

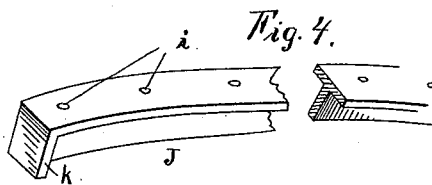
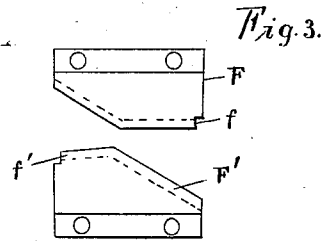
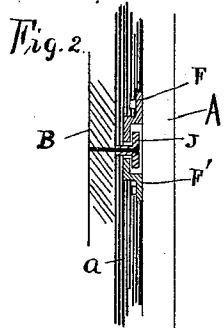
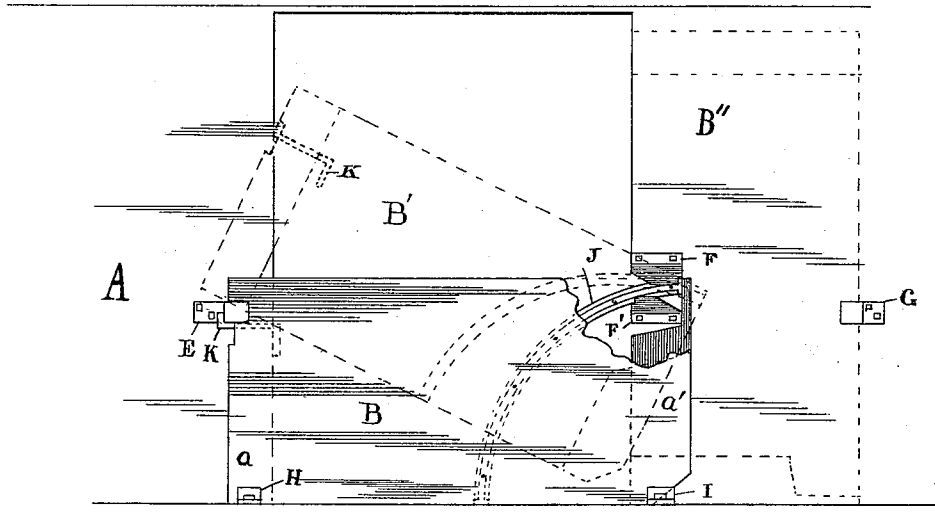
(No Model.)

G. G. GEIGER.  
CAR DOOR.

No. 449,155.

Patented Mar. 31, 1891.

Fig. 1.



Witnesses  
C. Keithley  
H. Wells

Inventor  
George G. Geiger.  
By W. V. Jeff  
att.

# UNITED STATES PATENT OFFICE.

GEORGE G. GEIGER, OF PEORIA, ILLINOIS.

## CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 449,155, dated March 31, 1891.

Application filed March 27, 1890. Serial No. 345,623. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE G. GEIGER, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Car-Doors; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in car-doors, by means of which a car-door is provided, being simple in construction, durable, and cheap in first cost.

More particularly my invention relates to that class of car-doors which are adapted to be used upon the inside of the cars and useful when the cars to which they are applied are loaded with grain.

That my invention may be more particularly understood reference is had to the accompanying drawings, in which—

Figure 1 is a side view of the inside of the car with my improved door attached thereto and shown in its various adjustments. Fig. 2 is a detailed view showing cut sections of the side of the car, the door-clamp, and T-rail in proper adjustment for working. Fig. 3 is a detailed view showing the two sections of the clamp. Fig. 4 is a detailed view of sections of a T-rail.

In Fig. 1 A represents the side of a car, a view from the inside. B B' B'' is the car-door in its several adjustments. *a a'* are cleats on the car-door. K is a fastening means or catch-lever having oppositely-extending short arms at its respective ends, with the body or that portion of the catch-lever between its said arms carried in a perforation in the cleat *a*, and in which said perforation it is carried back and forth to engage or release the angle-iron E when the short arm which is carried on the outside of the car-door is raised or lowered, this engagement being made with the angle-iron E when the catch-lever is pushed out from the side of the door to its full extent and the detachment is made by raising the short arm of the catch-lever on the outside of the car-door and drawing the projecting end of the catch-lever in until it is flush with the door, in which po-

sition the door may be raised. The door is further provided with an arc-shaped T-rail, properly fastened upon its outwardly-facing surface in such a manner that the said rail, beginning with the lower edge of the door near its middle, describes an arc terminating with the upper right-hand corner as viewed in the drawings. F F' are angle-irons or two sections which together form a clamp, the said sections being securely bolted at the edge of the opening in the side of the car. E G are angle-irons purposed to bear against the door and hold it in position. H I are stops purposed to bear against the lower part of the door and hold it in position when closed.

