

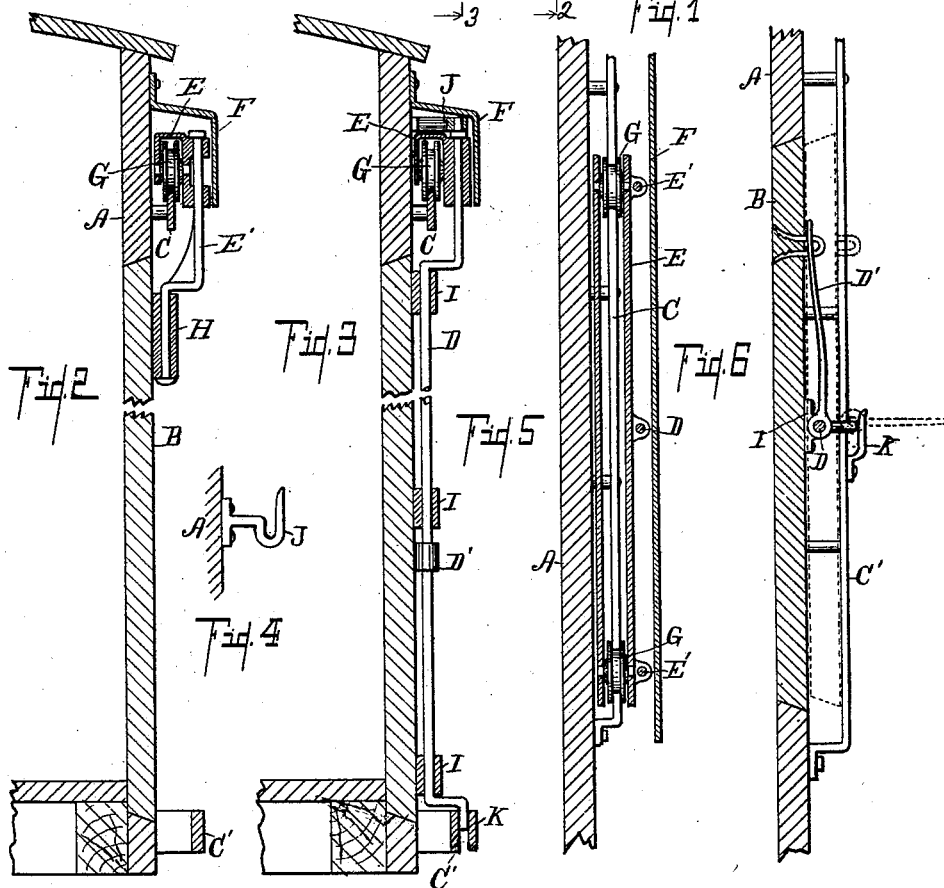
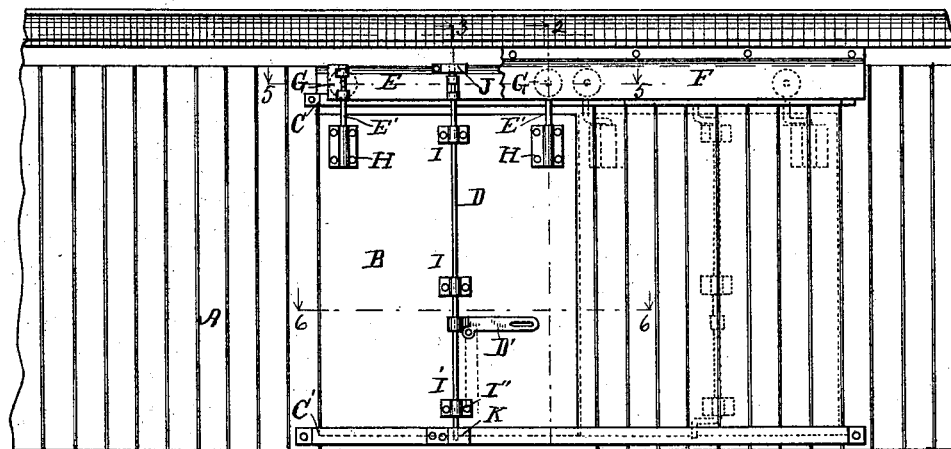
No. 646,644.

Patented Apr. 3, 1900.

L. H. HARRISON.
FREIGHT CAR DOOR.

(Application filed Aug. 5, 1896.)

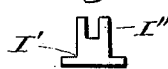
(No Model.)



Witnesses:

Walter S. Ford
Vern E. Chappell.

Fig. 7.



Inventor.

L. H. Harrison
By Fred L. Chappell
Att'y.

UNITED STATES PATENT OFFICE.

LEIGH HUGH HARRISON, OF PAW PAW, MICHIGAN, ASSIGNOR OF ONE-HALF
TO ALFRED E. DORE, OF CHICAGO, ILLINOIS.

FREIGHT-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 646,644, dated April 3, 1900.

Application filed August 5, 1896. Serial No. 801,765. (No model.)

To all whom it may concern:

Be it known that I, LEIGH HUGH HARRISON, a citizen of the United States, residing at the village of Paw Paw, in the county of Van Buren and State of Michigan, have invented a certain new and useful Freight-Car Door, of which the following is a specification.

My invention relates to improvements in freight-car doors.

