No. 827,526. PATENTED JULY 31, 1906.

L. D. GIBSON.

CAR DOOR OPENER.

APPLICATION FILED MAY 18, 1905. RENEWED JULY 2, 1906.

Fig. 1.

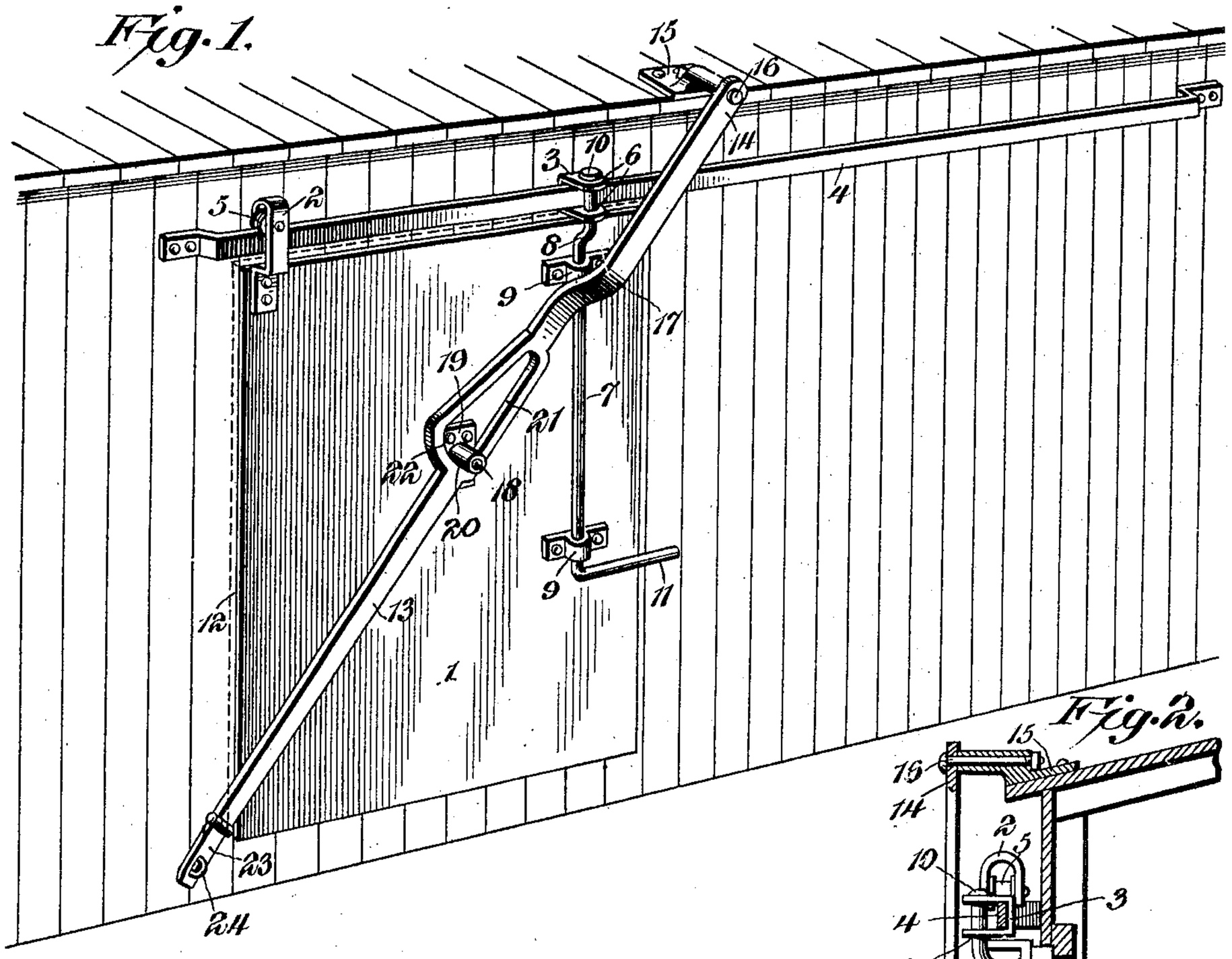


Fig. 2.

