

D. F. SPEES.
Inside Grain-Car Door.

No. 215,252.

Patented May 13, 1879.

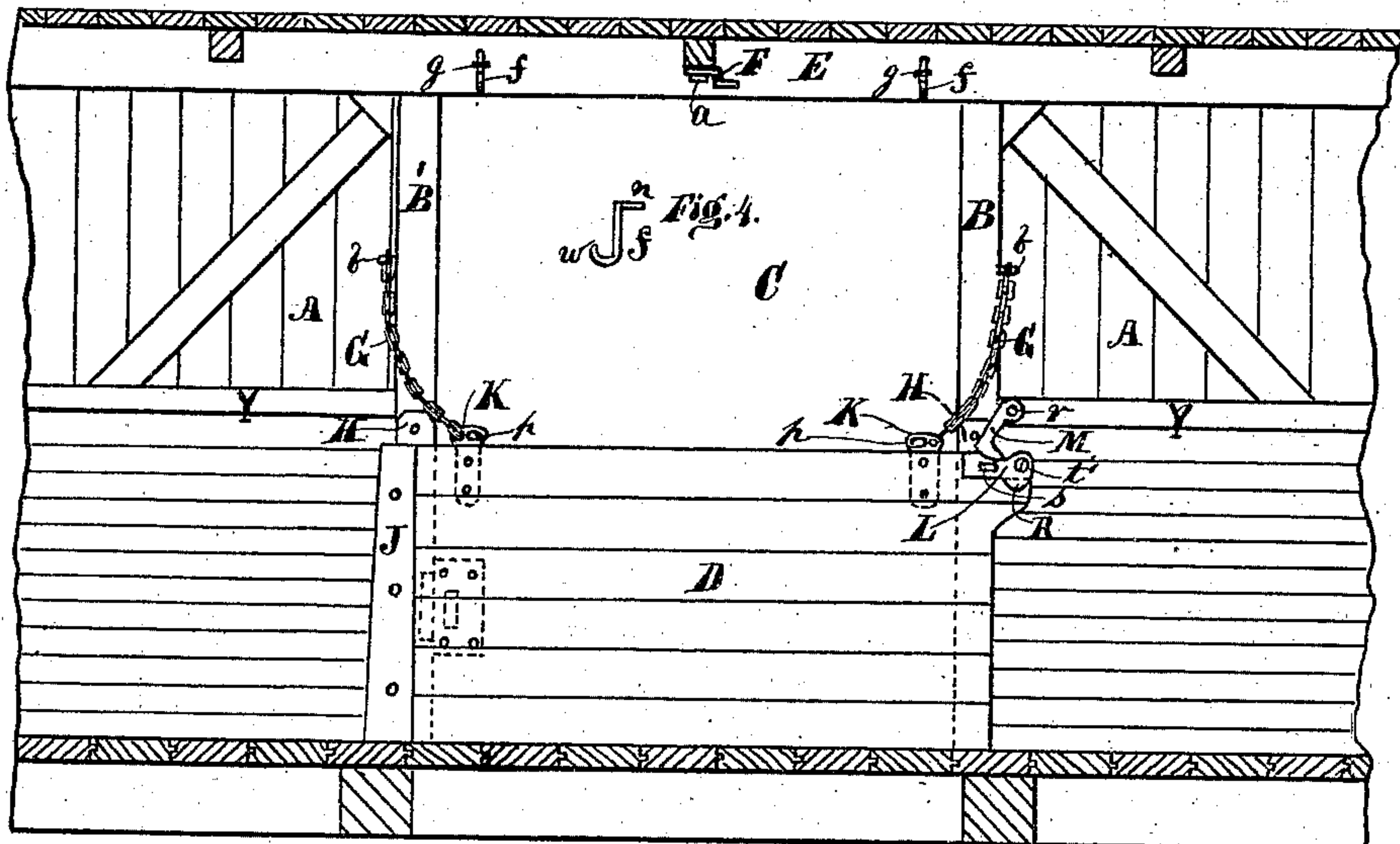


Fig. 1.

