No. 845,509. PATENTED FEB. 26, 1907.

JOSEPH A. BOURGEOIS & JOHN A. BOURGEOIS.

CAR DOOR.

APPLICATION FILED MAY 15, 1906.

2 SHEETS—SHEET 1.

Fig. 2.

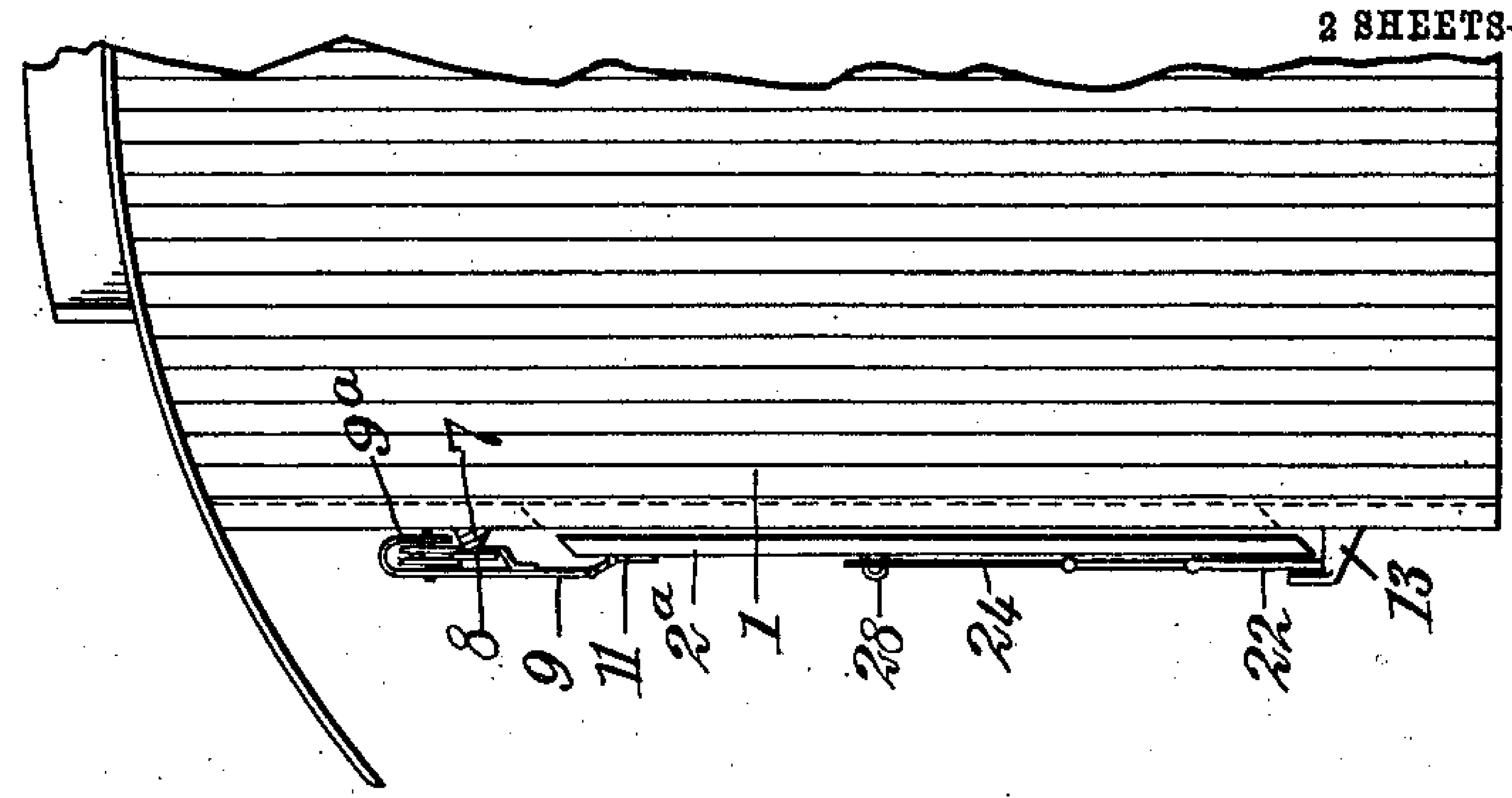
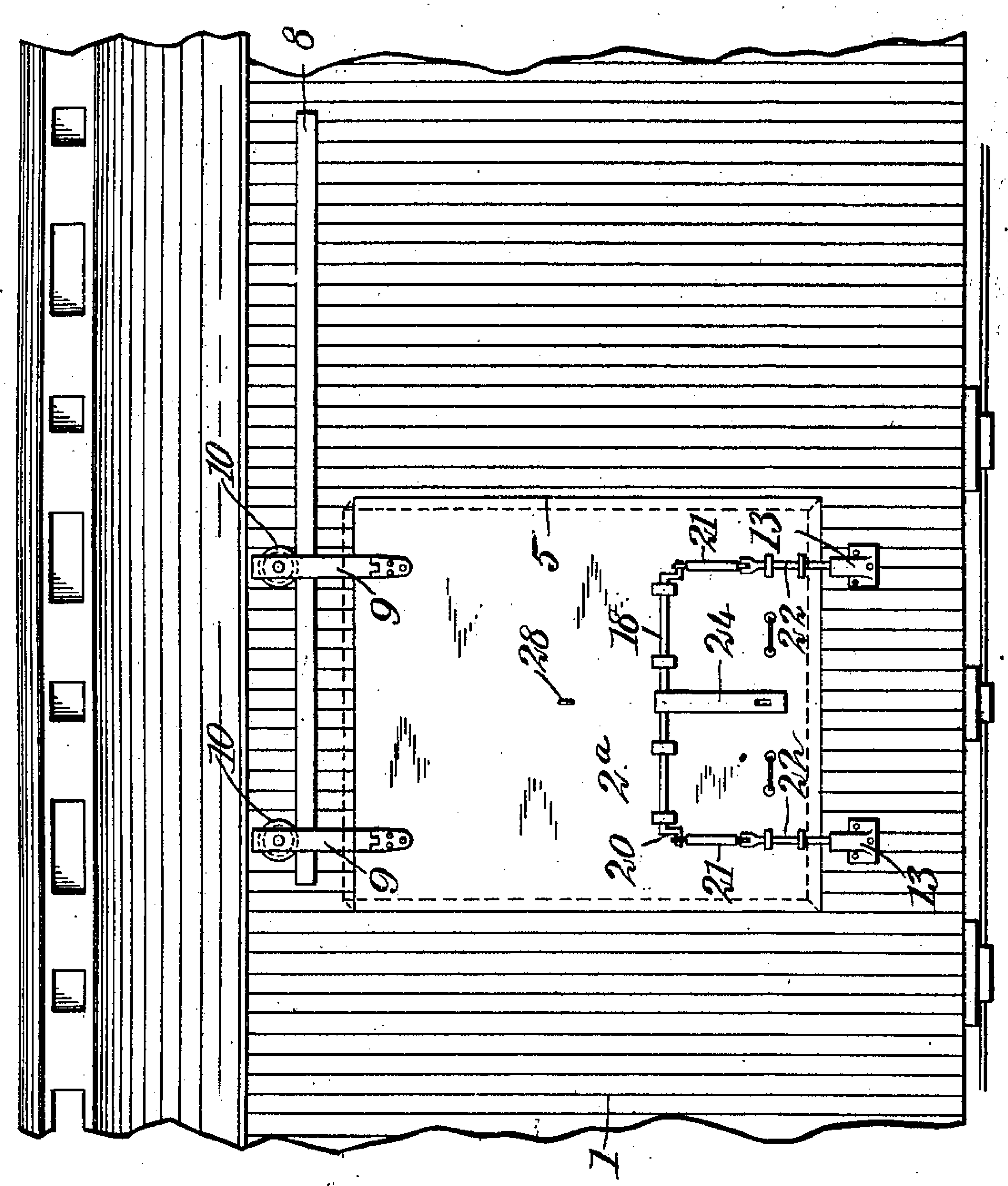


Fig. 1.