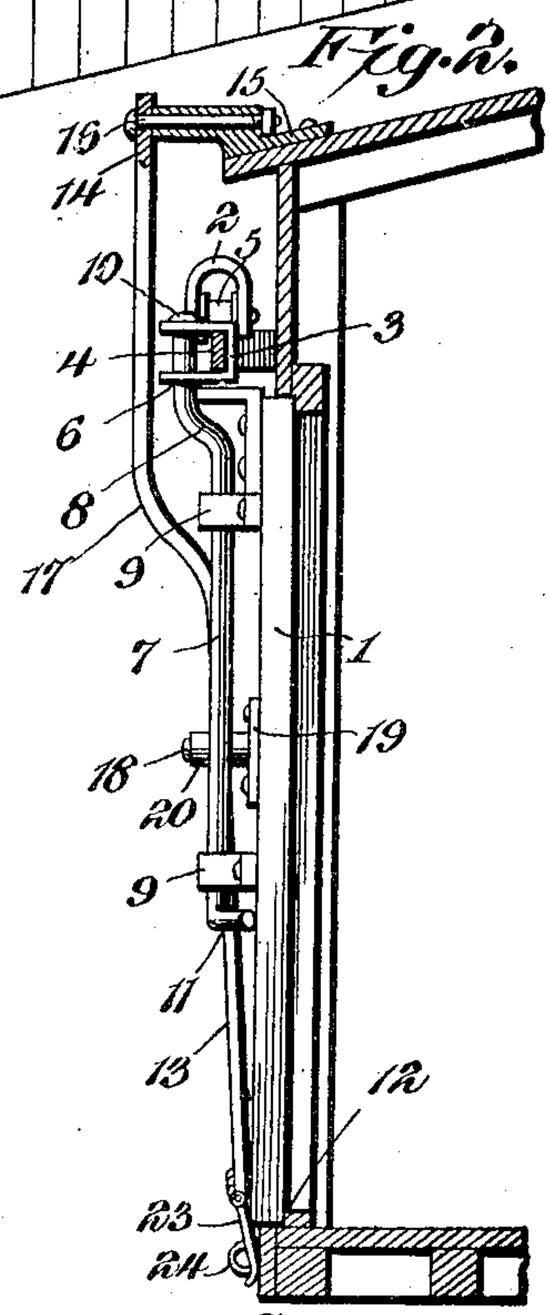
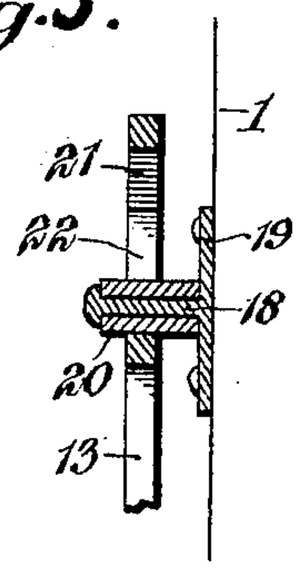


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

LEVI D. GIBSON, OF STRAWN, TEXAS, ASSIGNOR OF ONE-HALF TO HERMAN F. SCHEER, OF DALLAS, TEXAS.

CAR-DOOR OPENER.

No. 827,526. Specification of Letters Patent. Patented July 31, 1906.

Application filed May 18, 1905. Renewed July 2, 1906. Serial No. 324,493.

To all whom it may concern:

Be it known that I, LEVI D. GIBSON, a citizen of the United States, residing at Strawn, in the county of Palo Pinto and State of Texas, have invented a new and useful Car-Door Opener, of which the following is a specification.

The invention relates to improvements in car-door openers.

The object of the present invention is to improve the construction of car-door openers and to provide a simple, strong, and durable device adapted to be readily applied to cars at a small cost and capable of obviating the use of hammers and other tools and of enabling a car-door to be quickly opened without injury.

A further object of the invention is to provide a device of this character adapted to retain a car-door on a car, and thereby prevent the door from falling off and becoming lost.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a car-door opener constructed in accordance with this invention and shown applied to a car. Fig. 2 is a vertical sectional view, the door being closed. Fig. 3 is a detail view of a portion of the operating-lever and the antifriction device of the door.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a car-door provided with hangers 2 and 3 and adapted to slide on a rail 4 to cover and uncover the door-opening. The hanger 2, which is of the ordinary construction, is provided with a roller 5, adapted to run on the rail 4. The other hanger is substantially U-shaped, being composed of horizontal top and bottom portions and a connecting vertical portion. The horizontal top and bottom portions are provided with alined bearing-openings 6 for the reception of a crank-shaft 7, which is provided with a crank-bend 8 and which is also journaled in suitable bearings 9 of the car-door. The rail is arranged within the hanger 3 between the rear vertical portion and the upper portion of the crank-shaft. The upper end of the crank-shaft is provided with a head 10 or other suitable means for maintaining it in the bearings of the hanger, and the lower end of the shaft is provided with a suitable handle 11, by means of which it is rocked to move the door inward and outward. The crank-bend 8 is interposed between the bearings of the hanger and the bearings of the door, and when the crank-shaft is partially rotated the door will be moved inward and outward to force it into the seat 12 of the car-body and to carry it away from the same to enable it to slide freely on the rail 4. In practice the car will be provided at intervals with the usual brackets to receive the lower edge of the car-door; but these for convenience of illustration have been omitted.

