(No Model.) 2 Sheets—Sheet 1.

M. T. CARSON & J. D. GURGANUS.

CAR DOOR.

No. 472,858. Patented Apr. 12, 1892.

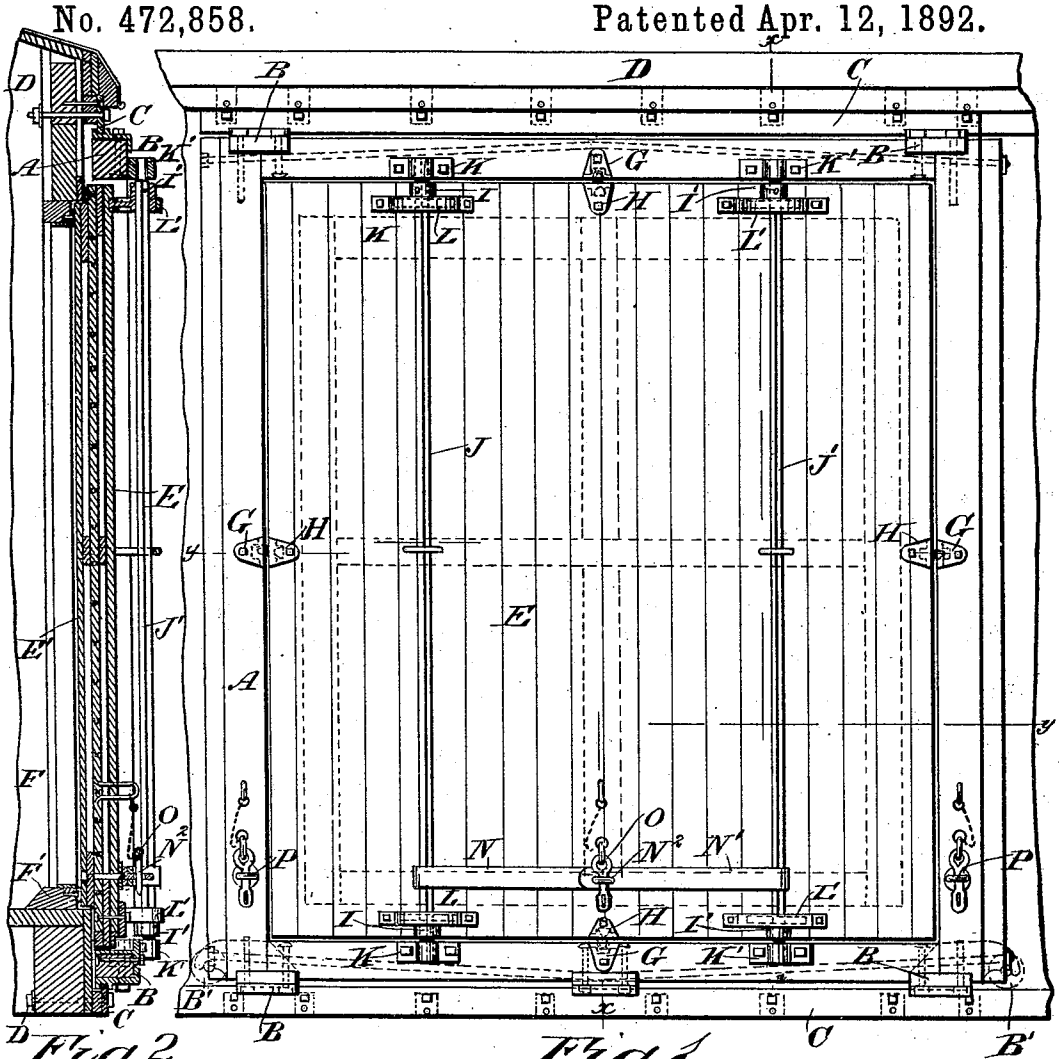

Fig 2. Fig 1.