In Fig. 2 J is a T-rail bolted to the car-door B. F F' are angle-irons, which together form a clamp, which, bearing upon the flanges of the T-rail J, holds the same in position, besides forming a slot or passage-way through which the T-rail travels in raising and lowering the car-door. *a* is a cleat on the car-door at its side. B is the car-door. A is the side of the car.

In Fig. 3 F F' are angle-irons, with base-plates provided with suitable holes for bolts and having the outwardly-tending flanges having the shape and form shown in this figure and with the indentations *ff'*, the combination of the two sections forming the complete clamp, as before described. The indentations *ff'* are cut in the angle-irons F F' for the reception of the flanges *k* on the respective ends of the T-rail J.

In Fig. 4 is shown the T-rail J, which is provided with perforations through its flange or crown and its neck for the passage of bolts to secure it to the car-door. *k* is a stop at the end of the rail, the said rail being provided with one at either of its respective ends. *i* refers to perforations through the crown and neck of the T-rail J.

In use, the door being provided with the T-rail J in proper adjustment upon its outwardly-facing surface, and being further provided with the fastening means K, the sections F F' are then clamped over the flanges or crown of the T-rail and firmly bolted at the edges of the opening in the car. The door is then ready for use, and in operation it will be seen that the car-door is adjusted as shown by B in Fig. 1 when it is desired to load the

car with grain. In this position the door is firmly secured to the side of the car at the lower portion of the opening in said car, with the arc-shaped T-rail carried in the clamp 5 formed by the parts F F' at the upper right-hand corner of the door, and with the clamp E securing the door at its forward extremity by means of the catch or fastening means K, with the angle-irons H I securing the lower 10 corners of the door, in which position it is impossible for the door to become detached or loosened of itself or by motion of the car, and by providing suitable cleats at the sides of the door, as shown by *a a'*, to prevent the 15 escape of grain at those points a door is provided which effectually closes the lower portion of the opening in the side of the car. When it is desired to unload the car, it will be seen by raising the lower arm of the catch 20 K the upwardly-tending arm which engages the clamp E is detached therefrom, and the catch may then be drawn in flush with the edge of the door, thus offering no obstacle to its being raised perpendicularly, and it is so raised 25 to allow the grain to escape from the car. The lower right-hand corner, being cut off in the manner shown, provides an easy turning-point, as it will be seen that this corner, if not so cut off, would present an obstacle to the 30 operation of the door; and in addition to the advantage just shown it has the further advantage of sooner providing an avenue of escape for the grain at that end of the door than if the corner formed a right angle, as 35 the other corners, and by means of this avenue of escape, provided when the door is slightly raised, the grain running out at this point relieves the bearing of that end of the door against the grain and allows it to be 40 freely and easily raised, and may be adjusted

in position as shown by letter B', (designating the door,) or in the perpendicular position, as shown by B'', (also designating the door.) In the passage of the door from the lowered or horizontal position to the perpendicular position at the side of the car the arc-shaped T-rail bearing in the clamp formed by the parts F F' is carried backward through the opening of the said clamp until the door is in the position as shown by B'', and the 50 said T-rail is prevented from detachment from the clamp by means of the stop before described on the end of the T-rail. The door is closed in the same manner—viz., the T-rail bearing and traveling in the clamp in the 55 same manner as in raising the door.

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

1. In combination with a car, the door B, 60 provided with the cleats *a a'*, the catch K, the arc-shaped T-rail J, having the stops *k* at its respective ends, the sections F F', bolted to the edge of the opening in the car and forming the clamp in which the said T-rail J bears 65 and travels, all substantially as described and set forth.

2. In a car-door, the frame part B, having the cleats *a a'*, the catch K, the arc-shaped T-rail J, the sections F F', forming the bearing 70 in which the T-rail travels, the clamps E G, the stops H I, all substantially as described and set forth.

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

GEORGE G. GEIGER.

Witnesses:

D. K. BERTZ,  
C. B. McVEY.