C. O. FRENCH.

GRAIN DOOR FOR CARS.

APPLICATION FILED MAR. 29, 1907.

951,809. Patented Mar. 15, 1910.

2 SHEETS—SHEET 1.

Fig. 2.

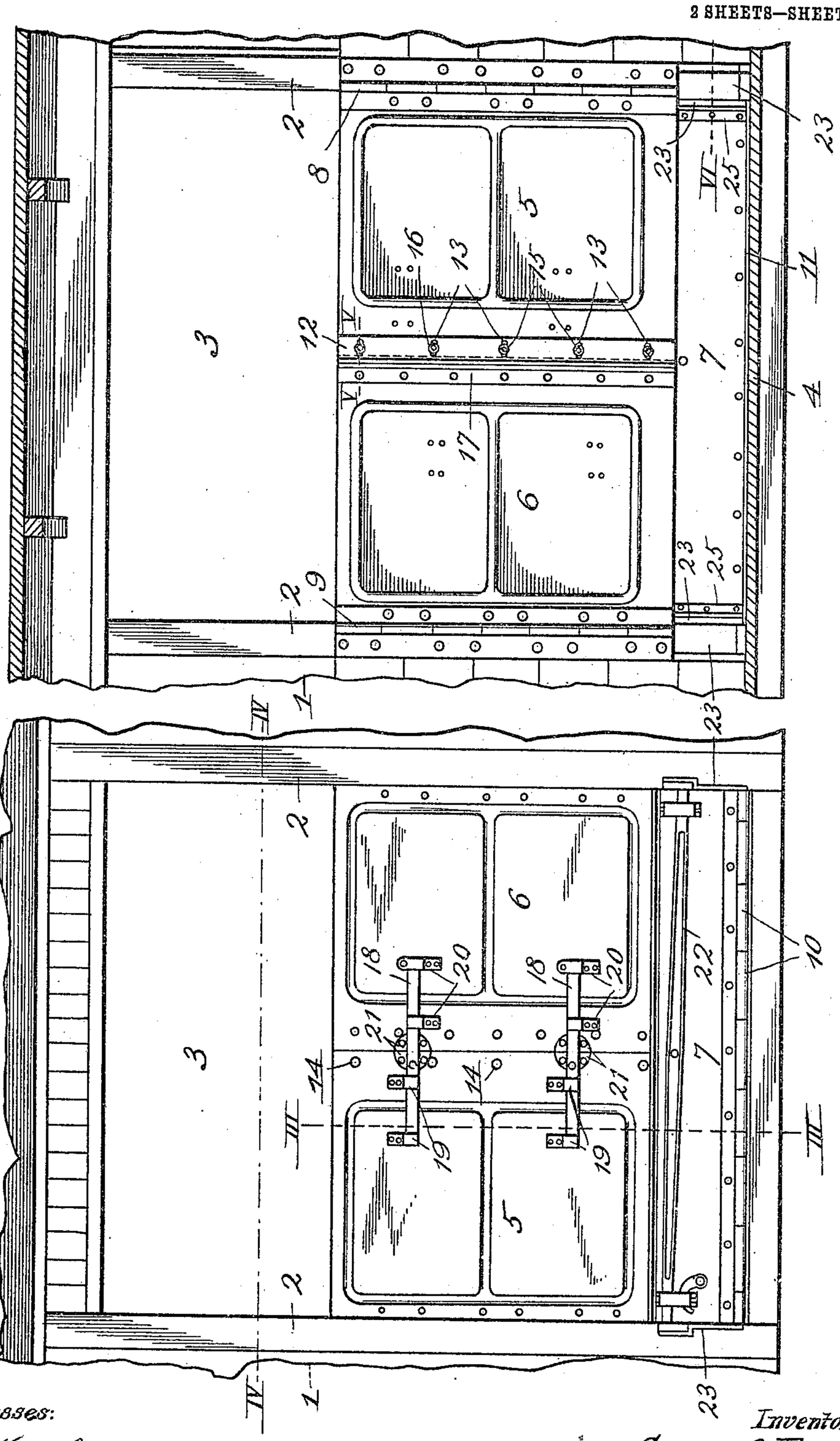

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 6.