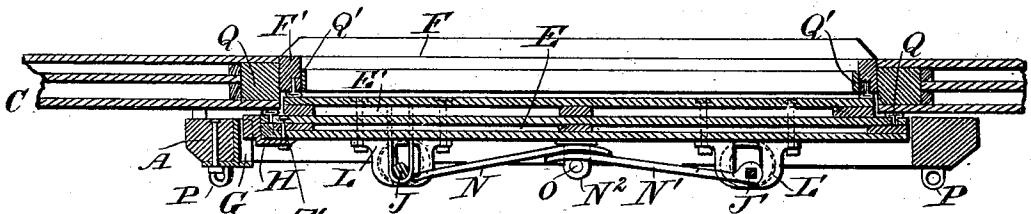

Fig 3.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

M. T. CARSON & J. D. GURGANUS.

CAR DOOR.

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Fig. 4

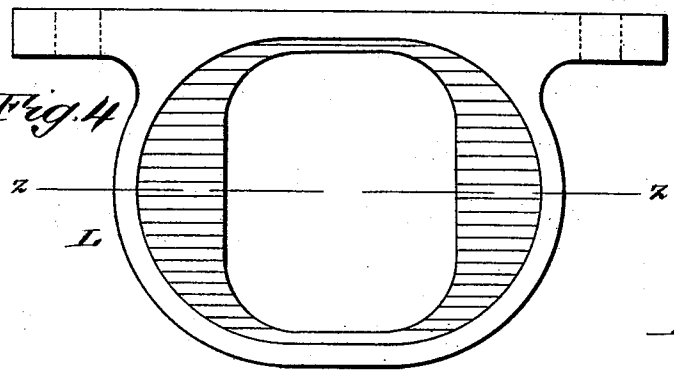


Fig. 5

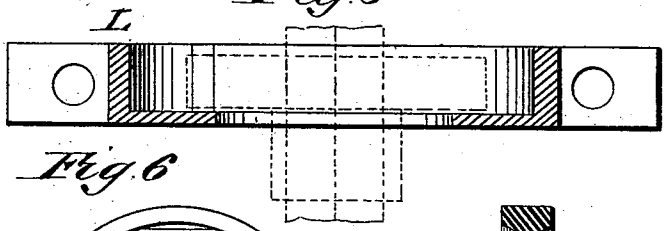


Fig. 6

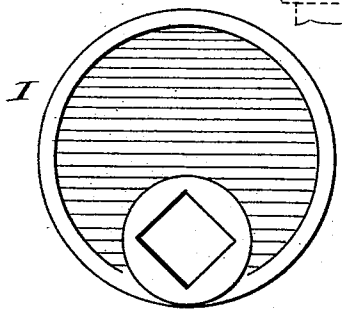


Fig. 7

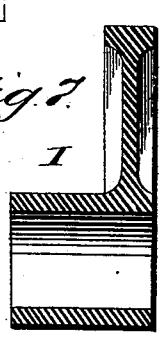


Fig. 8

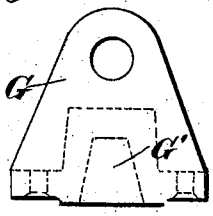


Fig. 9.

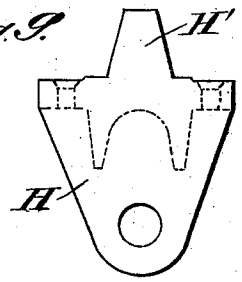


Fig. 10

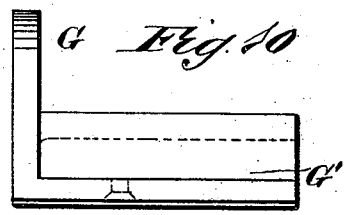


Fig. 11.

