

(No Model.)

G. H. TREADGOLD & J. E. MILLS.  
GRAIN CAR DOOR.

No. 568,182.

Patented Sept. 22, 1896.

Fig. 1.

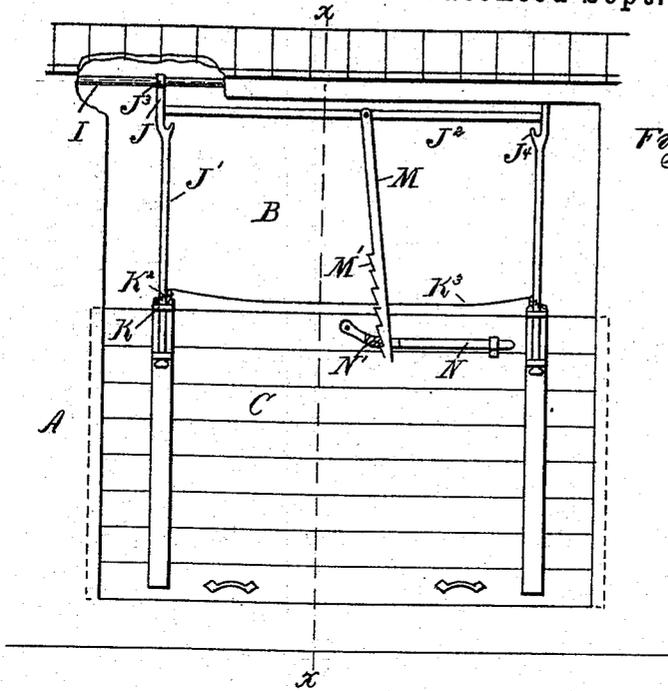


Fig. 2.

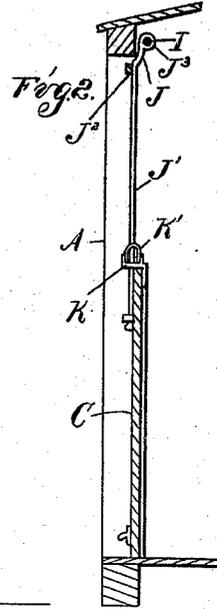


Fig. 3.

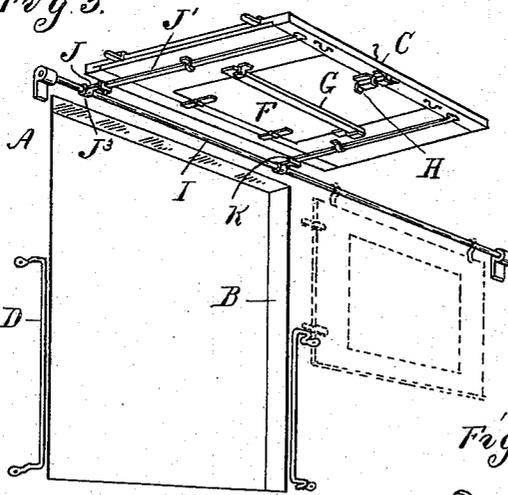


Fig. 4.

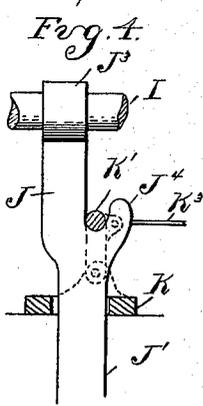
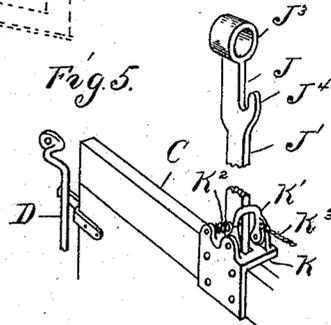


Fig. 5.



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# UNITED STATES PATENT OFFICE.

GEORGE H. TREADGOLD AND JOHN E. MILLS, OF PORT HURON, MICHIGAN.

## GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 568,182, dated September 22, 1896.

Application filed October 21, 1895. Serial No. 566,331. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE H. TREADGOLD and JOHN E. MILLS, citizens of the United States, residing at Port Huron, in the county of St. Clair and State of Michigan, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the peculiar construction, arrangement, and combination of parts, all as more fully hereinafter described.

