No. 827,026. PATENTED JULY 24, 1906.

C. H. LUTHMAN.

GRAIN CAR DOOR.

APPLICATION FILED JAN. 16, 1905.

2 SHEETS—SHEET 1

Fig. 1.

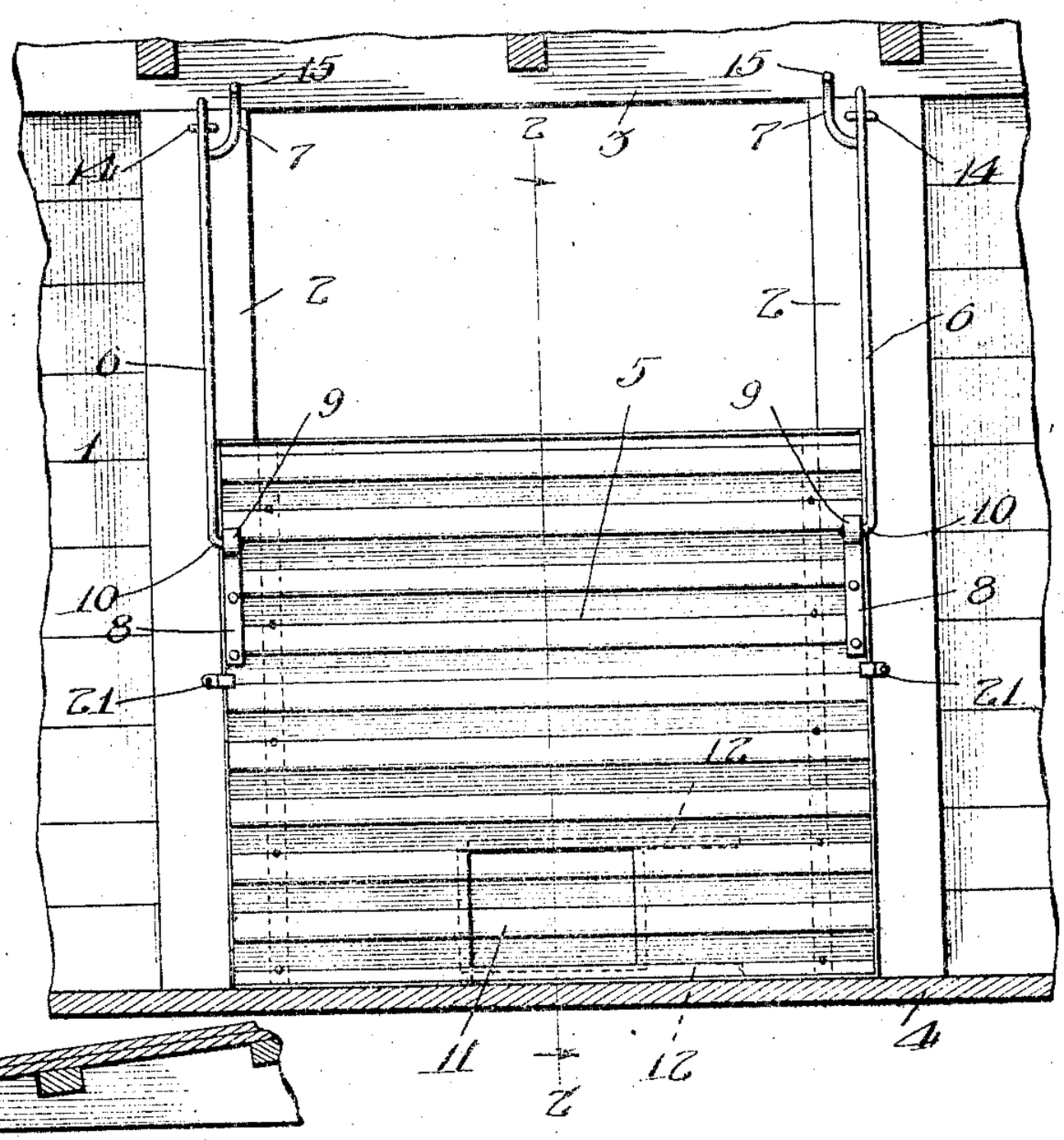

Fig. 2.