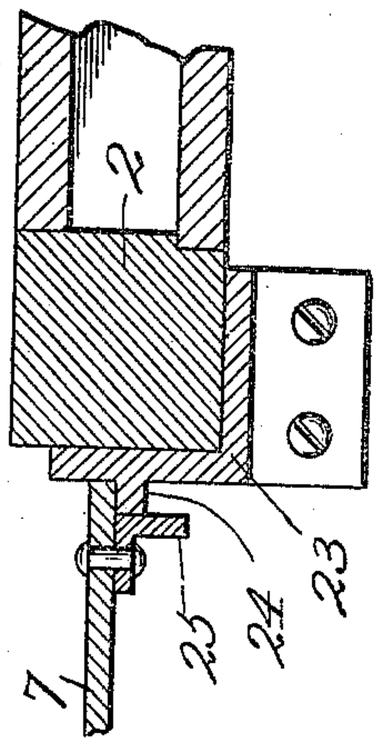


Fig. 5.

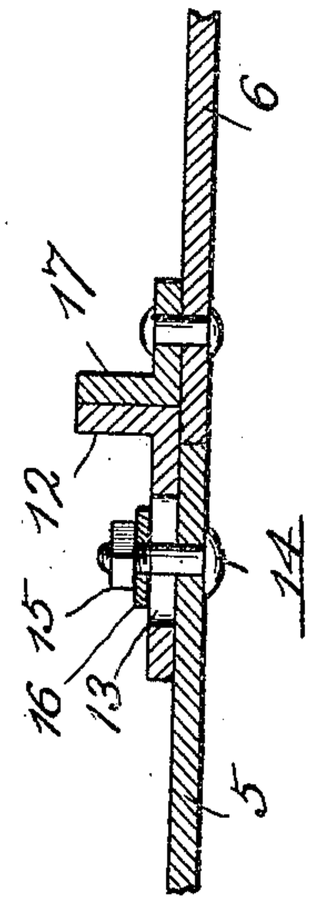


Fig. 4.