The car-door is operated to open and close it by means of a lever 13 extending diagonally of the door when the latter is closed to serve as a locking-bar for retaining the door in position on the car. The lever 13 is fulcrumed at its upper end 14 on the car-body at the top thereof by means of a bracket or plate 15, which is provided with a projecting pivot 16, located at a point approximately above the center of the rail. The pivot, which may be of any desired construction, in the accompanying drawings is formed by a bolt extending through a perforated projecting portion or sleeve of the attachment plate or bracket, as clearly illustrated in Fig. 2 of the drawings. At an intermediate point the lever is provided with a bend 17 to enable its upper portion to clear the rail 4 and the crank-shaft and to arrange the lower portion adjacent to the door, which is provided with a projection or pin 18, extending from an attachment-plate 19 and carrying an antifriction-sleeve 20. The projecting antifriction device which is located at about the center of the door is arranged within a longitudinal slot or opening 21 of the lever, which when oscillated engages the antifriction device and is adapted to slide the door on the rail. The slot is tapered toward the top, and the lever is provided at the bottom of the slot with an inclined edge 22, arranged to engage

the projecting antifriction device at the bottom and adapted to support or partially lift the door to facilitate starting the same in its sliding movement when opening the door.

The lower end of the operating-lever is provided with a hinged section 23, having a slot forming a hasp which is adapted to engage a staple 24; but any other form of eye may be employed for this purpose. The staple or eye which projects through the slot of the hasp 23 is adapted to receive a pin or other suitable locking device, and it is also designed to be engaged by a car-seal, whereby the door may be sealed in the usual manner. When the door is closed, the operating-lever serves as a locking-bar for retaining it in its closed position. Also the locking-lever and the crank-shaft serve as a means for connecting the door with the car, whereby the door is effectually prevented from falling from the car and becoming lost.

It will be seen that the car-door opener, which is exceedingly simple in its construction for enabling a car-door to be quickly opened without the use of a hammer or other tool tending to injure the door, may be applied to cars at a very low cost.

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

1. In a device of the class described, the combination with a car, and a sliding car-door, of a combined operating and locking lever fulcrumed on the car and extending across the door, when the latter is closed, said lever being provided at an intermediate portion with a slot, means mounted on the door for engaging the slot of the lever, said lever being provided with an inclined edge arranged to lift the door to facilitate opening the same, and means for locking the lever when the door is closed.

2. In a device of the class described, the combination with a car, and a sliding door provided with a projection, of a lever fulcrumed on the car and having a slot receiving the projection, said lever being provided at the bottom of the slot with an inclined edge arranged to engage the projection to lift the door to facilitate opening the same.

3. In a device of the class described, the combination with a car, and a door, of a combined operating and locking lever fulcrumed at its upper end on the car and provided at an intermediate portion with a tapered opening, said lever having an inclined edge at the bottom of the slot, a bracket mounted on the door and provided with a projecting antifriction device extending into the slot of the lever, and means for securing the lever to the car when the door is closed.

4. In a device of the class described, the combination with a car, and a sliding door, of a lever fulcrumed at its top on the car and extending across the door when the latter is closed, said lever being provided at its lower end with a hinged hasp, means mounted on the car for engaging the hasp, and means carried by the door for engagement with the lever, whereby when the latter is oscillated the door will be opened and closed.

5. In a device of the class described, the combination with a car, and a sliding door, of an oscillatory operating-lever connected with the door and adapted to open the same, said lever being provided with an inclined edge arranged to lift the door at the beginning of the opening movement of the same.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LEVI D. GIBSON.

Witnesses:
JNO. A. WATSON
R. B. GORDON.