

(No Model.)

2 Sheets—Sheet 1.

P. J. MONAGHAN & H. MOHAUPT.
GRAIN CAR DOOR.

No. 497,193.

Patented May 9, 1893.

Fig. 1.

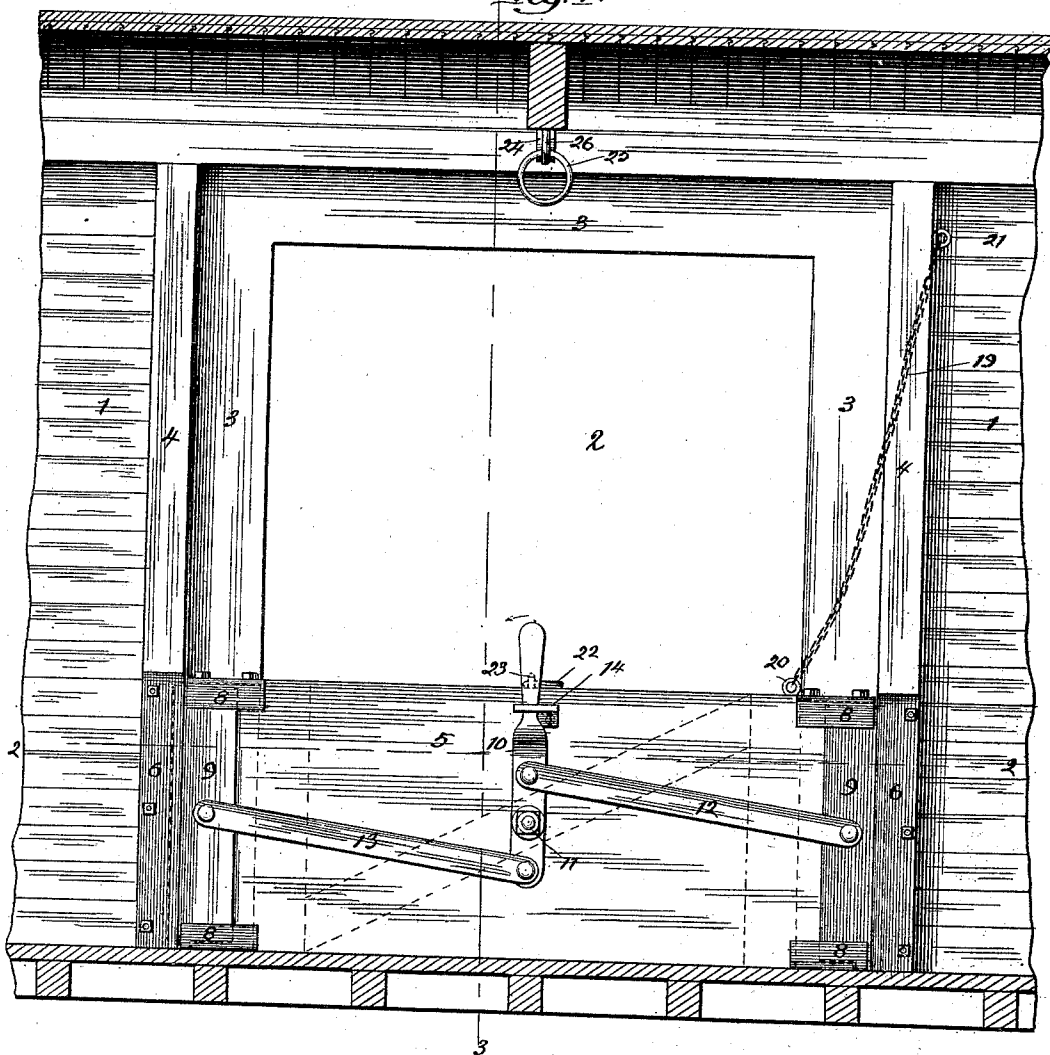
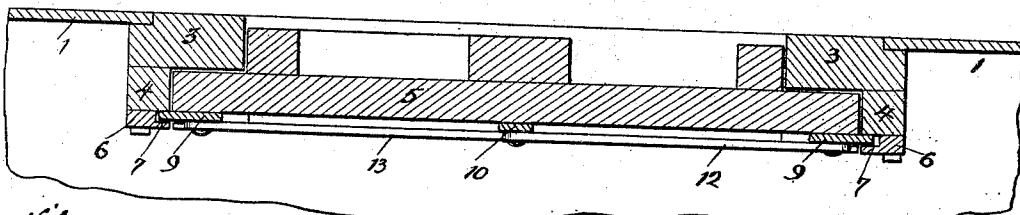