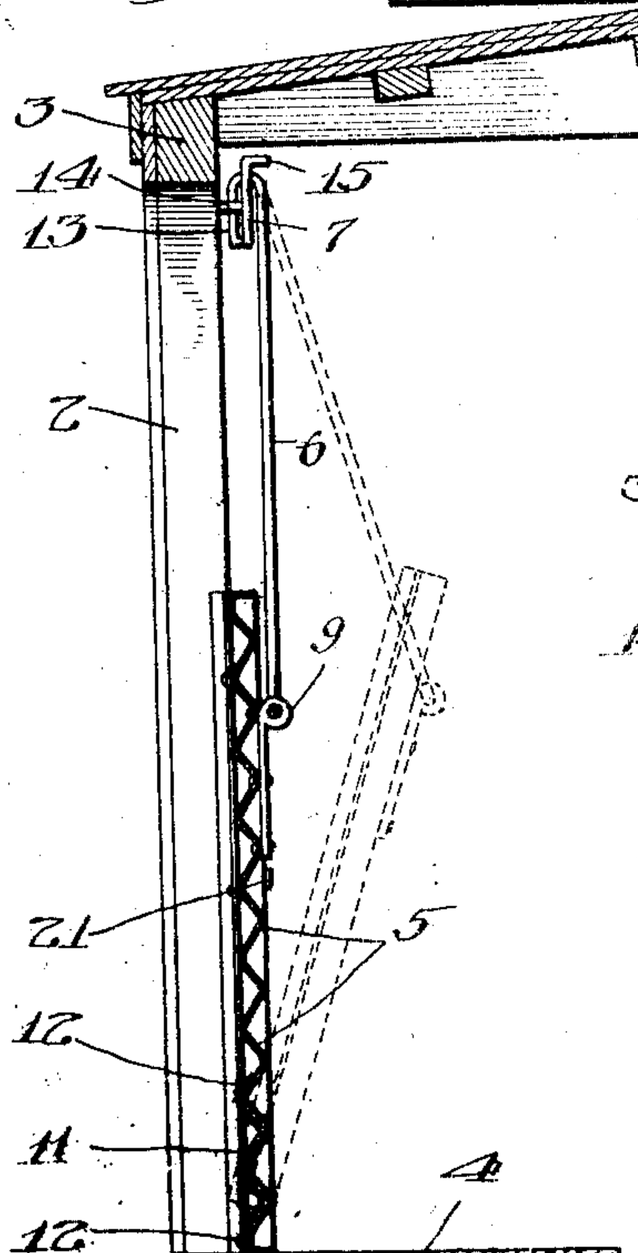

Fig. 3.