WITNESSES

J. Nussblatt
F. D. Ammen

INVENTORS
Joseph A. Bourgeois
John A. Bourgeois
BY Munn & Co
ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 5.

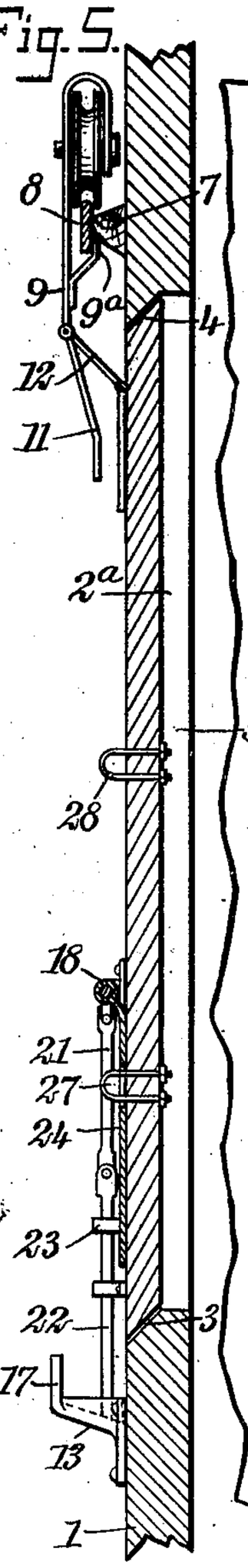


Fig. 3.

