, in which their lower ends are shown bifurcated, forming two members 13^a and 13^b, and these members have a hinged connection with the outer face of the door. This connection is ordinarily obtained through the medium of eyebolts 14 secured to the door, the members of the hangers being apertured to receive the eyes of the bolts. At the upper portion of the hanger a peripherally-grooved wheel 15 is mounted, the wheels being adapted to travel on the track 11. When the door is closed, or introduced into the opening B to a proper bearing against the shoulder 10 in the opening, the hangers will assume a downwardly and inwardly inclined position, (illustrated in Fig. 2,) the deflected portions 12 of the track being provided for this purpose, and as soon as the door is liberated or unlocked it will naturally gravitate outward until the hangers have assumed the vertical position shown in Fig. 6, at which time the door will have been brought outward to such an extent that its inner face will be out of the plane of the outer side surface of the car-body, permitting the doors to be readily pushed backward or run along the track to any point desired, the lower ends of the door being guided through the medium of angle-brackets 16, secured near

the lower edge of the body; or if in practice it is found desirable a continuous angle or sunken track may be employed to receive the lower portion of the said door.

5 Preferably three bolts 17 are employed to effect the locking of the door. These bolts extend from practically the central point of the door, two of them horizontally in opposite directions, while the third bolt extends
10 upward to the top of the door. The bolts have crank-arms formed at their inner extremities, said arms being pivoted in an actuating-plate 18 of disk shape, the said plate being secured upon or held to turn with a
15 spindle 19, which extends through the door from face to face, as shown in Fig. 7, wear-plates 20 and 21 being secured respectively to the inner and the outer faces of the door around the opening in which the spindle
20 turns, and ordinarily a cotter-pin is employed to hold the actuating-plate in position on the spindle, so that the plate may be readily removed at any time to repair the bolts or lock if necessary.

25 A crank-handle 22 is attached to or formed integral with the outer end of the spindle 19, and this crank-handle is provided near its lower end with a slideway 23, in which a seal-finger 24 has sliding movement, being provided with an aperture 25 at its lower end for
30 the attachment of a seal, and the crank-handle is further provided with a stop 26, limiting the upward movement of the seal-finger.

A bracket 27 is formed on the door near its
35 lower edge within convenient reach of the ground, and a second bracket, 28, is located near one side. When the handle 22 is in the perpendicular position, (shown in Fig. 1,) the actuating-plate will have been rotated in a
40 direction to force all of the bolts outward beyond the edges of the door and into suitable keepers in the wall of the door-opening. The seal-finger is then passed through a suitable opening in the bracket and the seal applied
45 to its lower edge.

When the handle is carried to the substantially-horizontal position, (shown in Fig. 5,) its seal-finger is made to lock with the side bracket 28, and the actuating plate or disk
50 18 will have then been turned to carry the bolts to the position shown in Fig. 4, throwing their inner ends off the center and drawing their outer ends within the marginal surface of the door, consequently holding said
55 bolts in their unlocked position.

An inner marginal raised surface 29 is pro-

vided for the door C, as shown in Figs. 3 and 4, and in the top and sides of this raised portion of the door openings 30 are made, extending through to the outer margin of the door, 60 the openings having one inclined wall to permit of the side as well as the end movement of the door-bolts, and where these openings are made in the door wear-plates 31 are secured thereto, crossing the margin, the wear- 65 plates having openings registering with the openings 30, and in the wall of the door-opening B keepers 32 are introduced to receive the bolts when they are thrown outward, and a keeper 32^a may be formed also in or upon 70 the track 11 or its support at that side of the opening B over which the door travels, so that after the door has been fully opened by throwing the bolts outward or to their locking position the upper bolt will enter the aforesaid 75 keeper 32^a and lock the door in its open position.

Having thus described our invention, we claim as new and desire to secure by Letters Patent— 80

1. The combination with a structure having an opening therein, of a door adapted to close said opening and arranged to slide in a plane located exteriorly of, but approximately 85 parallel to that of the opening, supports or hangers connected to the door, and a track extending longitudinally of the structure and adjacent to its opening, said track being engaged by the door supports, and being deflected inwardly at a point opposite the 90 position of the supports, when the door is closed, to permit the door to be moved into the opening in a direction transverse to the extension of the track, substantially as described.

2. The combination with a structure having an opening therein, of a door adapted to close said opening, hangers pivotally connected to the door, and a track extending longitudinally of the structure and adjacent to its opening, said track having a substantially 100 straight tread on which the hangers run, and being deflected inwardly below said tread at a point opposite the position of the supports when the door is closed, to permit the door to be moved into the opening in a direction 105 transverse to the extension of the track, substantially as described.

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HARRISON HINES.

Witnesses:

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C. A. FELTMAN.