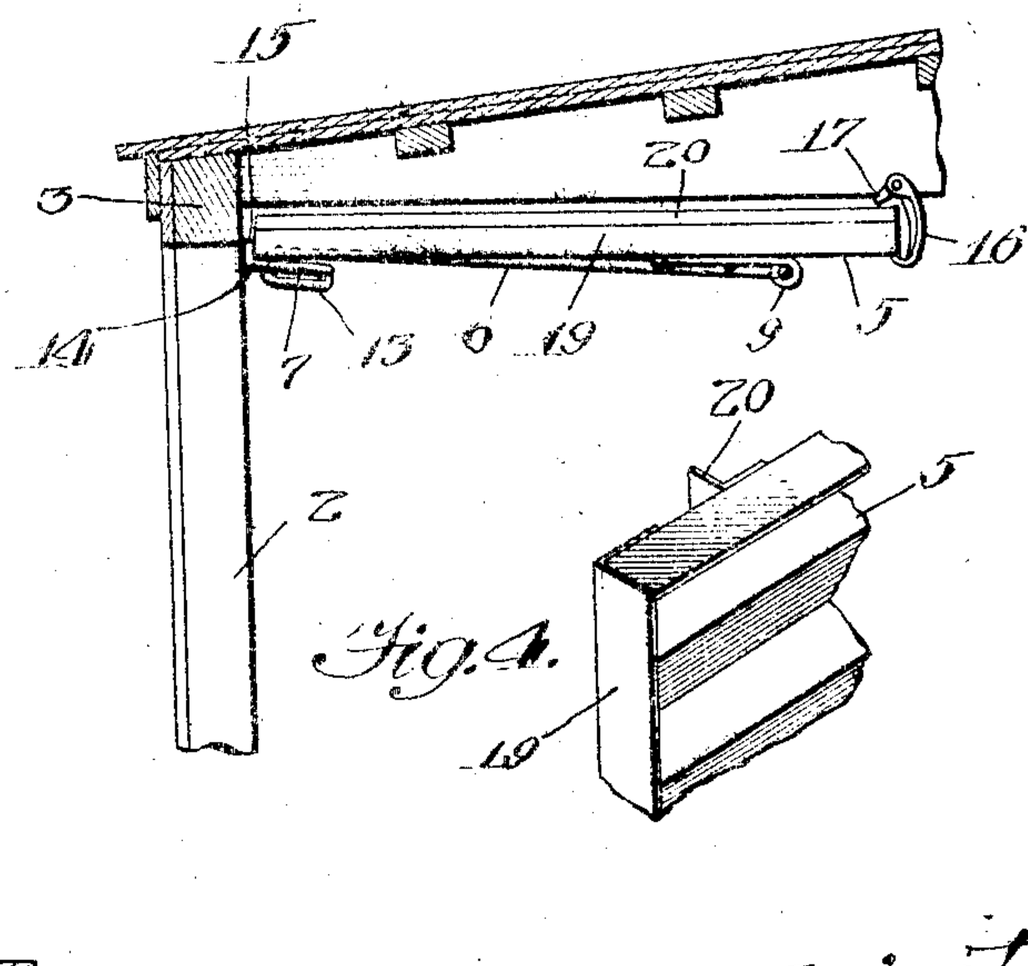

Fig. 4.

Witnesses:
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E. C. Lomans

Inventor:
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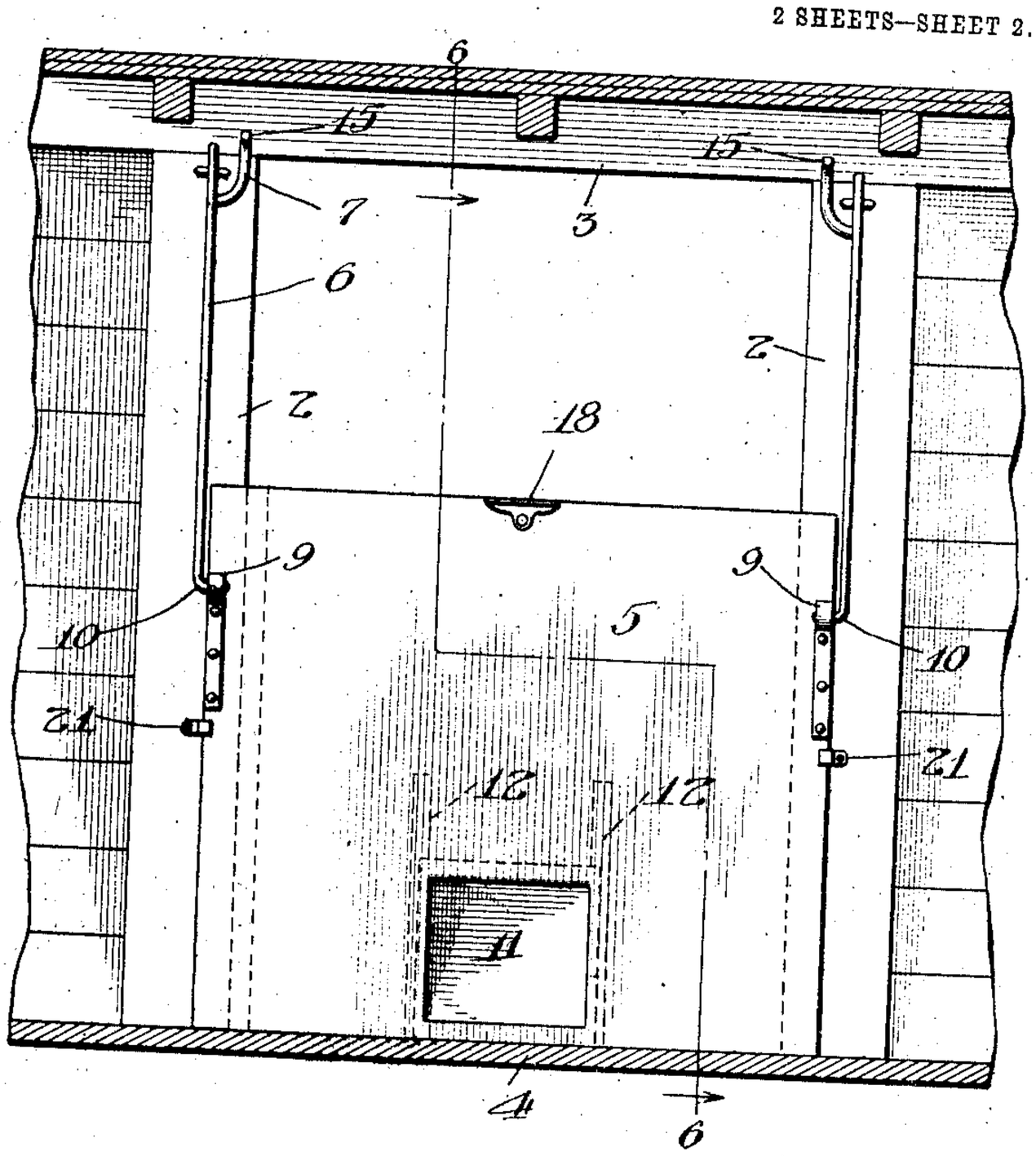
2 SHEETS—SHEET 2.

