

No. 884,011.

PATENTED APR. 7, 1908.

J. EDMAN.

GRAIN DOOR FOR CARS.

APPLICATION FILED AUG. 26, 1907.

2 SHEETS—SHEET 2.

Fig. 2.

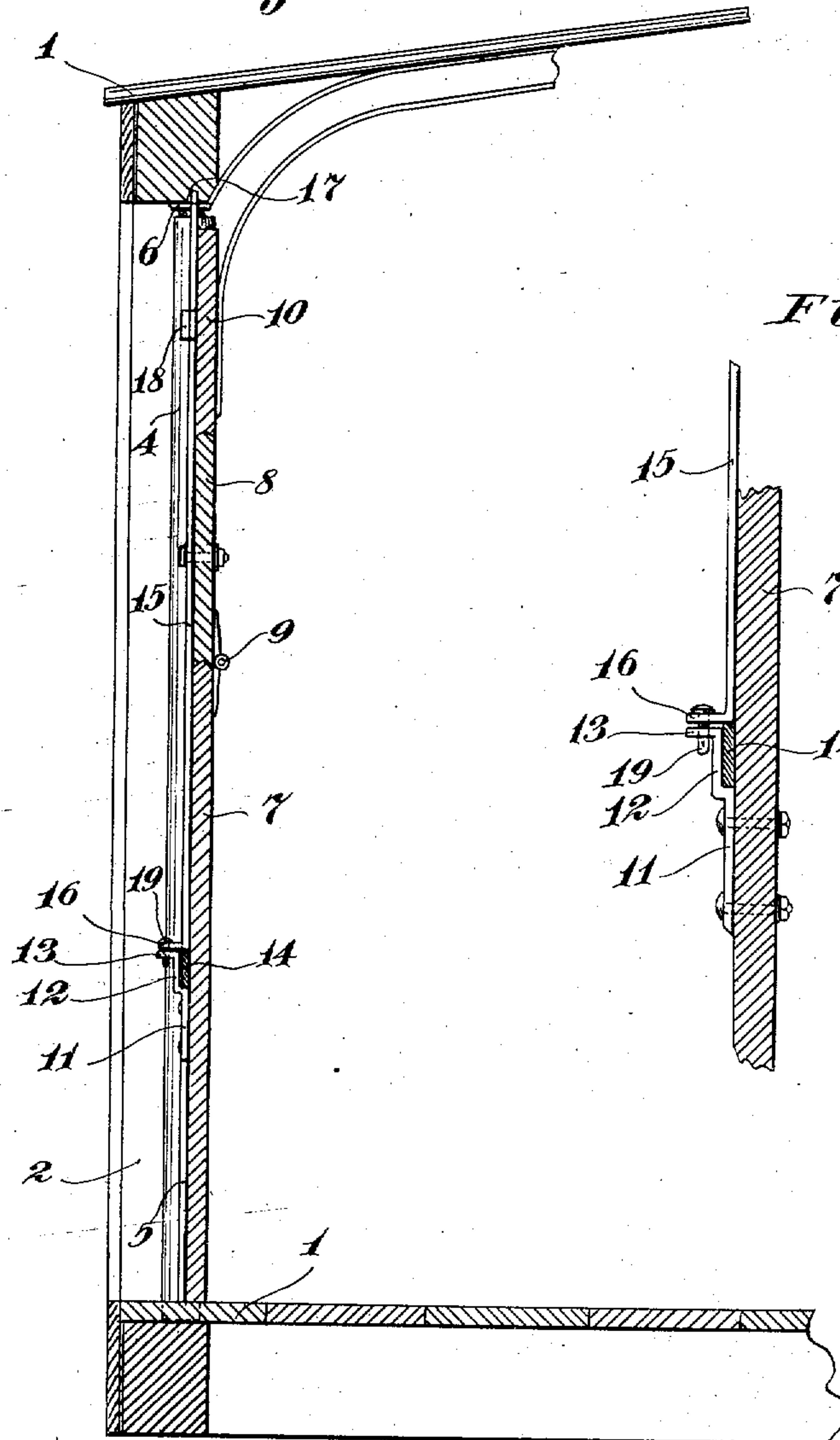


Fig. 4.