Fig. 2.



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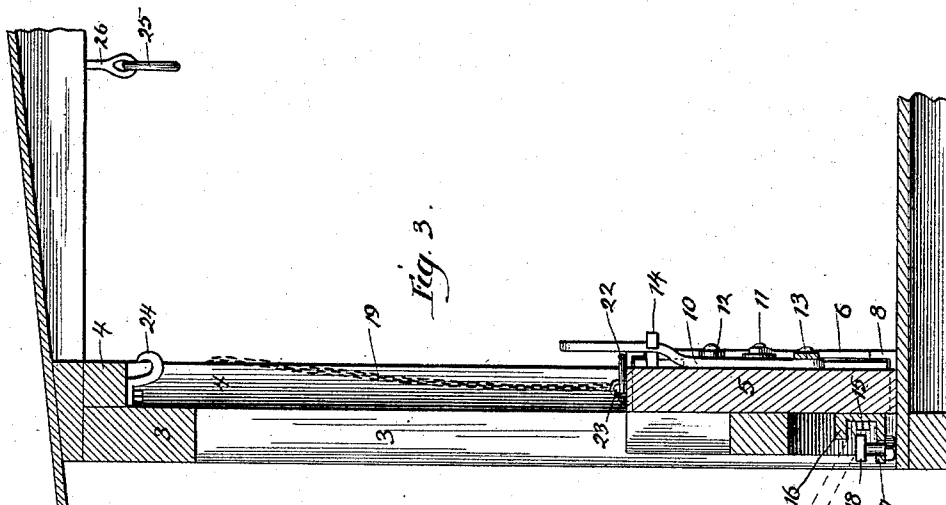
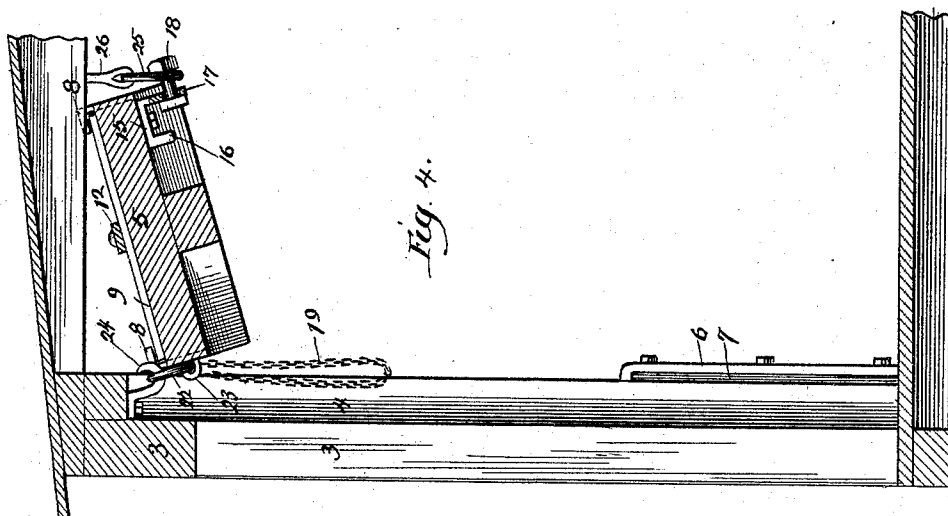
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2 Sheets—Sheet 2.