Fig. 5.



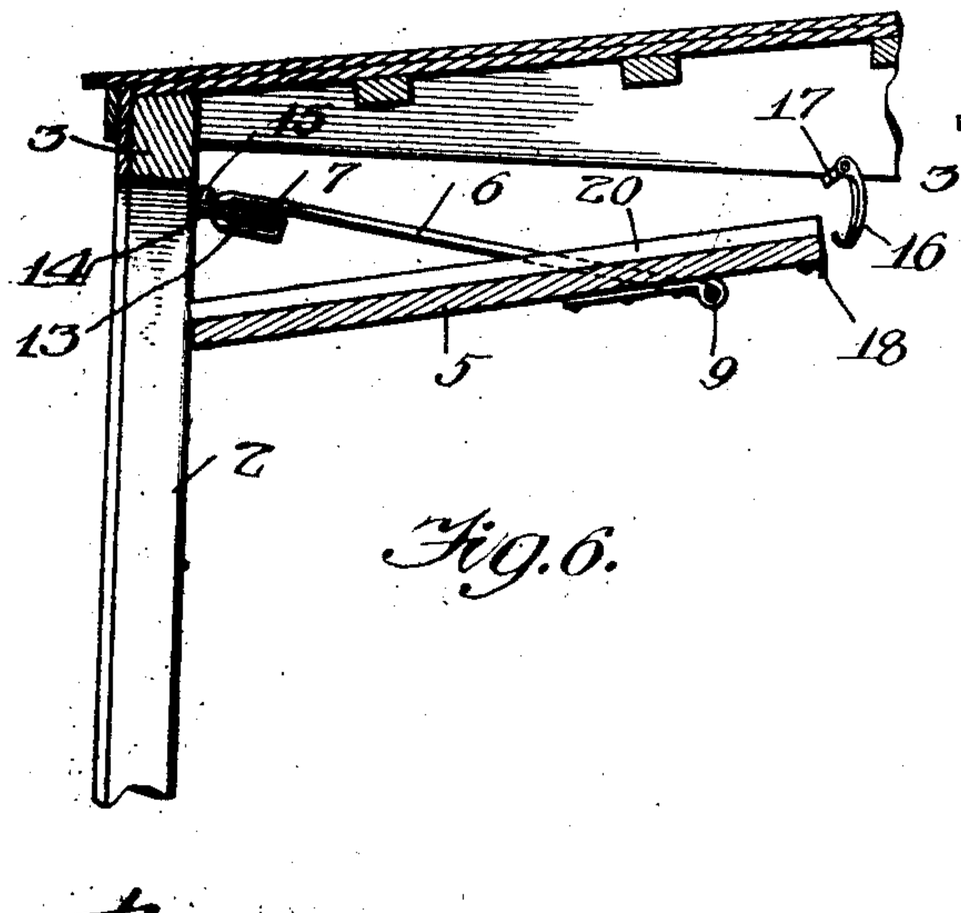


Fig. 6.