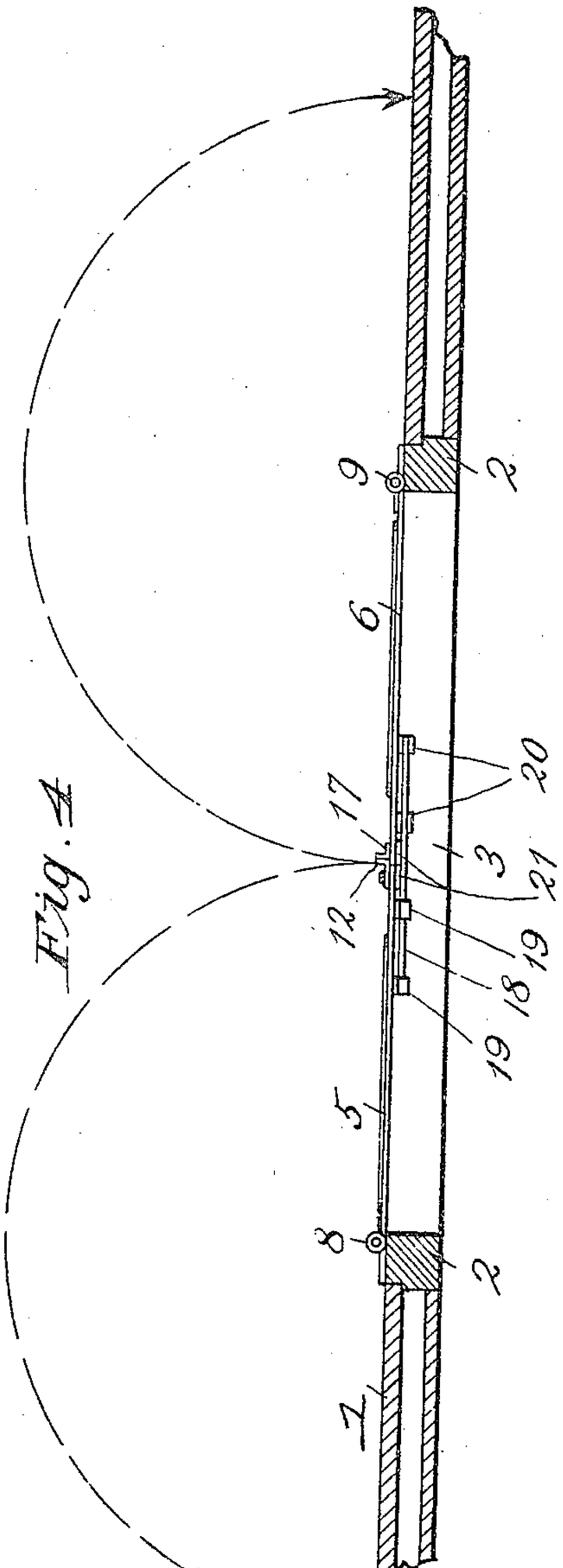
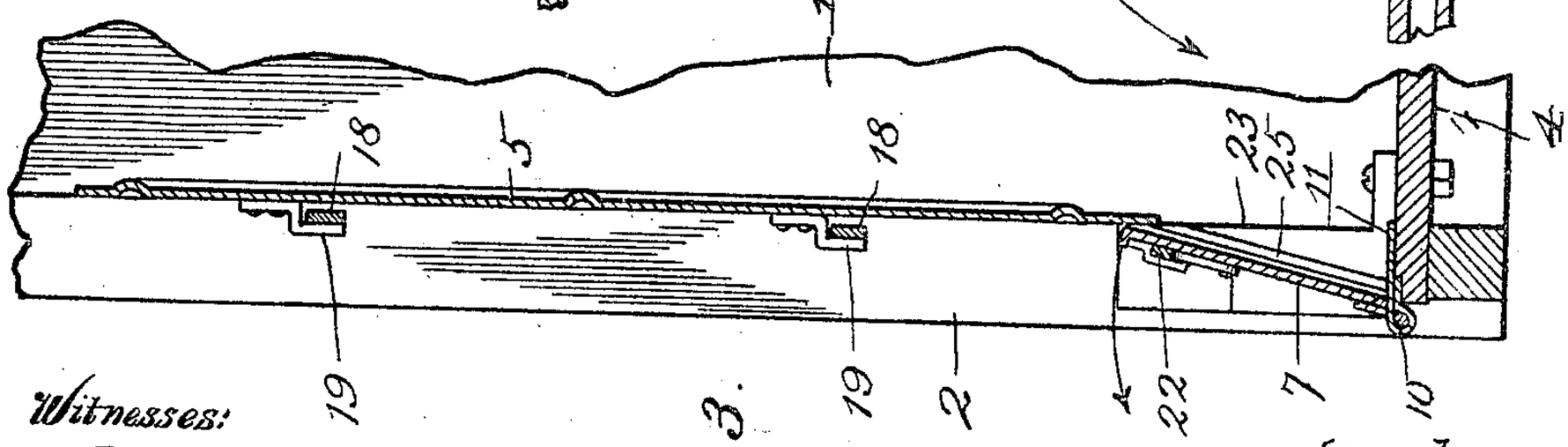


Fig. 3.



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UNITED STATES PATENT OFFICE.

CYRUS O. FRENCH, OF KANSAS CITY, MISSOURI, ASSIGNOR TO BENDER CAR DOOR COMPANY, A CORPORATION OF ARIZONA TERRITORY.

GRAIN-DOOR FOR CARS.

951,809. Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed March 29, 1907. Serial No. 365,393.

To all whom it may concern:

Be it known that I, CYRUS O. FRENCH, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Grain-Doors for Cars, of which the following is a specification.

My invention relates to improvements in grain-doors for cars; and the principal feature of the invention resides in a door comprising two upper sections and a lower section all of which coöperate in closing the car doorway so as to prevent leakage of grain. Each section is mounted upon its own hinge so that it may be opened or closed with considerable less exertion than now required to operate the ordinary grain-door.

Another feature of the invention resides in means for supporting the free ends of the upper sections when closed so that they cannot sag and thus unduly strain the hinges whereby they are carried.