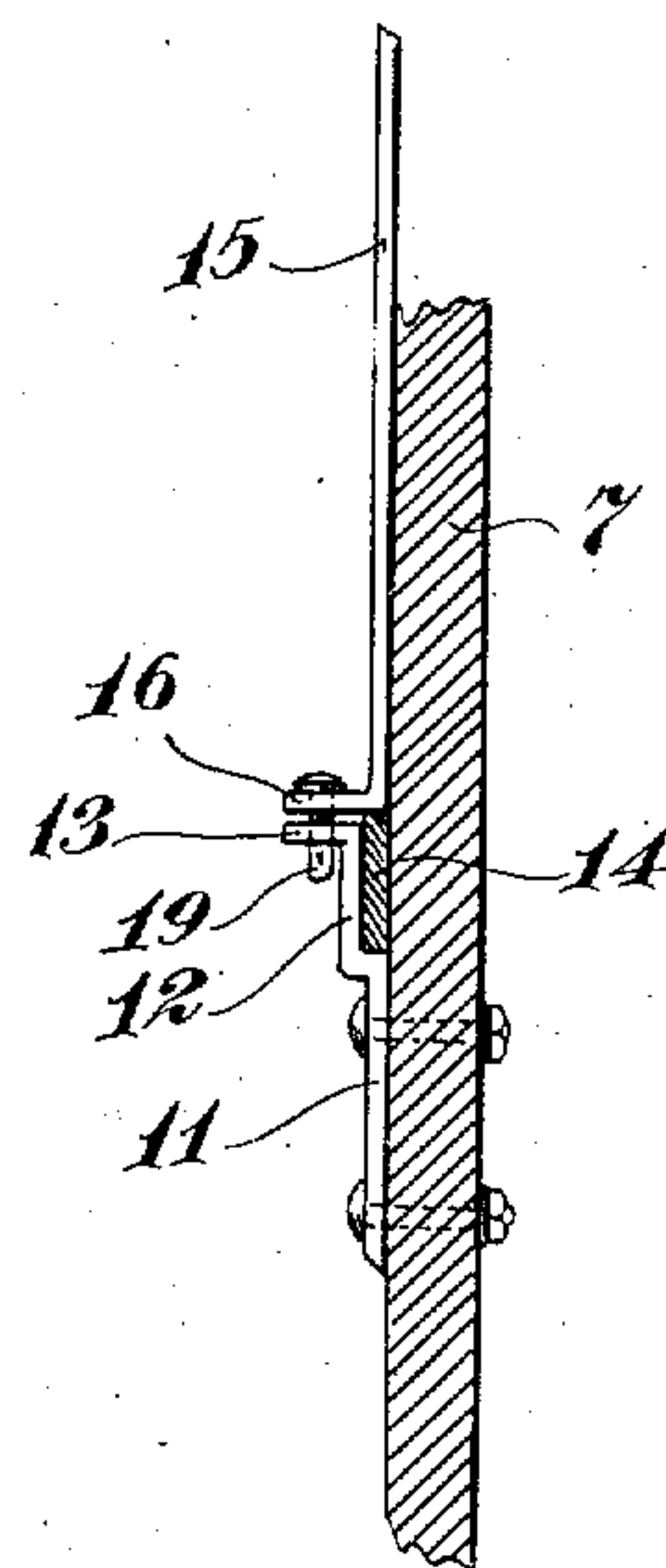
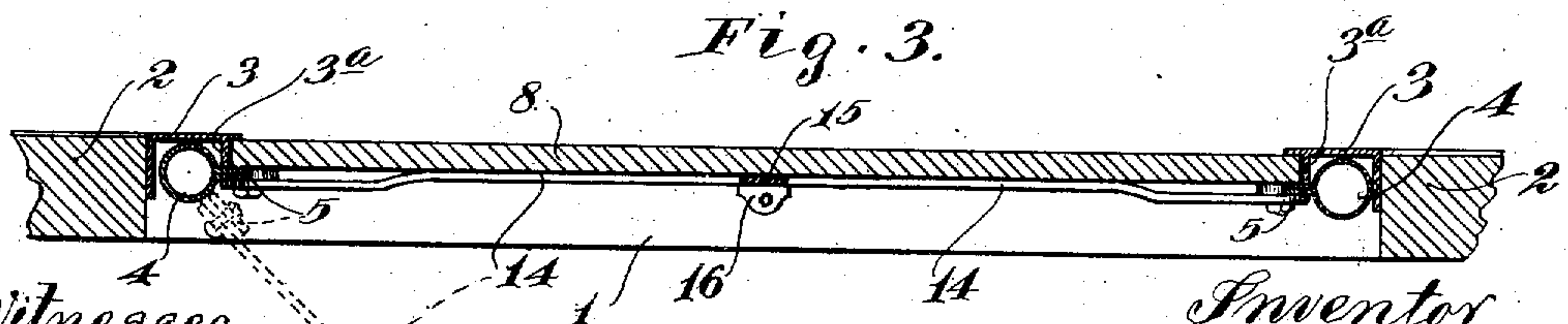