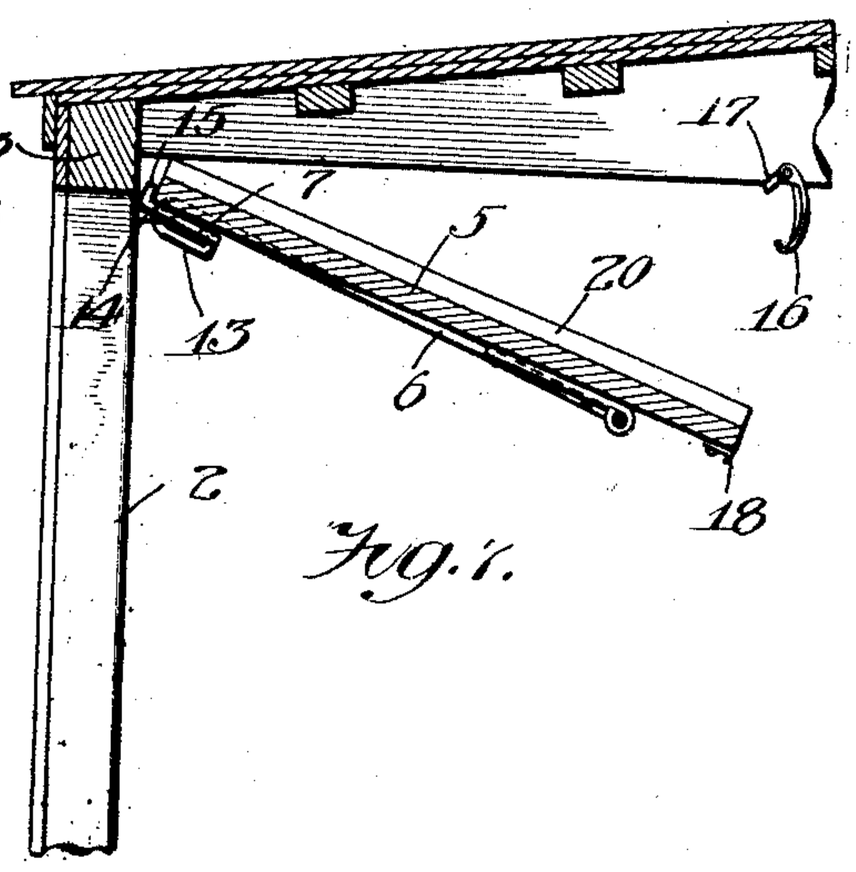


Fig. 7.

Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES H. LUTHMAN, OF HAMMOND, INDIANA

GRAIN-CAR DOOR.

No. 827,026. Specification of Letters Patent. Patented July 24, 1906.

Application filed January 16, 1905. Serial No. 241,257.

To all whom it may concern:

Be it known that I, CHARLES H. LUTHMAN, a citizen of the United States of America, residing at Hammond, county of Lake, and State of Indiana, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is a description.

My invention belongs to that class of devices employed in grain-cars to retain the grain in place and prevent its escape through the ordinary car-door. Its object is to provide a more simple, convenient, and effective device for the purpose than is now available.

To this end my invention consists in the novel construction, arrangement, and combination of parts herein shown and described, and more particularly pointed out in the claim.

In the drawings, wherein like or similar reference characters indicate like or corresponding parts, Figure 1 is an elevational view of my improved car-door and its connections, taken from the interior of the car. Fig. 2 is a vertical section of the san e, taken substantially on line 2 2 of Fig. 1. Fig. 3 is a view taken substantially on the same line, showing the door folded back and secured in such position near the top of the car. Fig. 4 is a perspective view of a corner of the preferred form of metal door, showing the details of construction. Fig. 5 is a view similar to Fig. 1, showing a wooden door with slight modifications. Fig. 6 is a partial section on line 6 6 of Fig. 5, showing a convenient method of manipulating the door while emptying the car; and Fig. 7 is a similar view showing the position of the parts as the door is being folded and secured after the car is emptied.

In the drawings, 1 represents the side of a car; 2 2, the side, and 3 the top, of the door-frame therein.

