

(No Model.)

L. J. MASON & G. N. WALKER, Jr.

GRAIN DOOR FOR FREIGHT CARS.

No. 310,600.

Patented Jan. 13, 1885.

Fig. 1.

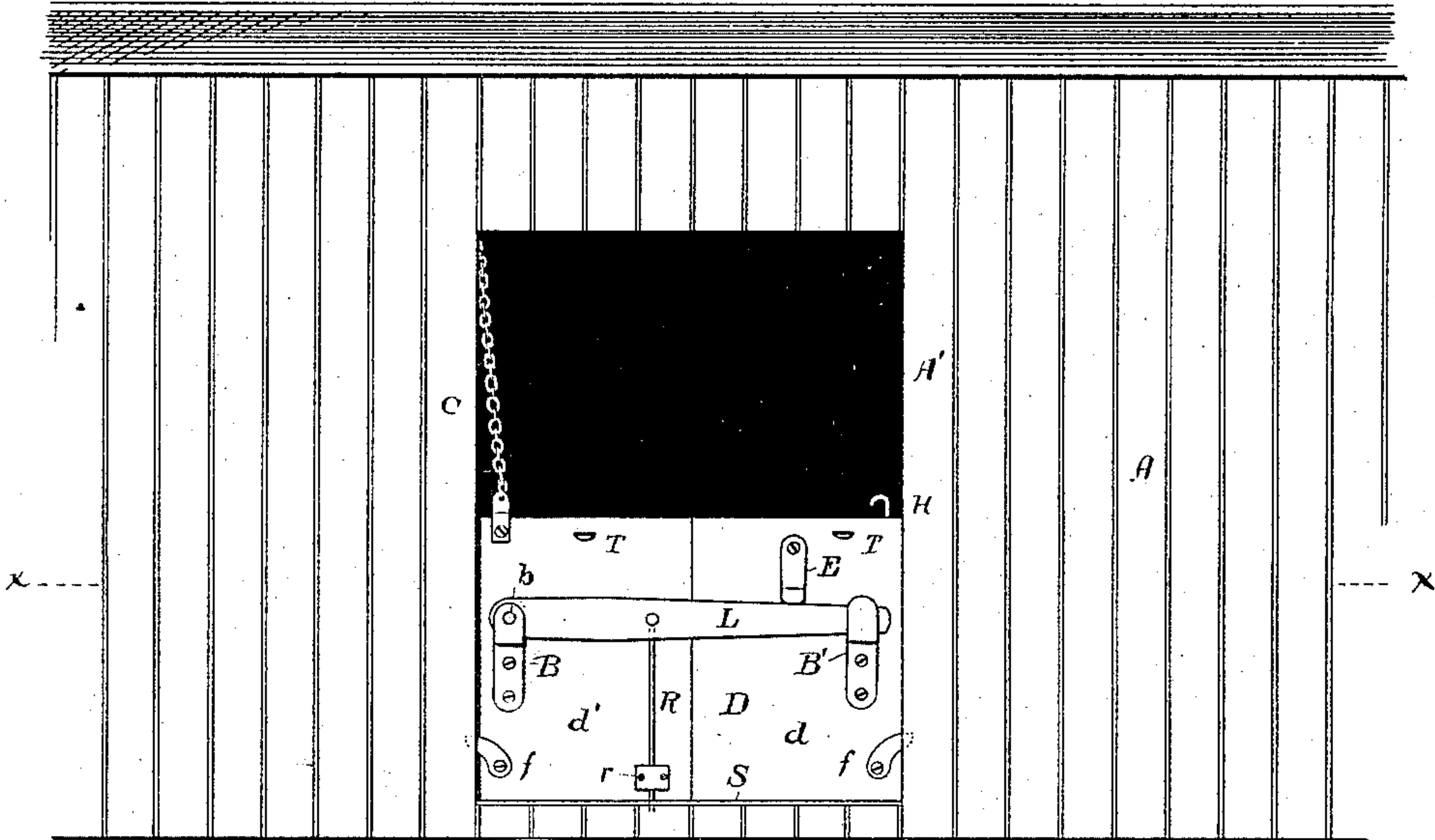


Fig. 2.