P. J. MONAGHAN & H. MOHAUPT.
GRAIN CAR DOOR.

No. 497,193.

Patented May 9, 1893.



Witnesses:

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UNITED STATES PATENT OFFICE.

PETER J. MONAGHAN AND HERMAN MOHAUPT, OF CHICAGO, ILLINOIS; SAID
MOHAUPT ASSIGNOR TO SAID MONAGHAN.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 497,193, dated May 9, 1893.

Application filed May 13, 1892. Serial No. 432,908. (No model.)

To all whom it may concern:

Be it known that we, PETER J. MONAGHAN and HERMAN MOHAUPT, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Grain-Car Doors, of which the following is a specification, reference being had to the accompanying drawings, in which—

10 Figure 1 is a side elevation as seen from the inside of the car. Fig. 2 is a longitudinal cross section from the line 2, 2 of Fig. 1. Fig. 3 is a vertical cross section upon line 3, 3 of Fig. 1; and Fig. 4 is a vertical cross section
15 upon the same line as Fig. 3, showing the door hung up against the top of the car.

The object of our invention is to provide a new and improved grain car door that can be locked and held firmly in place, and at the same time readily removed and laid aside, or
20 hung against the top of the car, when it is desirable to do so by reason of the car being used for other purposes. We attain these objects by means of the devices hereinafter described, and as illustrated in the drawings.

That which we regard as new will be pointed out in the claims.

In the drawings,—1 indicates the side of a freight car having a doorway 2.

30 3 indicates door frames, constructed of timbers of suitable size and in the ordinary manner.

4 indicates uprights secured to the inside of the upright portions of the frame 3, and extending from the floor to the top framework of the car. The uprights 4, 4 are set
35 back a suitable distance from the edges of the door opening.

5 indicates a door of suitable height, and of such length as to fit somewhat loosely between the inside edges of the uprights 4, 4, and of such thickness that its inner surface when in position may be flush with the inner surface of the uprights 4, 4, as is best seen in
40 Fig. 2.

6 indicates keepers, formed of iron or other suitable material, and secured to the lower ends of the uprights 4. The slots 7 of the keepers 6 are closed at the top, as is best
45 shown in Fig. 4.

8 indicates clips, of steel or other suitable

material, secured to the upper and lower edges of the door 5 at the ends of said door.

9 indicates locking plates, of steel or other suitable material, adapted to rest and move
55 somewhat freely in the clips 8, 8.

10 indicates a lever, of steel or other suitable material, which is pivoted to the door 5 upon the central vertical line of said door, by means of a bolt 11 or any other suitable pivot.
60 The upper end of the lever 10 is bent outward away from the door, as is best shown in Fig. 3, and extends somewhat above it so as to form a handle that may be readily grasped from the outside of the car.

12 and 13 indicate bars, of steel or other suitable material, pivoted at their inner ends to the lever 10, respectively above and below the bolt 11, and at the same distance therefrom. The outer end of the bar 12 is pivoted
65 to the right hand locking plate 9 at the center thereof, and the bar 13 is pivoted at its outer end to the left hand locking plate 9 at the center thereof.

14 indicates a clip secured to the door 5, and bent in such a manner as to engage with and lock the handle of the lever 10 in an upright position, as is best shown in Fig. 3.

15 indicates a bracket formed of a metal plate bent twice at right angles so as to form
75 the two arms 16 and 17. The bracket 15 is secured upon the outside of the door 5 upon the central vertical line thereof, and near the bottom. The lower arm 17 of the bracket 15 is somewhat longer than the upper arm, and
80 carries in a suitable opening a short bolt 18. The bracket 15 is secured to the door 5 in such a position that when the door is in place, resting upon the floor of the car, the lower end of the bolt 18 rests upon the sill of the door, with
85 its upper end projecting upward a short distance above the lower arm 17 of the bracket 15. The upper arm 16 of the bracket 15 serves as a stop to engage the end of a crow bar, for the purpose hereinafter described.