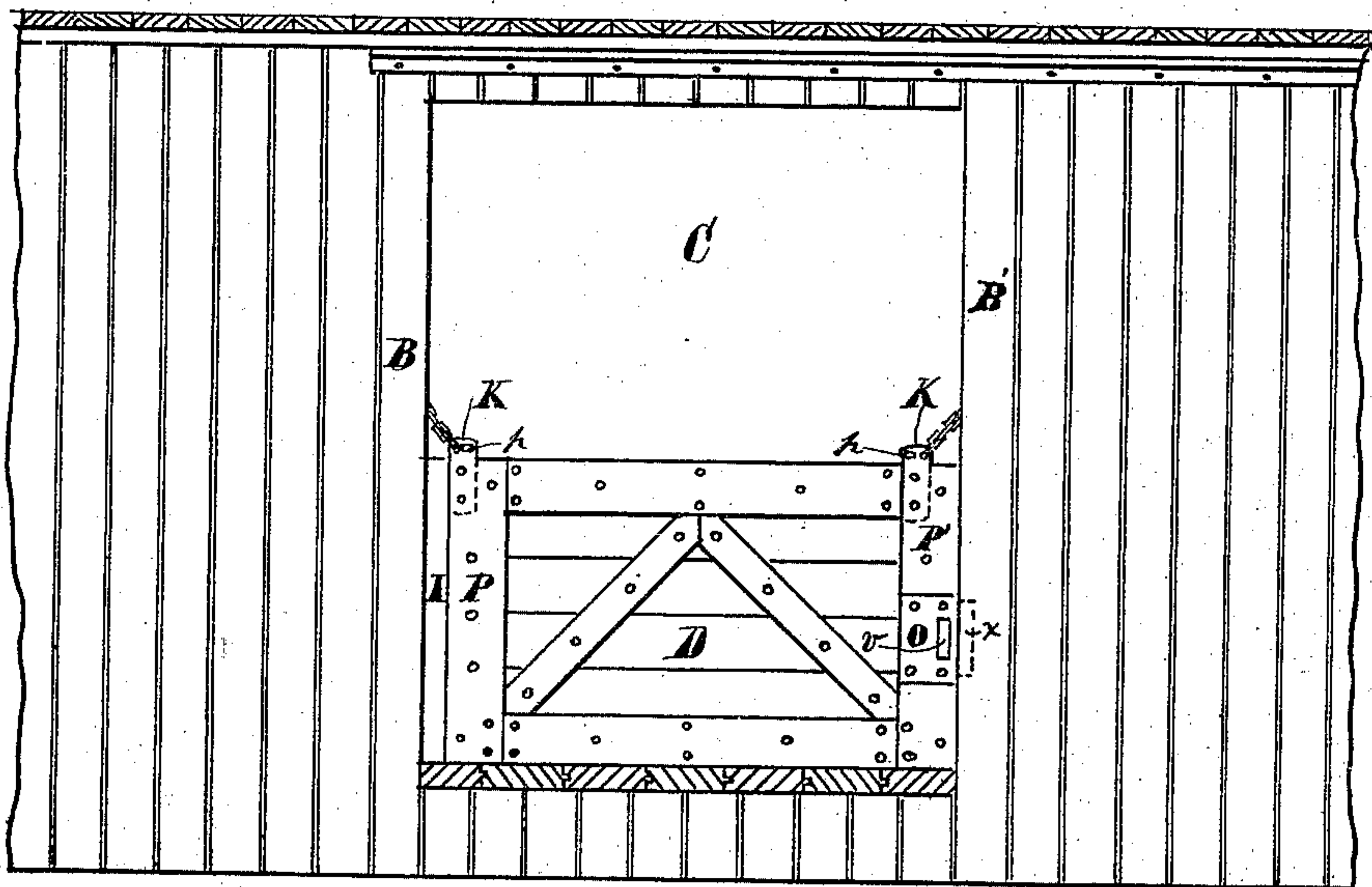


Fig. 2.