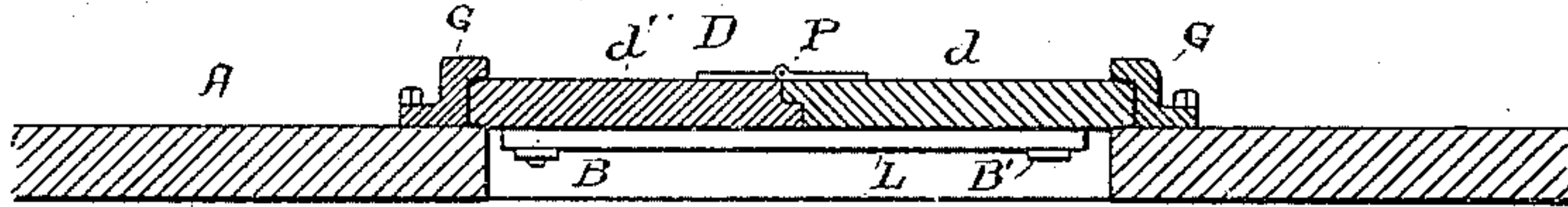
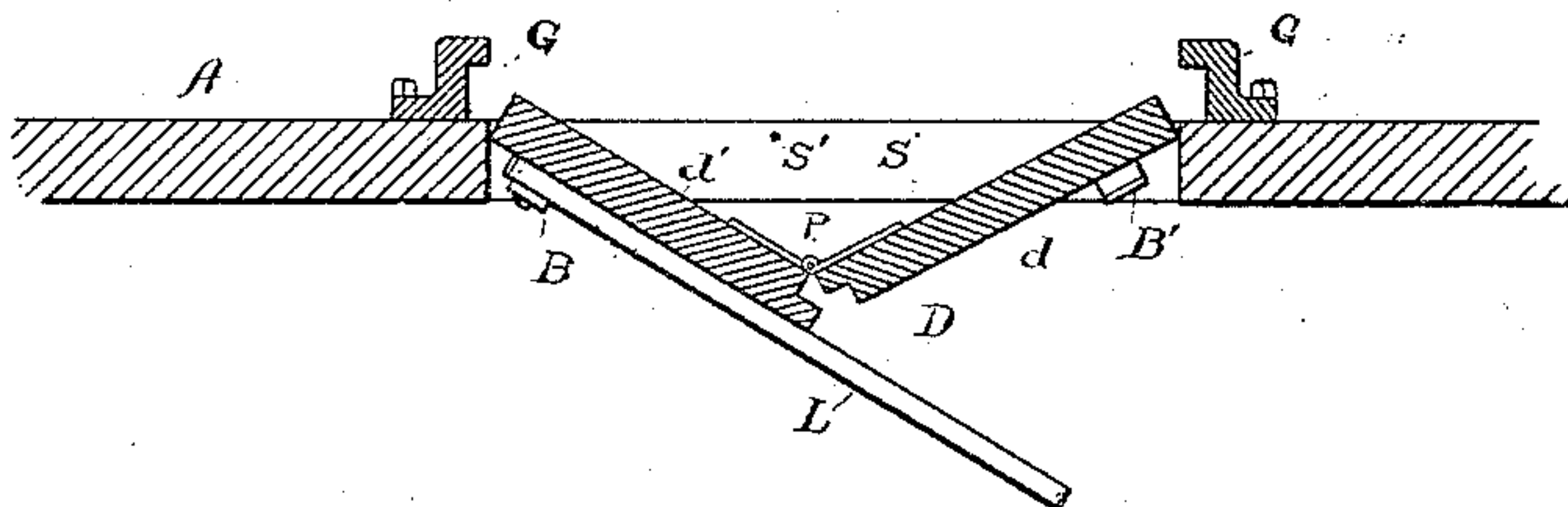


Fig. 3.



Witnesses:

H. W. Wells.

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Lafayette J. Mason,

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per A. B. Upham, their Atty.

UNITED STATES PATENT OFFICE.

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GRAIN-DOOR FOR FREIGHT-CARS.

SPECIFICATION forming part of Letters Patent No. 310,600, dated January 13, 1885.

Application filed August 18, 1884. (No model.)

To all whom it may concern:

Be it known that we, LAFAYETTE J. MASON and GEORGE N. WALKER, Jr., of Peoria, in the county of Peoria, in the State of Illinois, have invented an Improved Grain-Door for Freight-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents an elevation thereof; Fig. 2, horizontal section at *xx* in Fig. 1; Fig. 3, similar section showing the grain-door partially opened.

This invention is in the line of doors for tightly sealing the lower halves of freight-car doorways, and thereby adapting the cars for the carrying of grain. Doors for this purpose as previously constructed are most if not all designed to be opened by raising vertically until out of the way of the load of grain. As the grain presses with a large amount of force against its confining walls considerable energy is required to raise such doors, and injury is liable to result from impatient workers.