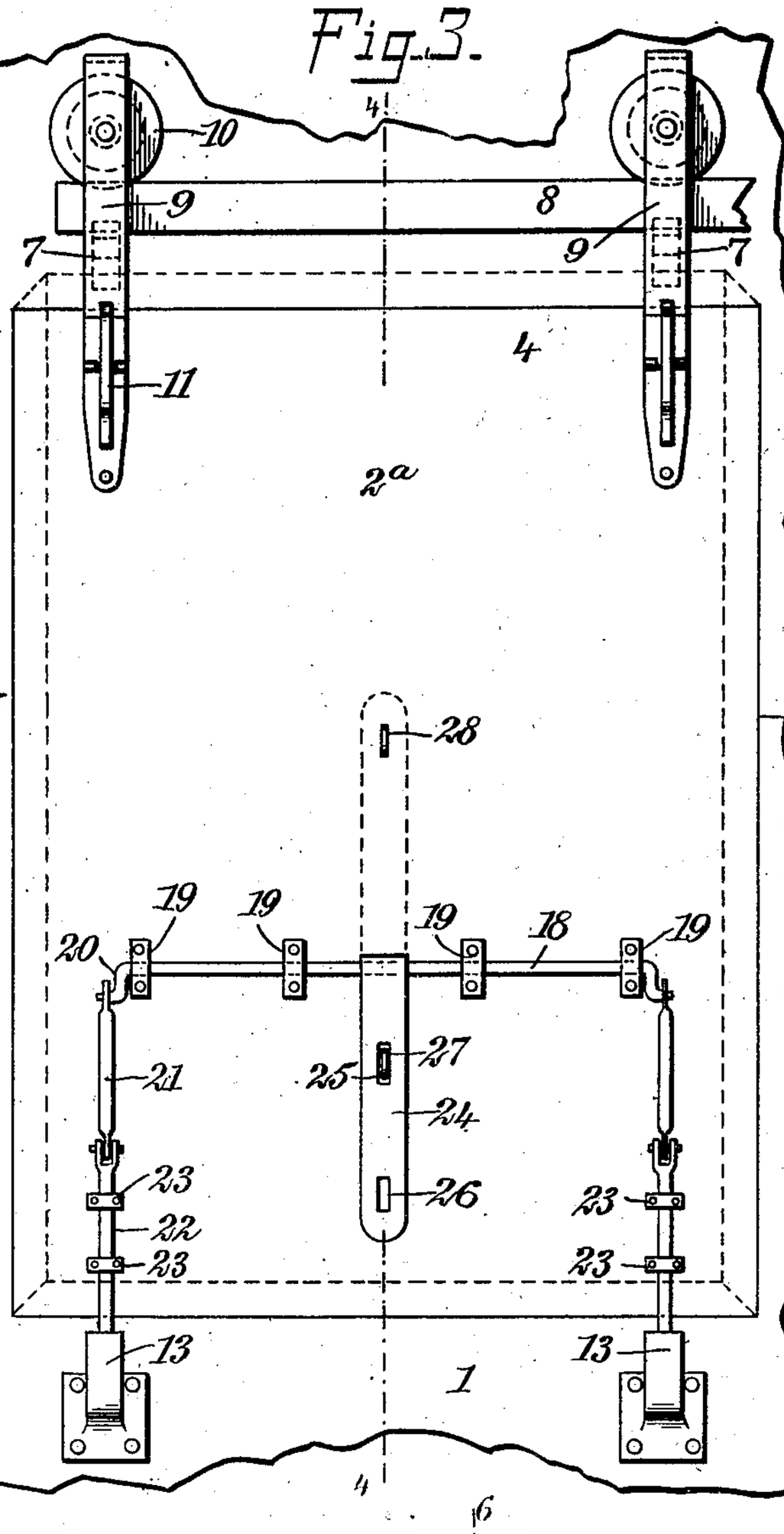


Fig. 4.

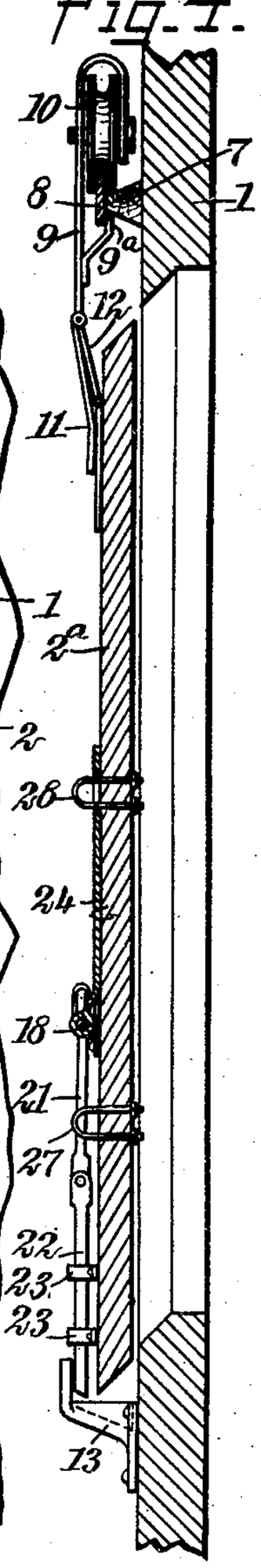


Fig. 6.

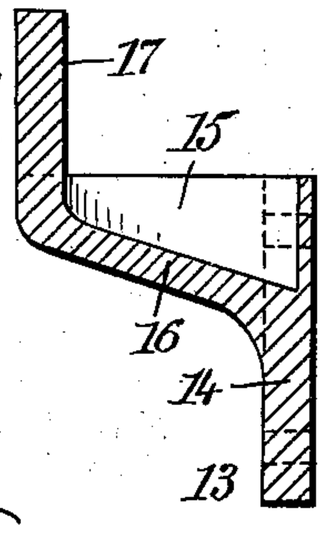
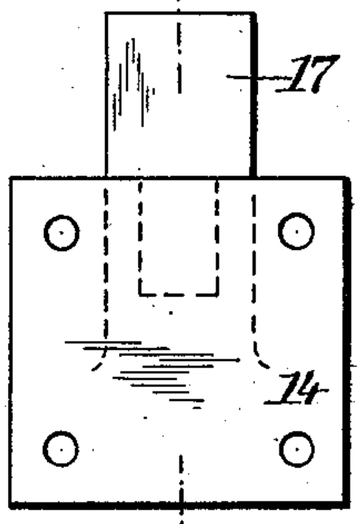


Fig. 7.



