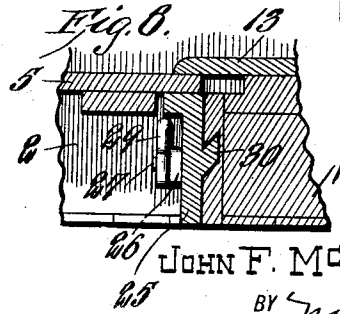
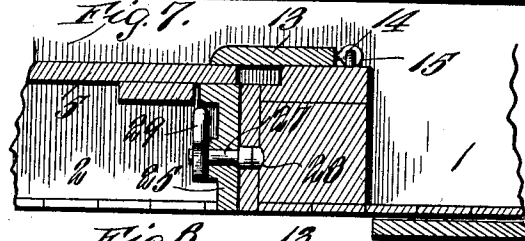
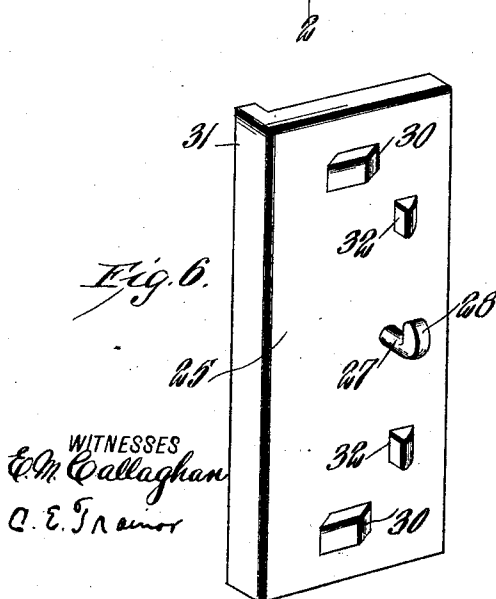
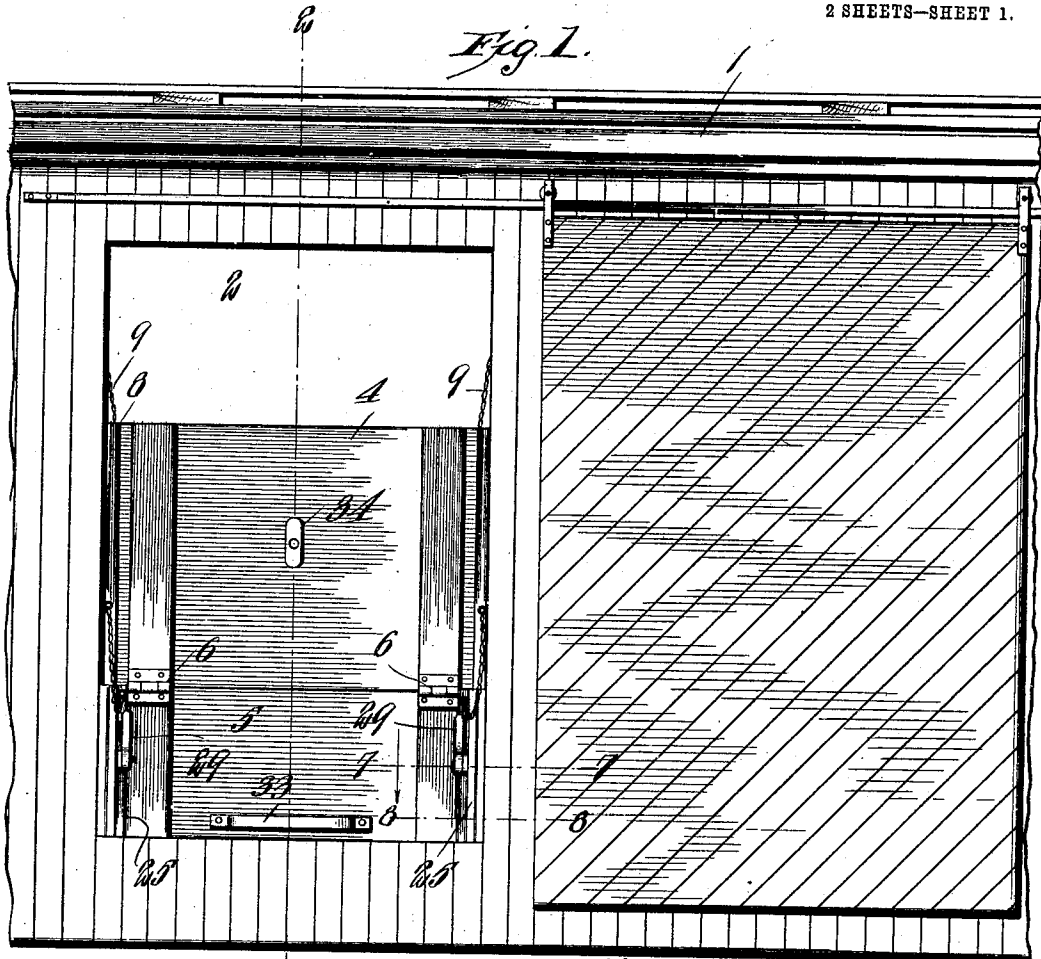