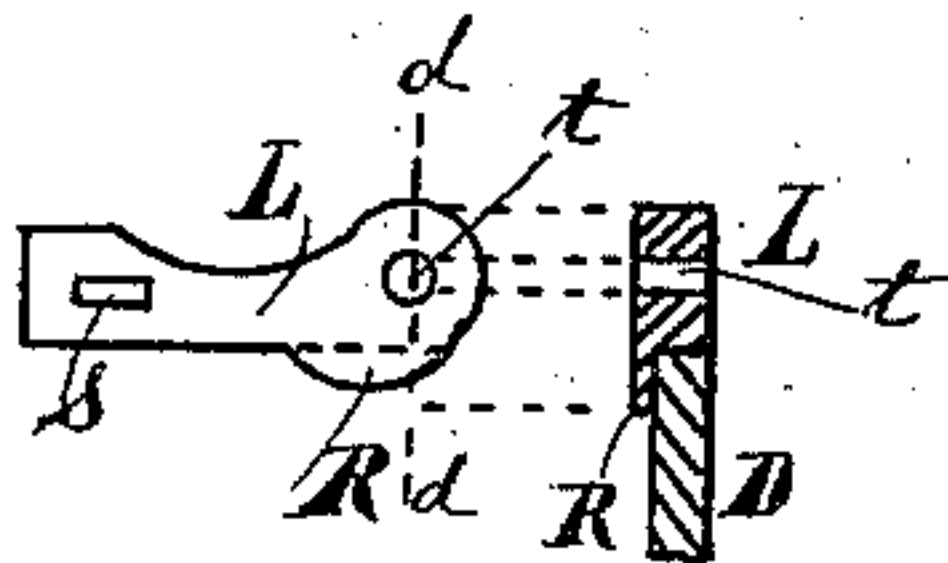


Fig. 3.

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IMPROVEMENT IN INSIDE GRAIN-CAR DOORS.

Specification forming part of Letters Patent No. **215,252**, dated May 13, 1879; application filed December 27, 1878.

To all whom it may concern:

Be it known that I, DAVID F. SPEES, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Inside Doors for Grain-Cars, of which the following is a description, reference being had to the accompanying drawings.

Prior to my invention variously constructed inside doors for grain-cars have been made and applied to freight-cars, for the purpose of holding grain therein, or releasing it when desired. In most instances such doors fail to accomplish the purpose their originators designed them for. While certain of them may work reasonably well with dry smooth grain and in dry weather, they frequently fail to produce the desired result when the car is laden with damp grain, ear-corn, or oats, and in damp weather even with dry grain, the item of expense being so great in the construction and application of certain doors that their application to freight-cars has been almost entirely abandoned.

The object of my invention is to provide a device whereby grain of all kinds, and in any condition, may be securely held in the car or released therefrom without the possibility of pinching or cramping the door, and at the same time permit the door to be easily and quickly removed (independent of the contents of the car) without injury thereto, and also a door that is simple, durable, and cheap in its construction and application to freight-cars.

In the accompanying drawings, in which like letters of reference in the different figures indicate like parts, Figure 1 represents a side elevation of the inside of a car, showing my improved car-door and means of fastening and releasing it. Fig. 2 is a side elevation of the outside of a car, showing the outside arrangement of the door. Fig. 3 represents a side and sectional view of the fastening device; and Fig. 4 represents the hooks on which the door is suspended when not in use.

A represents a box-car, with the doorway C and jambs B B', in the usual manner. The jambs B B' are lined on the inside from the bottom up to the belt-strip Y with thin iron plates H H, to protect the jambs, and at the same time prevent the door D from being nailed to said door-jambs, which is the common prac-

tice for securing other doors. The door D is of any ordinary construction, having perforated iron plates K K, to which one end of the chains G are secured. The other ends of the chains G are fastened securely to the jambs B B' by bolts b b, as shown. The plates K are provided with holes p, by means of which the door is hung on the hooks f f when not in use. The door D may be swung to the roof after being hooked onto the hooks f f, and secured to the roof out of the way by the button F.

The door is made long enough to overlap both door-jambs B B', and the cleat or batten P' is secured to the door, so as to come in contact with the jamb B' when the inner end of the door overlaps said jamb and comes in contact with the stop-strip J. The other cleat or batten, P, is attached to the door D far enough from the jamb-post B to permit the door to be moved longitudinally and allow the overlapping part on the post B' to be released.

The jamb-post B' is provided with a mortise, in which the projecting lug z of the pinch-bar plate O is inserted, thus preventing this end of the door from rising up or falling inward.