4 represents the car-floor at the door.

5 is a suitable door adapted to extend across and close the lower part of the door-opening, supported against outward pressure by its ends extending by and resting in contact with the sides 2 2.

6 6 are links pivotally connected at one end near the top of the frame, as shown. Each link is provided with an outwardly and preferably upwardly projected extension 7 for a purpose hereinafter explained. The links 6 are arranged outside the end planes of the door 5, with their free end pivotally connected thereto. As shown, suitable straps 8 8 are secured to the ends of the door, each provided with an eye 9, with which the angular free end 10 of each link pivotally engages. The point of engagement is optional; but it is preferably some little distance below the top of the door, as shown, to permit added height thereto as desired.

At or near the bottom of the door a supplemental door 11 is provided, which may be initially opened in discharging the car. As shown, the door 11 slides in suitable guides 12 and may be readily moved aside to draw off a part of the grain and relieve the pressure on the door 5. The connection of the links 6 with the frame is preferably such as to permit a limited vertical movement of the door, insuring at all times a close contact of the lower edge of the door with the car-floor 4. Such construction also obviates the necessity of extreme accuracy in assembling the parts and hanging the door. As shown, the links 6 consist of rods having the upper ends bent to form a slot 13, which engages the eye in a bolt 14. The end of the rod is then bent inward to form the extension 7 and preferably terminates in an angular section 15, which when the door is folded and secured in position rests against the frame to prevent movement of the door caused by the lateral swinging of the car. A suitable latch 16 or equivalent means secured to the car-roof is arranged to engage the free edge of the door when the latter is folded and securely maintain the same in position, as shown in Fig. 3. In the preferred form the latch is provided with an extension 17, so formed that the door when hastily thrown up will first contact with the extension, which action will positively swing the engaging part of the latch forward and engage the same with the edge of the door. When a plain or wooden door is used, a clip 18, secured to the edge of the door, or an equivalent construction may be employed to securely lock the latch and door together.

In the preferred construction (shown in Figs. 1 to 4) the door is composed of corrugated or crimped metal provided with end stays 19, of angle-iron, to stiffen the door transversely, as well as to close the indentations to prevent leakage of grain thereby. Such other stiffening-ribs may be employed as desired, as shown at 20. The corrugations serve to stiffen the door sufficiently longitudinally, and the whole results in a light

and serviceable door, which is not as likely to be stolen from the car as a wooden door. In this form the supplemental door 11 slides longitudinally the main door 5.

If desired, any means may be employed to firmly hold the door in position during the filling operation. As shown, buttons 21 on the side frames 2 engage with the ends of the door and serve to hold them in close contact with the frames.

In operation the supplemental door 11 may be opened and sufficient grain removed thereby to draw off the grain near the door and relieve the outward pressure thereon. The buttons 21 may then be released, when the top of the door may be pressed inward, permitting the bottom to rise, as shown in Fig. 2 in dotted lines. When sufficient grain has been removed, the lower edge of the door may be readily moved upward, as shown in Fig. 6, the drawing of the links serving to retain the door in such position and permitting free ingress and egress to and from the car. When the car is emptied or sooner, if desired, the door is turned in the opposite direction upon the pivotal connection 9 10 as a center, the corners at the bottom of the door lying upon the extensions 7 7, when the whole may be swung upward on the pivotal connection 13 14 as a center, the free edge of the door engaging the hook or latch 17 16, as described, and being firmly retained in such position thereby. By reversing the operation the door may be readily positioned for use, as described.

Having thus described my improvement, it is obvious various immaterial modifications may be made without departing from the spirit of my invention. Hence I do not wish to be understood as limiting myself to the exact form and construction shown.

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

A device of the kind described, comprising a door, and a frame, in combination with links positioned beyond the ends of the door and pivotally attached to both door and frame, the attachment to said frame permitting limited longitudinal movement to said links, and an extension upon each link substantially in the plane of said door near said attachment, whereby said door may be positioned with one edge resting upon said extensions and swung upward, a portion of the extensions engaging said frame when so positioned to prevent longitudinal movement of said links and door, and means for maintaining the parts in such position.

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

CHARLES H. LUTHMAN.

Witnesses:
BURTON U. HILLS,
CHARLES I. COBB.