19 indicates a chain, secured at its lower end to a ring 20 upon the top edge of the door 5, and at its upper end to a ring 21, secured to the upright 4 near the top thereof.

22 indicates a ring secured by a staple 23
90 to the top of the door 5. 24 indicates a hook secured to the upper jamb of the door at the

center thereof, as is best shown in Figs. 3 and 4.

25 indicates a ring carried by an eye bolt 26, which is secured to the top of the car in such a position that when the ring 22 is hung upon the hook 24 the ring 25 may engage with the bolt 18, so as to support the door at the top of the car.

The clips 8, located at the upper and lower edges of the end portions of the door 5, not only act to guide the locking plates 9, but also serve as guards to prevent dust, dirt and grain from entering behind the ends of the locking plates and clogging their operation. The slots 15 formed by the keepers 6, are also in a measure guarded by the clips 8 at the top against the free entrance of dirt or grain thereinto.

The operation of our device is as follows:— In Fig. 1 the door is shown as locked in position in the door frame. When it is desired to remove the door the lever 10 is sprung toward the outside of the car so that the lever may be released from the clip 14; the lever is then moved in the direction indicated by the arrow in Fig. 1; this causes the locking plates 9 to be drawn out of the keepers 6 toward the center of the car, so as to free them from the keepers 6; the door may then be readily removed from its place, and laid to one side, or hung upon the top of the car, as indicated in Fig. 4. In case the door sticks, as frequently happens, a crow bar can be inserted between the top of the bolt 18 and the inner surface of the upper projection 16 of the bracket 15, as is shown by the dotted lines in Fig. 3; by bearing down upon the outer end of the lever the door will be forced upward a short distance, and may then be readily removed.

We have shown the bracket 15 as formed of a metal plate bent twice at right angles to form the arms 16 and 17; we do not wish to limit ourselves to forming the arms integral with said bracket as shown, as they may be formed separate from each other and secured to the door in any suitable manner. Neither do we wish to limit ourselves to the exact shape of the arms, but the form shown is that which we prefer.

That which we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of a door 5 having the clips 8 at the upper and lower edges of its opposite ends, the locking plates 9 having their upper and lower ends located under said clips, the keepers 6, the lever 10 pivoted intermediate its extremities to the door, and the bars 12 and 13 pivoted to the lever above and below its pivotal attachment to the door and connected with the locking plates, substantially as described.

2. The combination of a door 5 having the clips 8 at the upper and lower edges of its opposite ends, the locking plates 9 having their upper and lower ends located under said clips, the keepers 6, the elastic lever 10 pivoted intermediate its extremities to the door, the bars 12 and 13 pivoted to the lever above and below its pivotal attachment to the door and connected with the locking plates, and the stationary locking clip 14 fixed to the door so that the elastic lever can be sprung into and out of engagement therewith, substantially as described.

3. The combination with a vertically movable door, of a bracket secured thereto, a vertically movable bolt carried by said bracket and adapted to engage with the sill of the door when said door is in its lowermost position, and a stop adapted to engage the end of a lever whereby by forcing down the outer end of the lever the bolt may be forced down against the door sill so as to lift said door, substantially as described.

4. In a grain car door, the combination with a vertically movable door 5, of a bracket 15 secured to said door, and provided with upper and lower arms 16 and 17, and a vertically movable bolt 18, carried by the lower arm of the bracket and adapted to engage with the sill of the door when said door is in its lowermost position, said upper arm of the bracket adapted to engage with the end of a lever so that when the other end of said lever is forced downward the bolt 18 will be forced down against the sill so that the said door will be raised, substantially as described.

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