The plate O is provided with a recess or rib, v, to furnish a means for a pinch-bar to be operated in or against; and by using the post B' as a fulcrum the door D can be forced longitudinally until the overlapping end of the door on the post B' is released and allowed to swing outward, the space I, between the batten P and door-jamb B, allowing the door free passage. One of the upper corners of the door is cut away to receive the door-holding button L. This button is of peculiar construction, to wit: The front end is made square, or to fit the end of the notch formed in the corner of the door, and the rear end is provided with a bolt-hole, t, for securing the button to the inner casing or jamb, B, of the doorway. The rear end of the button is rounded, to permit the button to be turned upward when it becomes necessary to release the door for the purpose of unloading the car, and the outer side of the button is provided with a downward-projecting lip, R, that is designed to project downward over the edge of the door and prevent the door from being forced inward when loading the car. The door is held down

by the button L when properly in its place. The front end of the button resting against the end of the notch cut in the door prevents the door from moving endwise until the button is released.

The button L may be held down and prevented from rising up by a drop-button, M, which is pivoted to the casing or jamb B directly over the button L, or by a pin inserted in a hole formed in the door-jamb above the button L. I prefer the button M, as it will always prevent the button L from rising.

The upper rear end of the notch of the door, in which the button L operates to secure the door and prevent it from moving upward, inward, or endwise, projects beyond the pivoted end *t* of said button. Thus, if the button L should be raised, the door cannot, but will permit of an end movement to release the other end of the door and allow it to swing outward.

The operation of my improved inside door for grain-cars is as follows, to wit: The door is first inserted in the doorway, between the jamb-posts B B', with the projecting lug *x* inserted in the mortise formed in the jamb-post B', and the end of the door overlapping the said jamb-post B' on the inside of the car. The other end of the door is then adjusted in the doorway and the button L turned down in the notch formed in the door, so that the end of said button will prevent the door from moving endwise, the lip R at the same time overlapping the edge of the door, and preventing it from tripping down or being forced inward while loading. Thus it will be seen that by this means of fastening the door is securely held in position, after which the grain will aid in holding the door firmly in its place.

When it becomes necessary to remove the grain from the car the button M is turned up, and the button L is also turned up, after which a pinch-bar may be applied to the plate O and the door forced longitudinally back by using the jamb-post B' as a fulcrum. As the door moves back far enough to release the overlapping end the pressure of grain on the inside forces the door to open outward, after which the door is free and may be hung up on the hooks *f f* on the inside, and secured to the roof by the button F.

What I claim, and desire to secure by Letters Patent, is—

1. In a freight-car, the solid door D, having a receptacle to receive the stop or button L, and having ends that overlap both door-jambs on the inside of the car, and provided with a pinch-bar plate, O, having a lug, *x*, that fits into a mortise formed in the jamb-post B', combined with the stop or button L, whereby said door is held in position and prevented from rising up, falling inward, or being moved endwise until the stop or button L is moved to release the door, substantially as set forth and described.

2. In a freight-car, the solid door D, held in the door-frame by the lug *x* and the stop or button L, and adapted to be removed by disengaging the stop L and forcing or sliding the door longitudinally, thereby permitting the door to open outward, substantially as shown and described.

3. In combination with a grain-door, D, when said door is adapted to slide longitudinally, the stop or button L, having a lip, R, by means of which the door is prevented from moving endwise, inward, outward, or upward until released by disengaging the stop or button L, substantially as set forth and described.

4. The stop-button L, having a lip, R, to overlap the door and prevent it from falling or being forced inward while loading, and also provided with the round part at its rear end to permit the button or stop to be turned up, and at the same time hold the door down, but release the lip R, so that the door is free to be moved inward or endwise, substantially as shown and described.

5. In a freight-car, the solid door D, provided with a pinch-bar plate at one end, and having a lock or stop at its opposite end, when adapted to slide longitudinally, and thereby open outward, by the aid of a pinch-bar operated in or against the pinch-bar plate, using the jamb-post of the doorway as a fulcrum, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID F. SPEES.

Witnesses:

E. O. FRINK,
GEORGE H. RENNETT.