J. F. McGLENN.
GRAIN CAR DOOR.
APPLICATION FILED MAR. 31, 1909.

937,630.

Patented Oct. 19, 1909.
2 SHEETS—SHEET 1.



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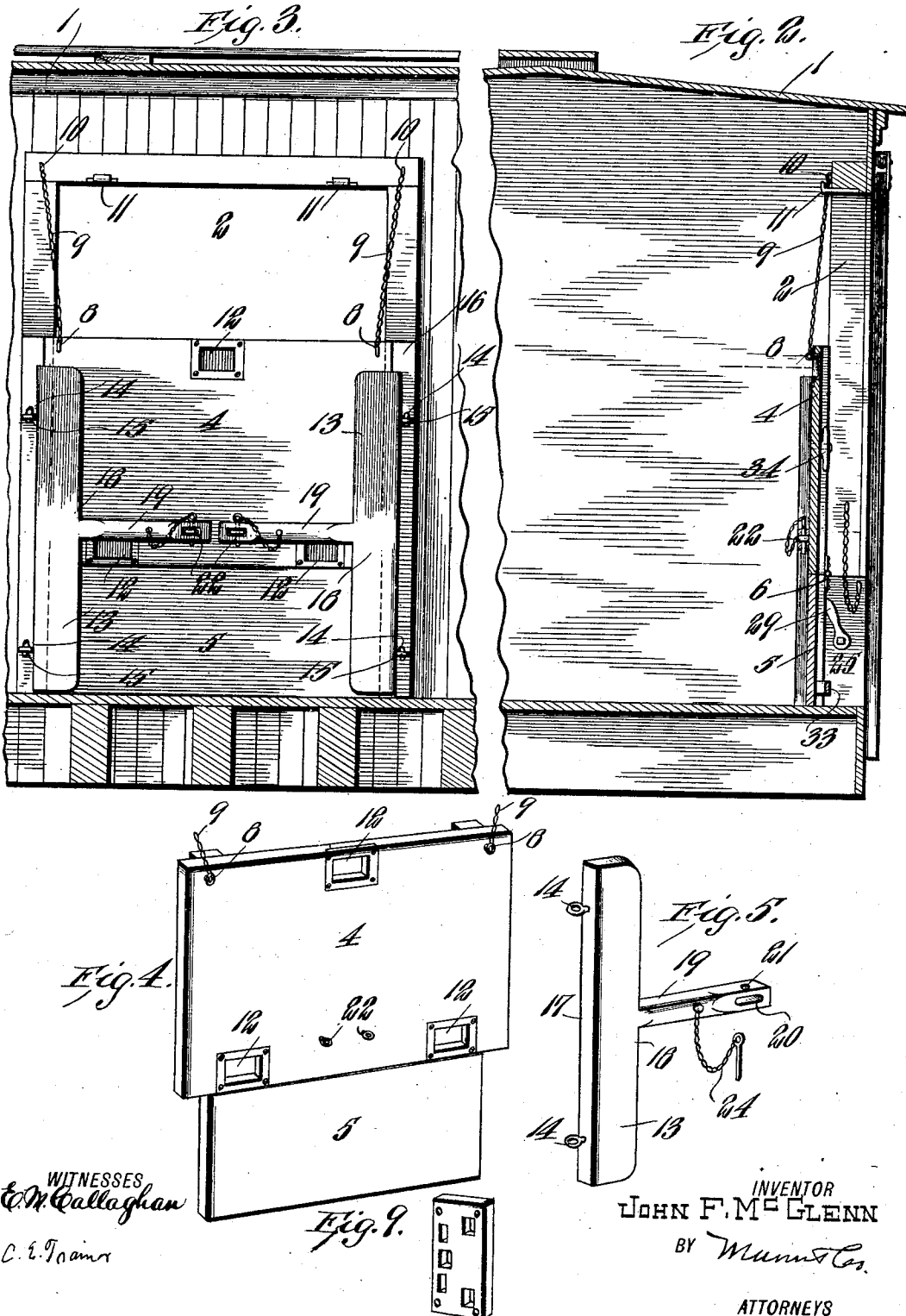
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UNITED STATES PATENT OFFICE.

