

No. 769,706.

PATENTED SEPT. 13, 1904.

G. L. MERRILL.
GRAIN DOOR.

APPLICATION FILED SEPT. 28, 1903.

NO MODEL.

Fig. 1.

Fig. 2.

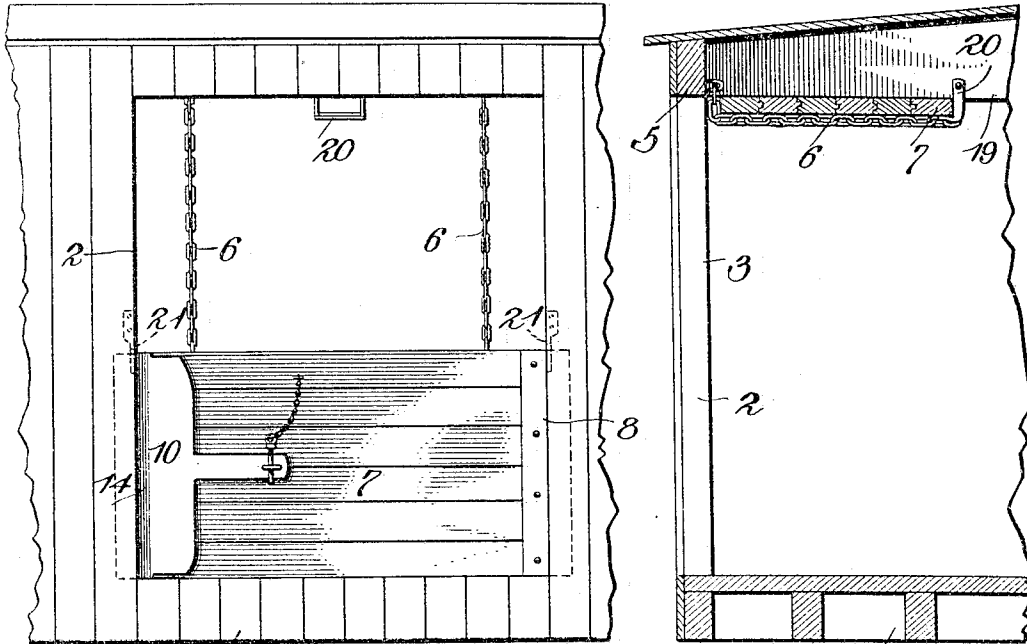


Fig. 3.

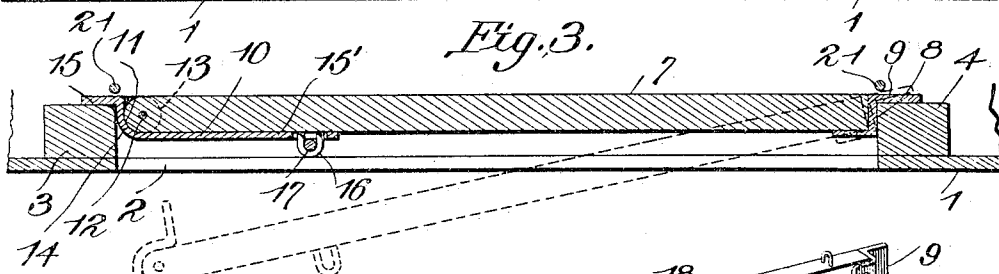


Fig. 5.

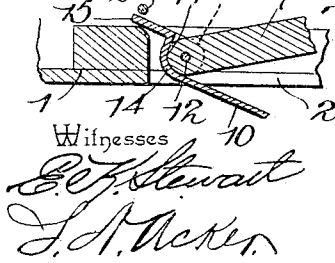
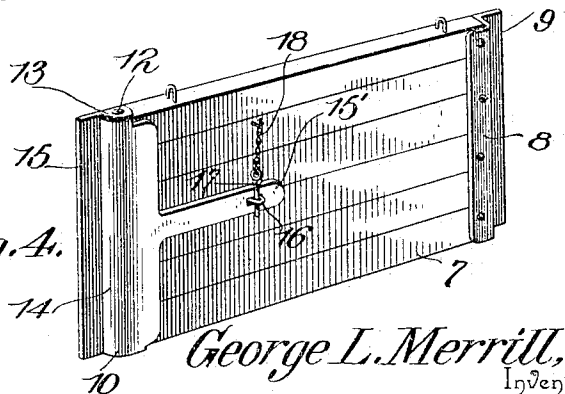


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE LYMAN MERRILL, OF EUREKA SPRINGS, ARKANSAS.

GRAIN-DOOR.

SPECIFICATION forming part of Letters Patent No. 769,706, dated September 13, 1904.

Application filed September 28, 1903. Serial No. 174,983. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LYMAN MERRILL, a citizen of the United States, residing at Eureka Springs, in the county of Carroll and State of Arkansas, have invented a new and useful Grain-Door, of which the following is a specification.

This invention relates to an improved grain-car door, and has for its object to provide a simple, inexpensive, and efficient device of this character capable of being quickly opened to permit the discharge of the grain from the car, and which may be readily folded and suspended from the top of the car when not in use.

