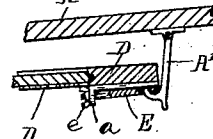
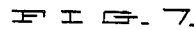
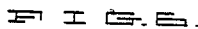
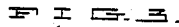


R. O. HIXSON.
GRAIN DOOR FOR CARS.

Patented May 24, 1892.



F. H. Warner.
Frank A. Hood.

per Robert O. Nixson, INVENTOR.
 C. E. W. Bradford, ATTORNEYS.

UNITED STATES PATENT OFFICE.

ROBERT O. HIXSON, OF RUSSELLVILLE, INDIANA.

GRAIN-DOOR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 475,449, dated May 24, 1892.

Application filed May 9, 1891. Serial No. 392,183. (No model.)

To all whom it may concern:

Be it known that I, ROBERT O. HIXSON, a citizen of the United States, residing at Russellville, in the county of Putnam and State of Indiana, have invented certain new and useful Improvements in Grain-Doors for Cars, of which the following is a specification.

My said invention relates to that class of devices known as "grain-doors for cars;" and it consists in certain details of construction and arrangement of parts, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a fragmentary side elevation of a freight-car, showing one of my improved grain-doors in position; Fig. 2, a transverse sectional view looking toward the left from the dotted line 2 2 in Fig. 1, the grain-door being raised and held in its open position; Fig. 3, a detail sectional view of the fastening device for the grain-door on the dotted line 3 3 in Fig. 4; Fig. 4, a similar view on the dotted line 4 4 in Fig. 3; Fig. 5, a detail horizontal sectional view looking downwardly from the dotted line 5 5 in Fig. 1, and Figs. 6 and 7 detail views showing parts in similar relation as in Fig. 2. All detail views are on an enlarged scale.

In said drawings the portions marked A represent portions of the body of the car; B, the door jambs or posts; C, the ordinary car-door; D, the grain-door embodying my invention, and E the fastening device for said grain-door. The several parts A, B, and C are or may be of any ordinary or desired construction, (except that the posts B have grooves forming ways for the hangers of the grain-doors, as will be presently described,) and therefore need no special description.

The grain-door D is, in its general form, of substantially an ordinary construction, but is provided with hangers *d*, which enter grooves in the facing sides of the posts B and are adapted to slide up and down therein. Said grooves are preferably covered by slotted plates *b*, behind which heads on the hangers *d* pass, as shown in Figs. 1 and 5, and these plates have rearward extensions at the upper ends near the roof of the car, so that when the grain-door is raised to its upper and open

position, as shown in Fig. 2, the hangers *d* thereon may pass rearwardly somewhat into notches in these projections, thus providing means for sustaining the upper side of the door in this upper position, while the lower side is sustained by a hook, as will be presently described.

The fastening device is in two parts, the main portion E of which is in the form of a bolt extending up through the sill of the car to directly in front of the center of the grain-door when closed, where it is provided with a notch into which the lower or looped portion of the other part will enter and with which it will engage. This bolt is provided upon its lower end with an adjusting-nut *e*, whereby it can be adjusted to extend to precisely the height desired, and a projection *a* extends down alongside said nut to prevent it from turning after said bolt is lifted to its upper position. The bolt is adapted to slide freely in its socket for a limited distance when freed from the other part of the fastening device, and said adjusting-nut can thus be turned free of said projection *a* when the bolt is in its lower position.

The other portion of the fastening device E' is in the form of a loop-bolt and is secured in a bracket *d'* on the grain-door D, and said loop-bolt is provided with a thumb-nut *e'* upon its upper or threaded end, by which it can be tightened or loosened. The operation is, when the grain-door is closed and the loop of the part E' is swung into the notch in the part E, that the thumb-nut *e'* is tightened up, producing a strain on the parts and fastening said grain-door securely in its closed position.

The grain-door is, as will be seen, capable of being raised and fastened in the roof of the car when the car is to be used for other purposes than carrying grain or whenever it may be desired. In such cases it is slid up until the hangers *d* reach the top of the ways or grooves in the posts, and when the door has been swung back in the position shown in Fig. 2, with the hangers pulled into the notches at the tops of said grooves, the other edge of the door is supported by a hook A', hung in the roof of the car and which is adapted to engage with the opening in the loop-bolt E', as shown in said Fig. 2, and also in Fig. 7.

Having thus fully described my said inven-

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

1. The combination, with a grain-car door, of a fastening device consisting of the bolt E, 5 having a notch, and the loop-bolt E', adapted to engage in said notch, and provided with a thumb-screw.

2. The combination of a car provided with a door-opening, grooves in said facing sides 10 of the door-jambs, a grain-door having hangers entering said grooves, a fastening device consisting of two parts E and E', one adjustably mounted in the sill of the car and the

other adjustably mounted upon the lower edge of the door, and a suspending hook secured 15 in the roof of the car, said door being adapted to both slide and swing upon its hangers, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 20 5th day of May, A. D. 1891.

ROBERT O. HIXSON. [L. S.]

Witnesses:

CHESTER BRADFORD,
FRANK W. WOOD.