WITNESSES.

J. Nussbaum

F. D. Anderson

INVENTORS

Joseph A. Bourgeois

John A. Bourgeois

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH ADAM BOURGEOIS AND JOHN ALBERT BOURGEOIS, OF ALGIERS, LOUISIANA, ASSIGNORS OF ONE-THIRD TO WILLIAM H. WHITTENBURG, OF ALGIERS, LOUISIANA.

CAR-DOOR.

No. 845,509. Specification of Letters Patent. Patented Feb. 26, 1907.

Application filed May 15, 1906. Serial No. 316,945.

To all whom it may concern.

Be it known that we, JOSEPH ADAM BOURGEOIS and JOHN ALBERT BOURGEOIS, both citizens of the United States, and residents of Algiers, in the parish of Orleans and State of Louisiana, have invented a new and Improved Car-Door, of which the following is a full, clear, and exact description.

This invention relates to car-doors; and the object of the invention is to produce a door which may be readily opened and closed and which will be substantially water-tight when in its closed position.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth 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 the body of a car provided with a car-door of our invention. Fig. 2 is an end elevation of a portion of the car and representing the door in its open position. Fig. 3 is an enlarged side elevation showing the door and the adjacent portion of the car and representing the door in its closed position. Fig. 4 is a vertical section on line 4 4 of Fig. 3, but representing the door in the act of being opened. Fig. 5 is a view similar to Fig. 4, but representing the door in its closed position. Fig. 6 is a vertical section taken on the line 6 6 of Fig. 7 and illustrating a bracket which is used in connection with the door, and Fig. 7 is an elevation showing the inner face of the bracket.

Referring more particularly to the parts, 1 represents the car-body having a doorway 2 in the side thereof. This doorway is formed with a beveled lower edge or sill 3 and a beveled lintel or upper edge 4. The side edges or jambs 5 of the doorway are also beveled, as indicated.

At a suitable point above the upper edge of the doorway we attach a track, which comprises a cleat 7, attached to the side of the car, to the outer face whereof a rail 8 is attached. This rail consists simply of a piece of strap iron or steel, and it projects, as indicated, above and below the upper and lower faces of the cleat 7. These faces of the cleat are preferably beveled so that the cleat tapers toward the rail, as shown in Fig. 5. The door 2^a is supported upon hangers 9, which consist of vertical straps formed into yokes at their upper extremities and having rollers 10, which run upon the rail 8, as indicated. The lower portions of each of these yokes is bent inwardly to form an inclined extension or stop 11, which limits the outward swinging movement of the door in a manner which will be described more fully hereinafter. The body of each of the hangers 9 is substantially vertical and the extension 11 inclines inwardly toward the doorway, as shown. Preferably at the angle of meeting of the extension 11 and the body of the hanger each hanger has pivoted thereto a link 12, and these links are attached pivotally at their inner extremities to the outer face of the door 2^a, as shown.

Below the lower edge of the doorway we attach a pair of brackets 13, the construction of which is very clearly shown in Figs. 6 and 7. Each bracket presents a face-plate 14, which is held against the side of the car and is formed above into a socket 15, the bottom 16 whereof inclines downwardly toward the car-body. The outer extremity of the bracket terminates in an upwardly-projecting finger or guard 17.