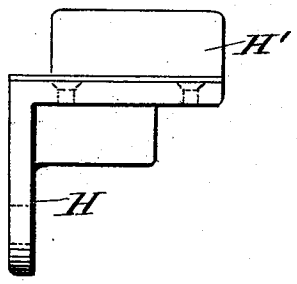
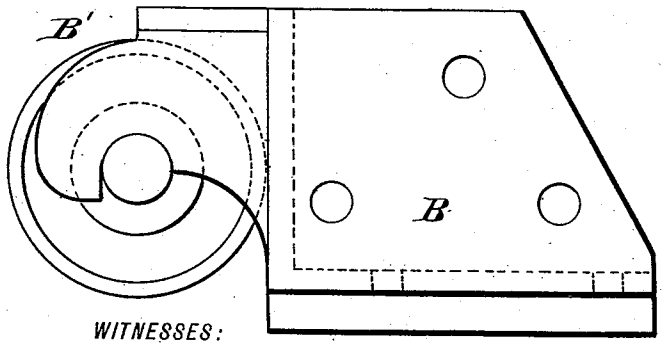


Fig. 12.



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UNITED STATES PATENT OFFICE.

MANLY T. CARSON, OF JACKSON, TENNESSEE, AND JAMES D. GURGANUS, OF WHISTLER, ALABAMA.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 472,858, dated April 12, 1892.

Application filed May 28, 1891. Serial No. 394,381. (No model.)

To all whom it may concern:

Be it known that we, MANLEY T. CARSON, of Jackson, in the county of Madison and State of Tennessee, and JAMES D. GURGANUS, of Whistler, in the county of Mobile and State of Alabama, have invented a new and Improved Car-Door, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved car-door which is simple and durable in construction, is readily opened or closed, and is absolutely air and water tight when closed, thus insuring perfect protection to the contents of the car, and is more especially designed for use on refrigerating, fruit, box, and other cars.

The invention consists of a frame arranged to slide on the side of the car and a panel fitted to slide transversely in the said frame.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

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

Figure 1 is a side elevation of the improvement as applied. Fig. 2 is a transverse section of the same on the line *x x* of Fig. 1. Fig. 3 is a sectional plan view of the same on the line *y y* of Fig. 1. Fig. 4 is an enlarged plan view of one of the eccentric-straps. Fig. 5 is a sectional plan view of the same on the line *z z* of Fig. 4. Fig. 6 is an enlarged face view of one of the eccentrics. Fig. 7 is a transverse section of the same. Figs. 8 and 9 are face views of the panel-supports. Figs. 10 and 11 are side elevations of the same, and Fig. 12 is an enlarged side elevation of one of the frame-rollers.

The improved car-door is provided with a rectangular frame A, carrying shoes B or rollers B′, engaging a rail C, secured longitudinally on the side of the car D to permit of conveniently moving the car-door to or from the car-door opening. In the frame A is fitted to slide transversely a panel E, adapted to close the car-door opening F, as is plainly shown in Figs. 1, 2, and 3. The car-door panel E is provided on its inner face with an offset E′, fitting onto a rabbet F′, arranged in the car-door opening, as is plainly shown in Figs. 2 and 3.

In order to support the panel E in the frame A and to permit of its sliding transversely, sets of castings G and H are provided, of which the castings G are secured to the frame A and the castings H to the panel E. Each of the castings G is formed with a transversely-extending groove G′, engaged by a correspondingly-shaped tongue H′, formed on the opposite casting H, the said sets of castings being arranged at the sides, top, and bottom of the frame A and the panel E, as is plainly shown in Fig. 1. The grooved casting G is of sufficient length to permit the tongue H′ to travel laterally, so as to move the panel E completely into the frame A or out of the same to close the car-door opening F, the offset E′ of the panel engaging the rabbet F′.

The grooves G′ of the castings G are open at their inner ends, so as to permit of passing the tongues of the castings H into the said grooves, the front ends of the latter, however, being closed to prevent the panel from moving outward out of engagement with the frame. The panel is put in place on the frame A before the car-door is hung on the side of the car. The panel is placed in position from the inside of the frame, the tongues of the casting H engaging and sliding in the grooves G′ of the castings G. It will be seen that by this arrangement any desired number of sets of castings G and H may be employed on the frame and panel as long as the tongues of the castings H are in alignment with the grooves in the castings G in each set.