The objects of my invention are, first, to provide a sliding freight-car door simple in construction which can be closed dust-tight and water-tight into the side of the car; second, to provide an improved freight-car door which shall be held in a closed position by a constant pressure to compensate for any shrinkage; third, to provide improved means of locking and securing a sliding freight-car door, further objects appearing definitely in the detailed description. I accomplish these objects of my invention by the devices and means described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a freight-car with one of my improved doors in position, portions being broken away to show details and dotted lines indicating the open position of the door. Fig. 2 is an enlarged detail vertical sectional view on line 2 2 of Fig. 1. Fig. 3 is an enlarged detail sectional view on line 3 3 of Fig. 1. Fig. 4 is an enlarged detail plan view of the hook J. Fig. 5 is an enlarged horizontal detail sectional view on line 5 5 of Fig. 1. Fig. 6 is an enlarged horizontal detail sectional view on line 6 6 of Fig. 1. Fig. 7 is an enlarged detail view of the bracket and box I' and the means for securing the hasp to lock the door in the open position.

In the drawings all of the sectional views are taken looking in the direction of the little arrows at the end of the section-lines and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered part of the drawings, A represents the side of a freight-car.

B is the door, which is beveled on its outside edges to fit a corresponding doorway in the side of the car. A track C is above the top of the doorway and extends along the car, to one

side of the same. Rollers G are provided for carrying the door upon this track. A guard-rail C' projects around the lower edge of the door and is secured in place by any suitable means. The rollers G are carried on a bar or housing E, which keeps the same in line and carries them together. Toward the upper outside of the door are brackets H H, and extending from these brackets and parallel with each other and of the same size are cranks E', which secure the door to the bar or housing E, which is carried by the rollers. This construction, it will be observed, will allow the door to be swung out and in, in relation to the track or the side of the car, by swinging on these cranks. Extending vertically on the door is a rod or shaft D, which is carried on suitable brackets I I I'. The ends of this rod or shaft D terminate in cranks, the one at the top corresponding exactly in size to the cranks E', heretofore referred to, and connecting to bar E and projecting beyond the same. A crank is also provided at the bottom. A hasp D' is placed upon the rod or shaft D, by which the same is to be manipulated and by which the door is to be locked. The hasp is made of spring metal. A hook J is placed above the door-opening and a similar hook or lug K is placed opposite the same below the door-opening. These hooks are in position to engage the outer ends of the cranks on the shaft D and are so located that they will be engaged by the ends of the cranks when the door is closed and are so situated that when the door is moved to the right position they will engage the same to assist in forcing the door into the doorway in the side of the car. From this description it will be seen that by taking hold of the hasp D' and swinging it out the cranks on the end of the shaft D will throw the door out away from the sides of the car, when the door can be freely slid along the track on the rollers G. The hasp is hinged to fold downwardly and will shut into a suitable recess for it on the box I' and retain the door in this outer position permanently, so that it can slide back and forth. When it is desired to close the door, it is moved along the track until the ends of the cranks on the shaft D slide into the hook J above and K below, when the hasp is lifted out of its seat in the box I' and pressed around on the side of the

door. This turns the crank and carries the door into the door-opening with a very strong pressure. The hasp is made of spring metal. It is sprung over its staple and secured there, and by keeping the shaft D continually under tension presses the door into its opening with an elastic pressure which compensates for any shrinkage in the same.

Having thus described my improved car-door, I desire to state that it is capable of considerable variation in its details without departing from my invention. Instead of making use of the hook J above, a recess might be formed in the housing F to receive the upper end of the crank. The housing F might be dispensed with, though it affords the usual protection for such parts. The means I have provided for swinging the door could also be varied. A sliding support could also be used instead of rollers G. The exact structure I have produced, however, is the most simple obtainable, possesses great merit, and is very effective in use. I desire to state, further, that the improved means I have shown for carrying and operating the car-door are applicable to car-doors which fit against the side of the car instead of into a beveled doorway.

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

1. In a freight-car door, the combination of the car A, with a doorway therein; a door B, with beveled edges to fit said doorway; a track C, above said doorway; rollers G, on said track; a bar E, connecting said rollers and carried by the same; brackets H, on said doors; cranks E', E', of equal size and parallel to each other connecting brackets H, to said bar E; a vertical shaft D, on said door with cranks at each end the one at the top connected to bar E; a spring-hasps D', connected to said shaft to actuate and lock the same; a hook J, above said doorway to engage the upper end of the crank on shaft D and suitable means as hook K, below to engage the lower end of the crank on shaft D, all coacting for the purpose specified.

2. In a car-door, the combination of the car A, with its doorway; the door; a track above for carrying the same; rollers on said track;

crank connections from said door to the rollers; a shaft on said door with cranks at the top and bottom; means as hooks at the top and bottom of the doorway in position to engage the ends of said cranks; and a spring-hasps on said shaft to lock the same and hold the door in the closed or open position as specified.

3. The combination of a doorway; a track by said doorway; a door adapted to fit against the doorway; vertical crank-hangers suitably joined together by a connecting bar or part and pivoted to said door to form a connection like a parallel ruler, and connecting said door with a track to allow it to move out and in with a parallel movement to close the doorway; and a rock-shaft with cranks at each end, parallel to the crank-hangers of the door; and connected with said connecting-bar; and suitable hooks or projections to be engaged by the cranks of said rock-shaft to force the door in position against the doorway and retain it there, as specified.

4. The combination of a freight-car with the doorway therein; a door suitably supported on a track; a rock-shaft on the said door terminating in cranks at each end; means as hooks on the car to be engaged by said crank; and a spring hasp or lever on said rock-shaft positioned to bend to clamp the same in place and put elastic pressure on the door as specified.

5. The combination of a freight-car with a doorway therein; a door; track; swing-hangers to support said door on the track; a rock-shaft on said door terminating in cranks at each end; connections between said shaft and hangers; means as hooks on the car to be engaged by said cranks; a spring-hasps secured to said shaft hinged to fold down; a suitable recess to receive the hasp in the folded position to hold the door in place as specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

LEIGH HUGH HARRISON. [L. S.]

Witnesses:

VEM E. CHAPPELL,
EDWARD A. SHIELDS.