In the drawings, Figure 1 is an exterior view showing the door in a closed position. Fig. 2 is a cross-section on line *x x*, Fig. 1. Fig. 3 is a perspective view looking from inside the car and showing the door in its raised position. Fig. 4 is an elevation of one of the supporting-rods. Fig. 5 is a perspective view of a portion of the door and supporting-rod.

A is the car. B is the door-opening, and C is the door. The latter is of sufficient width to extend across the door-opening and have a bearing on the inner face of each of the posts, being, preferably, of somewhat more than one-half the height of the opening.

D are rails upon the door-posts, and E are plates upon the door adapted to slidingly engage with said rails, holding the door against the posts. Within this door we preferably provide an opening closed by a smaller door F, hinged or otherwise detachably secured to the main door, as shown in Fig. 3 of the drawings. This door is adapted to open outwardly, being provided with suitable means, such as the cross-bar G and the bolt H, for locking it in its closed position.

I is a horizontal rod or rail secured to the casing above the door-opening and extending to one side thereof for a distance equal to the width of the door.

J is a hanger, preferably comprising the hanger-rods J<sup>1</sup> and connecting cross-bar J<sup>2</sup>. The rods J<sup>1</sup> are provided at their upper ends with the hooks or rings J<sup>3</sup>, slidingly secured upon the rail I, and extend downward to the door, which is slidingly secured thereto by means of the apertured bearing-plates K.

J<sup>4</sup> are hooks formed near the upper ends of the rods J<sup>1</sup>.

K<sup>1</sup> are hooks or bails upon the plates K, adapted to engage with the hooks J<sup>4</sup>.

K<sup>2</sup> are springs for throwing the bails automatically into engagement with the hooks.

The parts being thus constructed and arranged, when it is desired to unload the car the small door may first be opened, and after a portion of the grain is taken out the main door may be raised by sliding it up on the rods J<sup>1</sup>. This may be done either by lifting on the handles L or by means of the device shown in Fig. 1 of the drawings, in which M is a link pivoted at its upper end to the cross-bar J<sup>2</sup> and provided at its lower end with the ratchet-teeth M<sup>1</sup>.

N is a lever pivotally secured to the door C and provided with a shoulder N<sup>1</sup>, adapted to engage with the ratchet-teeth. By means of this device the door may be quickly and easily raised by the operator, who first engages the shoulder N<sup>1</sup> with one of the ratchet-teeth on the link M and then pries up the door, the pressure of the grain inside serving to hold it in this position while he engages the lever with another tooth. When this device is used, the inner door F may be dispensed with, as its only object is to relieve the pressure on the main door sufficiently to allow it to be raised. When the door is completely raised, the bails K<sup>1</sup> automatically engage with the hooks J<sup>4</sup>. The door may now be swung inward into the position shown in full lines in Fig. 3, where it may be secured by a hook or button to the ceiling of the car, or it may be only swung sufficiently to disengage it from the rails D and then moved horizontally into the position shown in dotted lines in the same figure. In this latter position the door is not only completely out of the way, but all danger of its falling down upon the heads of the workmen is also avoided.

To admit of easily lowering the door, we preferably connect the bails K<sup>1</sup> with a wire or cord K<sup>3</sup>, by means of which the operator may withdraw them simultaneously from their engagement with the hooks J<sup>4</sup>.

What we claim as our invention is—

1. The combination with a vertically-raising door, and a horizontal rod or rail above the same, of a hanger with which said door has a vertically-sliding engagement, comprising the rod J<sup>1</sup>, the cross-bar J<sup>2</sup>, the hooks

or rings J<sup>3</sup> at the upper end of the rod slidingly secured on the rod I, the hooks J<sup>4</sup>, with which the door is adapted to engage when in its raised position and the ratchet-link M pivoted to the cross-bar J<sup>2</sup>, and the lever N on the door adapted to be engaged with said link to pry up the door.

2. The combination with a vertically-raising door, of a hanger for the door comprising the rods J' and the connecting-bar J<sup>2</sup> uniting the upper ends of the rods; the upwardly-curved hooks J<sup>4</sup> on said rods, the bearing-plates K on the door provided with apertures in which the rods J' have a vertically-sliding

engagement, the bails K' pivoted to lugs on said bearing-plates adapted to engage with the hooks J<sup>4</sup>, springs between the plates and bails, and the cord K<sup>3</sup> secured to said bails for disengaging them from the hooks J<sup>4</sup>, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE H. TREADGOLD.  
JOHN E. MILLS.

Witnesses:

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M. B. O'DOHERTY.