Fig. 3.



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GRAIN-DOOR FOR CARS.

No. 884,011.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed August 26, 1907. Serial No. 390,133.

To all whom it may concern:

Be it known that I, JOHN EDMAN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Grain-Doors for Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to grain doors of the general character disclosed and claimed in my prior patent No. 856,775, issued of date June 11, 1907, entitled "grain doors for cars." In some respects, also, the construction herein illustrated has features similar to those illustrated and claimed in my pending application S. N. 372,494, filed May 8, 1907, entitled "grain doors for cars".

In the accompanying drawings which illustrate the present invention, like characters indicate like parts throughout the several views.

Referring to these drawings; Figure 1 is a view in side elevation showing the central portion of a car body having my improved grain door applied thereto. Fig. 2 is a vertical section taken on the line $x^2 x^2$ of Fig. 1, some parts being broken away. Fig. 3 is a horizontal section taken on the line $x^3 x^3$ of Fig. 1; and Fig. 4 is a detail in vertical section taken on the line $x^4 x^4$ of Fig. 1, some parts being broken away, and the parts shown being on a larger scale than in the other views.

The numeral 1 indicates a car body having at its sides the usual door opening formed between posts 2. Rigidly secured to the inner edges of the door posts 2 are stop cleats shown as formed by channel-shaped metal bars 3 that extend preferably about one-half way up the said door posts. A short distance from their projecting edges, the stop cleats 3 are shown as provided with outwardly projecting door retaining flanges 3^a.

Located adjacent to the inner edges of the door posts 2 and just outward of the co-operating stop cleats 3 are vertically disposed oscillatory shafts shown in the form of tubes 4, and provided with radially and longitudinally extending lock blades 5. At their upper ends, the tubular shafts 4 are journaled on hubs 6 secured to the top of the door frame, and at their lower ends they are

journaled in suitable seats formed in the bottom of the door frame.

The grain door is made up of upper and lower main door sections 7 and 8, that are connected by hinges 9, and a loose supplemental door section 10. The hinges 9 limit the outward movement of the door section 8 to a vertical position with respect to the door section 7, but permit the same to be folded inward thereon. The lower door section 7 is clamped against the stop cleats 3 by the lock blades 5 of the shafts 4. All of the said door sections are normally held against the inner surfaces of the lock blades. Rigidly secured to the intermediate portion of the door section 7 on the outer side thereof is a lock bracket 11 having a laterally offset portion 12, the upper edge of which terminates in a perforated lock lug 13.