A further feature resides in an adjustable member for overlapping the joint between the adjacent ends of the upper sections so that said joint may be kept grain-tight.

Other features will hereinafter appear and in order that the invention may be fully understood, reference will now be made to the accompanying drawings, in which:—

Figure 1 represents a broken front elevation of a car, provided with my improved grain-door. Fig. 2 is a broken vertical section of the interior of the car provided with my grain-door. Fig. 3 is an enlarged vertical section on line III—III of Fig. 1. Fig. 4 is a horizontal section on line IV—IV of Fig. 1. Fig. 5 is an enlarged horizontal section on line V—V of Fig. 2. Fig. 6 is an enlarged horizontal section on line VI of Fig. 2.

1 designates the car, 2 the door-posts, 3 the doorway, and 4 the floor of said car.

The lower portion of doorway 3 is adapted to be closed by my improved grain-door, consisting of upper sections 5 and 6 and a lower section 7, which latter abuts at its upper end against the lower portions of the former when all are closed. Sections 5 and 6 are secured to the door-posts by hinges 8 and 9, respectively, while section 7 is secured by a hinge 10 to a threshold-plate 11, secured to the floor of the car. The upper sections are, preferably, duplicates and when closed their adjacent ends need not abut as the joint between them is rendered grain-tight by an overlapping adjustable member 12, provided with slots 13, through which bolts 14 extend, whereby said member is secured to section 5, the bolts being held in position by retaining-nuts 15 which bear against washers 16 interposed between said retaining-nuts and the adjustable member. With this arrangement sufficient leeway may be left between the adjacent ends of the sections to prevent the same from overlapping and thus interfering with their proper closing, should the hinge members become sufficiently worn to allow said sections to sag more or less. All tendency of the sections to sag when closed, however, is overcome by member 12 and a member 17 which latter is fixed to section 6 and abuts against the entire length of member 12, as shown in Fig. 2, and by thus abutting, further renders the joint between the sections grain-tight, so that it will not be necessary to depend alone upon the free end of section 6 fitting snugly against the entire length of member 12. Should the members 12 and 17 be drawn apart at their lower ends by reason of sections 5 and 6 sagging, member 12 may be adjusted to bear against the entire length of member 17 by loosening the retaining-nuts 15.

18 designates a pair of locking bars pivoted to section 5, and adapted to engage keepers 19 20, secured to sections 5 and 6, respectively, when it is desired to lock said sections in a closed position.

21 designates bearing plates secured to the adjacent ends of sections 5 and 6, so that when the latter are closed said ends will be held in alinement and the end of section 6 will be pressed firmly against member 12 by reason of the locking bars engaging the faces of said bearing plates and the keepers, see Figs. 1 and 4. Section 7 is held in a locked position by a pivoted bar 22 adapted to engage a pair of castings 23 secured to the door-posts, and provided with inclined ribs 24, against which the ends of section 7 abut, see Fig. 6, and thus form grain-tight joints. Said ends are reinforced by angle-irons 25, which also abut against ribs 24, and thus assist in preventing leakage of grain around said ends.

The upper ends of ribs 24 and angle-irons 25 are beveled, as shown in Fig. 3 to permit the upper sections 5 and 6 to close snugly against the lower section 7, and thus form a grain-tight joint.

In loading a car with grain the upper sections may be left open until the grain almost reaches a level with the top of section 7 and in unloading the car section 7 is opened to allow sufficient grain to discharge to permit sections 5 and 6 to be readily opened, hence in either operation the entire load need not be pitched over the top of the grain-door, so that considerable labor is saved thereby.

From the above description it is apparent that I have produced a grain-door, which is comparatively simple in construction and operation, and while I have shown and described my preferred construction, I, of course, reserve the right to make such changes as properly fall within the spirit and scope of the invention.

Having thus described my invention, what I claim is:—

In a grain-door for cars, a lower section hinged at the threshold of the car doorway, a pair of castings secured to the lower ends of the door-posts and provided with inclined ribs against which the ends of the lower section are adapted to abut, and reinforcing members secured to said lower section and adapted to abut against said ribs.

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

CYRUS O. FRENCH.

Witnesses:

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