A further object of the invention is to provide a novel form of fastening for the door capable of withstanding the weight or pressure of the grain or other material within the car, and which will permit the door to swing outwardly and discharge the contents of the car when released without the necessity of prying or otherwise manually opening said door.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a car, showing a grain-door constructed in accordance with my invention applied thereto. Fig. 2 is a horizontal sectional view showing the position of the door when folded. Fig. 3 is a longitudinal sectional view showing in dotted lines the position of the door when open. Fig. 4 is a detail perspective view of the grain-door detached, and Fig. 5 is a detail sectional view illustrating the manner of releasing the door.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a grain-car, of the ordinary form and construction, having the usual door-opening 2 and oppositely-disposed door posts

or jambs 3 and 4, connected by a cross-bar or lintel 5. Suspended by a chain or other flexible medium 6, secured to the cross-bar 5, is the grain-door 7, formed of wood, metal, or other suitable material capable of withstanding the weight or pressure of the grain or other material within the car, said door being preferably of sufficient width to fit snugly between the door-posts 3 and 4, as clearly shown in Fig. 3 of the drawings. Secured to one end of the door 7 is a bearing-plate 8, provided with an outwardly-projecting retaining-flange 9, which normally bears against the post 4 and prevents the door from being forced outwardly until the locking member 10 is released. The opposite end of the door 6 is curved or rounded, as shown at 11, and forms a bearing for the locking member 10, said member being pivotally secured to the end of the door by means of pins or a rod 12, passing through suitable ears or lugs 13, preferably formed integral with said member. One end of the locking member 10 is provided with an offset portion 14, and a retaining-flange 15, which bears against the post 3 and serves, in conjunction with the flange 9, to retain the door in its proper position, the opposite end of said member being reduced to form a locking-tongue 15', as shown. The end of the tongue 15' is slotted, being adapted to receive an eye or staple 16, secured to the outer face of the car-door, a pin or bolt 17, carried by a chain 18, engaging said staple and holding the member 10 stationary and preventing the door from being opened until the pin is withdrawn. Secured to the carline or cross-beam 19 of the car is a hook or catch 20, adapted to engage the door 7 and hold the same in an elevated position when not in use, as clearly shown in Fig. 2 of the drawings.

The bearing-plate 8 and retaining-flange 15 engage angle straps or keepers 21, secured to the posts 3 and 4, and prevent the grain-door from being forced inwardly or upwardly, while at the same time permitting the door to automatically swing outwardly when the pin 17 is released.

In operation when the car is loaded and the door closed said door is held in position by the angle-straps 21 and the flanges 9 and 15, en-

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gaging the corner-posts 3 and 4. When it is desired to unload the car, the locking-pin 17 is withdrawn, the weight of the grain or other material in the car causing the locking member to turn on its pivot, releasing the door and permitting the same to swing outwardly and discharge the contents of the car, as illustrated in Figs. 3 and 5. When not in use, the door may be supported in an elevated position by means of the hook or catch 20.

From the foregoing description it will be seen I have provided an exceedingly simple and inexpensive grain-car door, the relative disposition of the several parts being such that the door will automatically open as soon as the locking-pin is withdrawn.

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

1. In a grain-car, the combination with a solid door removably mounted between the adjacent faces of the door-posts, a stationary member secured to one end of the door and adapted to engage the adjacent door-post, a locking member pivoted to and covering the opposite end of the door and adapted to engage the second post, and means for securing said pivoted member in the locked position.

2. In a grain-car, the combination with a solid door removably mounted between the adjacent faces of the door-posts and adapted to swing outwardly between said posts, a locking member pivoted to and covering one end of the door, said member being provided with a retaining-flange adapted to engage the adjacent door-post, and means for securing said member in the locked position.

3. In a grain-car, the combination with a removable door adapted to swing outwardly between the door-posts, a retaining-plate secured to one end of the door and loosely fulcrumed on one of the posts, a locking member pivoted to the opposite end of the door, and means for securing said member in the locked position.

4. In a grain-car, the combination with a solid door removably mounted between the adjacent faces of the door-posts and adapted to swing outwardly between said posts, a stationary member secured to one end of the

door and adapted to engage the adjacent post, a locking member pivoted to the opposite end of the door and provided with a flange for engagement with the second post, and means for securing said pivoted member in the locked position.

5. In a device of the class described the combination with a removable door, of the door-posts, a locking member pivoted to one end of the door and provided with a retaining-flange adapted to engage one of said door-posts, a bearing-plate rigidly secured to the opposite end of the door and loosely fulcrumed on the second post and means for securing the pivoted member in the locked position.

6. In a device of the class described the combination with a solid door having one end thereof curved or rounded and a locking member pivoted to and covering the curved end of the door for locking said door against outward movement.

7. In a grain-car, the combination with a removable door adapted to swing outwardly between the door-posts, a locking member pivoted to and covering one end of the door and a retaining-plate secured to the other, an eye or staple secured to the door and adapted to engage the pivoted member and a pin or bolt passing through said staple and pivoted member for securing the same in the locked position.

8. In a grain-car, the combination with the door-posts, cross-bar, and carline, of a door adapted to swing outwardly between the door-posts provided at one end with a pivoted locking member and at its opposite end with a retaining-plate loosely fulcrumed on one of the door-posts, a flexible connection between the cross-bar and the door and a hook or catch secured to the carline and adapted to engage the door for supporting the same in an elevated position.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE LYMAN MERRILL.

Witnesses:

B. A. LANGSTON,
C. L. BALL.