On the lower portion of the door 2^a we attach a transverse horizontal shaft 18, which is rotatably held in suitable bearing-clips 19. The extremities of this shaft are offset to form cranks 20, to which pitmen or connecting-rods 21 are pivotally attached, and these connecting-rods attach pivotally to vertically-sliding bolts 22, which move longitudinally in suitable guide-clips 23, attached to the door. Near its central point the shaft 18 is provided with a rigdily-attached lever 24, the said lever being provided with slots 25 and 26. This lever is adapted to lie flat against the outer face of the car-door either projecting upwardly, as indicated by the dotted lines in Fig. 3, or projecting downwardly as indicated in full lines. Coöperating with the slots 25 and 26, staples 27 and 28 are provided. Upon either of these staples a padlock may be applied in order to lock the bolts 22 in a fixed position. The cranks 20 and the lever 24 lie substan-

tially in the same plane, so that when the lever 24 is projecting upwardly the cranks 20 will also project upwardly. From this arrangement by moving the lever in an upward direction the bolts 22 will be withdrawn upwardly. The lower edge 3 is beveled, so that it inclines downwardly toward its outer edge, while the beveled edge 4 is oppositely beveled—that is, it inclines upwardly toward its inner edge. When the door is not held in the doorway, it occupies substantially the position shown in Fig. 4. In this connection it should be understood that the door hanging in this way tends to swing outwardly on the links 12, which support it from the hangers, and this outward swinging movement is limited by the stop extensions 11 of the hangers. With the door hanging in this way it may be moved sidewise, the rollers 10 running on the track 8, as will be readily understood. When the door is before the doorway, the bolts 22 lie just above the brackets 13. In closing the door the door is brought into position before the doorway, and the lever 24 is folded downwardly. In doing this the bolts 22 are forced downwardly, and their lower extremities, which are preferably beveled, as shown, engage the inclined bottoms 16 of the sockets 15. By forcing the bolts downwardly in this manner the door will be forced bodily upwardly, swinging upwardly upon the links 12. In this way the door is forced upwardly and laterally into the doorway, the lower beveled edge of the door sliding up on the beveled sill 3. It should be understood that when the weight of the door is thrown upon the inclined faces of the brackets the door tends to slide toward the car. As it slides inwardly in this way the door will be raised so that it moves upwardly and inwardly in a line substantially parallel with the bevel of the upper and lower edges of the doorway. When the door is tightly seated in the doorway, the lever 24 will have come into the position shown in full lines in Fig. 3, whereupon it may be locked by a padlock. In opening the door of course the operation just described is reversed. When the lever 24 is held in its uppermost position, as indicated in Fig. 4, the lower extremities of the bolts 22 will clear the brackets 13, so that no obstruction is offered to the sliding of the door away from the doorway.

On account of the manner in which the edges 3 and 4 of the doorway are beveled it is impossible for rain to leak through the door when it is closed. In this connection it should be understood that the edges of the door are beveled to correspond with the edges of the door-frame.

The hangers 9 are provided with upwardly-projecting guards 9^a, which engage behind the lower edge of the rail and prevent the rollers from becoming dislodged from the rail.

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

1. In combination, a car presenting a doorway having beveled upper and lower edges, a door mounted to run horizontally on said car so as to come before said doorway, brackets having their upper faces inclined downwardly toward the car, and bolts carried by said door and guided thereupon, means for forcing said bolts downwardly to engage said brackets whereby said door may be raised upon said brackets, the inclination of said faces tending to move said door inwardly toward said doorway.

2. In combination, a car having a doorway with beveled upper and lower edges, a track attached to said car, a door having a swinging support on said track and adapted to come into position before said doorway, brackets attached to said car, bolts slidably carried by said door coöperating with said brackets to raise said door, a lever, means for actuating said bolts by said lever, said brackets having inclined faces depressed toward the car whereby said door tends to slide inwardly when raised upon said brackets by said bolts.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOSEPH ADAM BOURGEOIS.
JOHN ALBERT BOURGEOIS.

Witnesses:
JOSEPH DEINNEVILLE RICHARD,
GEORGE A. LEBER.