JOHN F. McGLENN, OF HARVEY, NORTH DAKOTA.

GRAIN-CAR DOOR.

937,630.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed March 31, 1909. Serial No. 486,861.

To all whom it may concern:

Be it known that I, JOHN F. McGLENN, a citizen of the United States, and a resident of Harvey, in the county of Wells and State of North Dakota, have made certain new and useful Improvements in Grain-Car Doors, of which the following is a specification.

My invention is an improvement in grain doors, and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

Referring to the drawings forming a part hereof, Figure 1 is a side view of a portion of a car provided with the improvement, Fig. 2 is a section on the line 2—2 of Fig. 1, Fig. 3 is an inside view of a portion of a car provided with the door, Fig. 4 is a perspective view of the door, Fig. 5 is a similar view of the inside fastening device, Fig. 6 is a similar view of the outside fastening device, Fig. 7 is a section on the line 7—7 of Fig. 1, Fig. 8 is a section on the line 8—8 of the same figure, and Fig. 9 is a perspective view of plate engaged by the outside fastening device.

In the present embodiment of the invention, the car 1, is provided with the usual door opening 2, which may be closed by an outer door 3 of suitable construction, in the present instance a sliding door, and an inner door consisting of an upper section 4, and a lower section 5, hinged to the upper section as at 6, and arranged to swing outwardly.

The upper section is provided on its upper edge with eyes 8, with which are engaged the one end of chains 9, whose other ends are connected with eyes 10 on the frame of the door. The edges of the upper section of the door rest against the sides of the door opening, and the said sides prevent the outward movement of the door. The frame of the door opening is also provided with hooks 11, at its upper part and projecting into the car, for supporting the grain door in its uppermost position and the upper section is provided with hand holds 12, at its upper and lower edge respectively, for convenience in manipulating the same. The door sections are prevented from inward movement, by means of the following mechanism.

A plate 13, preferably of metal, is provided with integral eyes 14 which engage pins 15 on boards 16 which are secured on the inner face of the sides of the door opening, the plates being thus hinged to the

boards, and the boards are arranged at the edges of the grain door, thus forming an additional guide for the sections.

The plates are so arranged as to swing close against the sections as shown in Figs. 2 and 3, and at approximately the center of each plate is provided an integral bar 19, provided at its free end with a longitudinal slot 20, and a transverse opening 21.

The slot is adapted to receive an eye 22 on the upper section, when the bar is in closed position, and a pin 23 is provided for traversing the opening and the eye 21 to retain the plate in closed position, the pin being secured to the bar by a chain 24.