To make a door which shall be free from the above objections is the object of the following device, which consists, essentially, of the combination of two vertically and pivotally conjoined leaves and a bar adapted to prevent their flexure or to permit it, as desired.

In the drawings, A represents a portion of the side of a freight-car, and A' the doorway therethrough. The external horizontally-sliding door that is always supplied to this doorway is not shown in the drawings.

The grain-door D which we have devised consists of the two leaves *d d'*, hinged together at a central vertical juncture by means of the hinges P. The door is made wider than the doorway A', and ways G are provided to retain said door D in place. By having said hinges on the inside of the leaves *d d'* the door D flexes outwardly, as shown in Fig. 3.

To have the door D held rigidly in place and prevent its folding, we secure a strong bar, L, formed of either wood or metal, across the outer face of said door. One end of said bar L is pivotally secured to the leaf *d'* by means of the clip B and a bearing-pin, *b*, there-through. The other end of said bar L is se-

cured to the leaf *d* by means of the clip B', into which said end is dropped. A pawl, E, pivoted to the leaf *d*, serves, when turned down, to prevent the lever L from disengaging itself from the clip B'.

To relieve the bar L of a part of the strain consequent upon its duty of holding the door D against the pressure of the grain, we furnish a bolt, R, whose lower end, entering an opening, *s'*, in the sill *s* of the doorway, holds the lower edge of the door. A strap, *r*, retains said bolt in place upon the leaf *d'*. The two leaves *d d'* being rabbeted at their joining edges, as shown, the supporting of the leaf *d'* stays the other leaf also. Such rabbeting is adapted, in addition, to prevent the escape of grain through the joint thereat. Said bolt R we prolong and attach its upper end to the bar L. By this means, when the said bar is released from the clip B', the bolt R is simultaneously withdrawn from its retaining-seat in the sill *s*.

To prevent the door from being raised and grain escaping from beneath it, latches *f* are provided, which, being pivoted to said door and entering notches in the jambs of the doorway A', accomplish the desired result. A chain, C, fastened at one end to a corner of the door and at its other end to a higher point inside the car, prevents the door D from falling after having been thrown open.

When the car is empty and it is desired to put the grain-door out of the way, said door is swung around on the chain C as a hinge, and secured against the inner face of the car-side A by means of a chain or other catch engaging with the hook H on the leaf *d*.

When it is wished to open our door, the pawl E is turned to one side and the non-pivotal end of the bar L knocked upwardly out of contact with the clip B'. The bolt R being at the same instant withdrawn, the pressure of the grain within the car causes the door D to buckle outwardly at its center. This buckling of course brings the lateral edges of the door toward each other until their distance apart is less than the width of the doorway. The door now drops freely out and hangs suspended by the chain C while the grain pours out.

We supply hand holes or notches T near the upper edge of the door by which to handle the same.

What we claim as our invention, and for which we desire Letters Patent, is as follows, to wit:

1. The combination, in a grain-door for freight-cars, of two hinged leaves, a securing lever pivoted to one of said leaves and engaging with a clip on the other of said leaves, and a bolt pivoted to said lever and adapted to enter an eye in the sill of the doorway, substantially as and for the purpose specified.

2. In a grain-door for freight-cars, two hinged leaves adapted to be opened outwardly by the pressure of the contained grain, in combination with a bar pivoted to one of said leaves, means for securing said bar to the other of said leaves, and a bolt pivoted to said bar and arranged to enter an eye in the sill of the doorway, substantially as and for the purpose set forth.

3. In a grain-door for freight-cars, the leaves $d d'$, hinged together as described, in combination with the bar L, the pivotal clip B, the

open clip B', and the bolt R, attached to said bar, substantially as and for the purpose herein described.

4. The rabbeted leaves $d d'$, hinged together as described, in combination with the bar L, the pivotal clip B, the open clip B', and the pawl E, as set forth.

5. The grain-door D, consisting of the leaves $d d'$, the bar L, pivoted to one of said leaves, the pawl E, the pivotal clip B, the open clip B', the bolt R, pivoted to said bar, in combination with the latches I, the chain C, and the hook H, as and for the purposes described.

In testimony that we claim the foregoing invention we have hereunto set our hands and seals this 13th day of August, 1884.

LAFAYETTE J. MASON.
GEORGE N. WALKER, JR.

Witnesses:

A. B. UPHAM,
A. KEITHLEY.