In order to conveniently impart a transverse sliding motion to the panel E, the following device is provided: Sets of eccentrics I and I′ are secured on vertically-arranged shafts J and J′, respectively, mounted to turn in suitable bearings K and K′, respectively, fastened to the front of the frame A on the top and bottom of the same, as is plainly shown in Fig. 1. The sets of eccentrics I and I′ engage eccentric-straps L and L′, respectively, secured on the front face of the panel E, so that when the shafts J and J′ are turned the eccentrics I and I′, by engaging the straps L and L′, respectively, move the panel E in-

ward or outward to or from the car-door opening F after closing or opening the same whenever desired. On the shafts J and J′ are secured hasp-arms N and N′, respectively, adapted to engage a staple N^2, held on the front of the panel E about midway between the said shafts, as is plainly shown in Fig. 1. The staple N^2 is adapted to be engaged by a suitable lock O after the hasp-arms are on the said staple, so as to lock the latter in place to prevent the opening of the panel E after it has been locked in the car-door opening F.

On each side of the frame A is arranged a staple P, adapted to be engaged by the hasp-arms N and N′, respectively, when the latter are swung outward in opening the door. A suitable lock is adapted to engage the staple P after the hasp-arms are in position thereon to lock the arms in place. The panel E is formed on its inner face near the edges with a packing Q, adapted to be pressed in contact with the door-casing when the panel E is locked in the door-opening, as is plainly shown in Figs. 2 and 3. A similar packing Q′ is arranged on the inner face of the offset E′ and abuts against the rabbet F′ of the door-opening, so that the panel hermetically seals the door-opening and makes an air and water tight joint.

A car-door constructed in this manner will securely protect the contents of the car from rain, dust, sparks of fire, &c., and permits of locking the car to prevent tampering by unauthorized persons. It will further be seen that the car-door is absolutely safe and will not fly open while the car is in transit, so as to injure bridges or other objects near the track, nor is it liable to expose the contents of the car to loss or damage. It will further be seen that the door is not affected by contraction and expansion of the material on account of moisture or variation of temperature, as there is ample room on the edges of the panel to prevent its getting fast, as is so frequently the case with the doors now in use. It will further be seen that the panel E may be moved into the frame A without unlocking the latter from the side of the car, the panel then permitting ventilation of the interior of the car whenever desired and without entirely opening the door.

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

1. The combination, with a car formed with a door-opening, of a frame fitted to slide on the car and arranged to pass over the said door-opening, and a panel fitted to slide transversely in the said frame and adapted to be seated on the said door-opening, substantially as shown and described.

2. A car-door comprising a frame mounted to slide on the side of the car and adapted to pass over the car-door opening, a panel fitted to slide transversely in the said frame and adapted to be seated on the car-door opening, and means, substantially as described, and held on the said frame and connected with the said panel to move the latter transversely, so as to seat it on the car-door opening, thereby locking the frame in place, as set forth.

3. In a car-door, the combination, with a frame mounted to slide longitudinally on the side of the car and adapted to be moved over the car-door opening, of a panel fitted to slide transversely in the said frame and provided with an offset adapted to engage and be seated in a rabbet in the car-door opening, and a mechanism, substantially as described, and held on the said frame and connected with the said panel to move the latter transversely, so as to seat the offset on the rabbet, thus preventing longitudinal sliding of the said frame, as set forth.

4. In a car-door, the combination, with a frame mounted to slide longitudinally on the side of the car and adapted to pass over the car-door opening, of a panel fitted to slide transversely in the said frame and adapted to be seated in the car-door opening, shafts journaled on the said frame and carrying eccentrics, and eccentric-straps secured to the said panel and engaged by the said eccentrics, substantially as shown and described.

5. In a car-door, the combination, with a frame mounted to slide longitudinally on the side of the car and castings secured on the said frame and each having a groove extending transversely, of a panel fitted into the said frame and castings held on the said panel and provided with tongues engaging the said grooves in the said castings on the frame to permit of sliding the panel transversely in the frame, substantially as shown and described.

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Witnesses to signature of James D. Gurganus:
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