The lower section is locked from outward movement by a block 25, provided at approximately its center with a bearing 26 in which is rotatably mounted a shaft 27 provided at one end with an angular portion 28, and at the other with a handle 29. The block is also provided on the face adjacent the portion 28 of the shaft with lugs 30 inclined toward a flange 31 on the inner edge of the block. The said face is also provided with lugs 32 having the face toward the flange perpendicular to the block and the opposite face inclined.

The blocks rest against the plates 35 before mentioned and the portion 28 and the lugs 30 and 32 are received within the openings of the plate. After the blocks are engaged by the plates, the shaft is turned thus bringing the portion 28 beneath the undercut edge of the opening 36, thus drawing the block closely against the plate. The said blocks are of a length substantially equal to the width of the lower section.

It will be observed that the undercut lugs of the block and the undercut recesses of the plate are so arranged, that the pressure against the lower section of the door has a tendency to release the blocks, which tendency is however prevented by the shaft.

The lower section is provided with a handle 33, and the upper section with a button 34 by means of which the lower section may be secured against the upper section. The lower section is arranged to open outwardly in order to facilitate unloading of grain and the like. When said section is opened by removing the blocks 25, the said lower section is raised up against the upper section and secured in place by the engagement of the button 34 with the handle 33. When so placed enough grain or the like runs out

to relieve the pressure against the upper section so that it may be easily moved.

It will be observed that the lower section is prevented from outward movement by a block which extends approximately the full width of the said section and is secured in place by a plurality of projections or studs, which enter recesses in the plates secured to the jamb or sides of the door opening, and that the said projections are above and below the shaft 27. As is well known, an immense pressure is brought to bear against the lower section when the car is fully loaded, and the above described securing means is especially devised to resist this pressure.

In operation the blocks 25 are engaged with their respective plates, after which the grain door is positioned, and the hinged plates 13 are turned into position against the edges of the inner face of the door, and locked by means of the pins. When the car is to be unloaded the blocks are removed, and the lower section of the door is permitted to swing outward. After enough of the load has passed outwardly through the opening thus formed to relieve the pressure on the upper section, the entire door is removed and suspended by the hooks 11.

I claim—

1. The combination with the car having a door opening, of a grain door consisting of upper and lower sections, the upper section being of greater length than the width of the door opening, and the lower section being hinged thereto and of lesser length than the door opening whereby to permit said section to swing outwardly, plates secured to the sides of the door opening near the lower end thereof, each of said plates having under-cut openings, blocks having undercut lugs for engaging the openings, and against which the ends of the lower section are adapted to rest to prevent outward movement thereof, means for locking the blocks against the plates, plates hinged to the inner

edges of the sides of the door opening and closing against both sections, and means for locking the plates in place.

2. The combination with the car having a door opening of a grain door consisting of upper and lower sections, the upper section being of greater length than the width of the door opening, and the lower section being hinged thereto and of lesser length than the door opening whereby to permit said section to swing outwardly, plates secured to the sides of the door opening near the lower end thereof, each of said plates having undercut openings, blocks having undercut lugs for engaging the openings, and against which the ends of the lower section are adapted to rest to prevent outward movement thereof, means for locking the blocks against the plates, and means engaging the inner faces of the sections for preventing inward movement thereof.

3. The combination with the car having a door opening, of a grain door consisting of upper and lower sections, the upper section being of greater length than the width of the door opening, and the lower section being hinged thereto and of lesser length than the door opening whereby to permit said section to swing outwardly and upwardly against the upper section, removable blocks against which the ends of the lower section are adapted to rest to prevent outward movement thereof, means for connecting the blocks with the sides of the door opening near the lower ends thereof, and comprising studs on the blocks entering recesses in the jamb of the door opening, means for locking the blocks in place, and means engaging the inner faces of the sections for preventing inward movement thereof.

JOHN F. McGLENN.

Witnesses:

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