To the intermediate portions of the lock blades 5 lock bars 14 are pivotally connected at their outer ends. These lock bars 14 are of such length that when the lock blades 5 are in normal or locking positions, the free ends of said lock bars are adapted to be turned into the seat formed between the door section 7 and the offset portion 12 of the lock bracket 11.

To the central portion of the door section 8 is intermediately pivoted a long lock lever 15, the lower end of which is provided with an outwardly extended perforated lock lug 16, which, when the lever is turned in a vertical position, as shown in the drawings, is adapted to closely engage the intumed free ends of the lock bars 14 and hold the same interlocked with the said lock bracket. When the lock bars are thus held interlocked with the said lock bracket, they hold the lock blades 5 pressed against the door sections. The upper end of the lock lever 15 is adapted to be turned into engagement with a seat 17 formed in the top of the door frame. On the central portion of the door section 10 is a lock bracket 18 having an offset end with which the upper portion of the lock bar 15 is adapted to be engaged when turned into a vertical position, and thereby hold the said door section 10 in its working position. A lock bolt or pin 19 is adapted to be passed through the perforations of the lock lugs 13 and 16 so as to thereby hold the lock lever 16 in its operative or locking position. The lower end of this lock bolt or pin 19 is perforated so that, if desired, a car seal may be

passed therethrough to thereby hold the said bolt or pin against displacement, and, hence, seal the car door.

The door above described, while especially adapted for use as a grain door, may, nevertheless, be generally used, and when used, makes unnecessary the use of an outside car door. Any suitable provision may be made such, for instance, as in my prior patent and application above identified, for guiding the door sections to and from inoperative positions in the top of the car. The door is of small cost, and highly efficient for the purposes had in view.

What I claim is:—

1. The combination with a car body, of a grain door seated in the door opening thereof, a pair of oscillatory door locking blades mounted at the sides of the door opening, lock bars extending from said lock blades, and means for locking the ends of said lock bars to said grain door, substantially as described.

2. The combination with a car body having a door opening, of a grain door seated in said door opening, a pair of oscillatory lock blades mounted in said door opening at the opposite sides thereof for normally holding said grain door in working position, a lock bracket on the intermediate portion of said grain door, lock bars pivoted to said lock blades and engageable with said lock bracket at their free ends, and a lock lever pivoted to an upper portion of said grain door, the lower end thereof being movable into a position immediately above said lock bracket, and the upper end thereof being arranged for locking engagement with the upper portion of the door frame, substantially as described.

3. The combination with a car body hav-

ing a door opening, of a grain door made up of upper and lower sections seated in said door opening, a lock bracket on the intermediate portion of the lower door section, oscillatory lock blades mounted in said door opening at the opposite sides thereof for normally holding said grain door in working position, a lock lever intermediately pivoted to the upper door section and its upper end arranged for interlocking engagement with the seat in the top of the door frame and having a flanged lower end, and a lock bolt or pin for locking the flanged lower end of said lock lever to the lock bracket on said lower door section, substantially as described.

4. The combination with a car body having a door opening, of a grain door made up of three sections, oscillatory lock blades mounted in said door opening at the opposite sides thereof for normally holding the sections of said grain door in working position, a lock bracket applied to the intermediate portion of the lower door section, lock bars pivoted to said lock blades and engageable with said lock bracket, a lock lever intermediately pivoted to the intermediate door section and having a flanged lower end and with its upper end arranged for interlocking engagement with the top of the door frame, a lock pin or bolt for interlocking the flanged lower end of said lock lever to said lock bracket on said lower door section, and a lock bracket on the upper door section with which the upper end of said lock lever is engageable, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN EDMAN.

Witnesses:

H. D. KILGORE,
MALIE HOEL.