C. A. LARSEN.

GRAIN DOOR.

APPLICATION FILED SEPT. 9, 1910.

1,020,831. Patented Mar. 19, 1912.

Fig. 1.

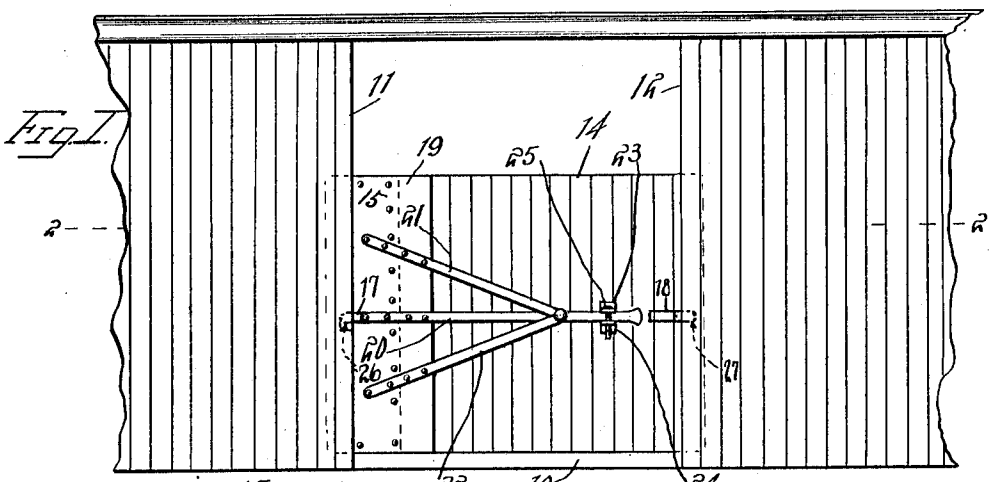
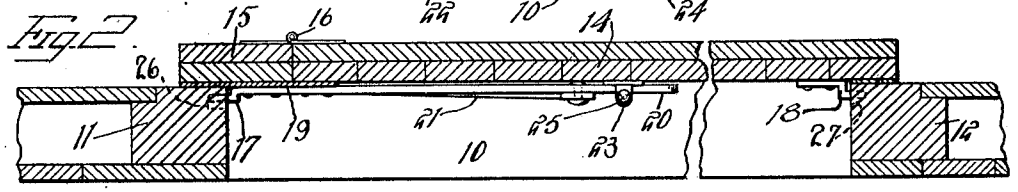


Fig. 2.



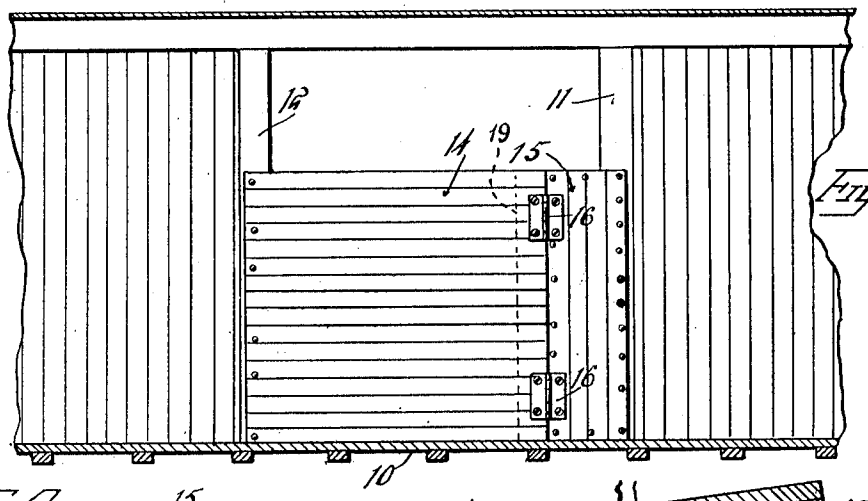
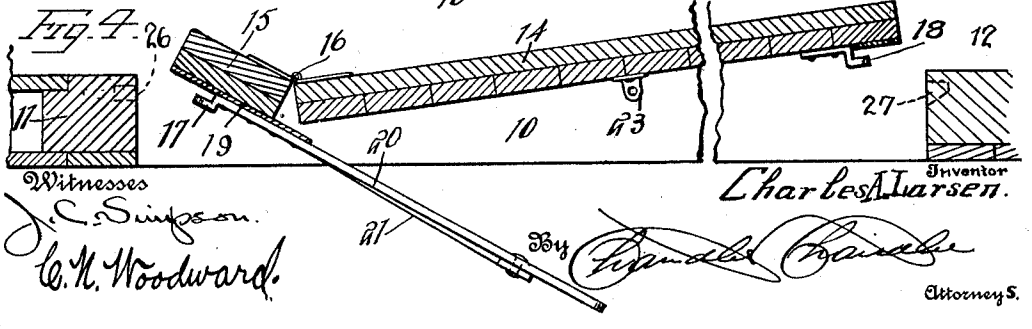


Fig. 3.

Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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GRAIN-DOOR.

1,020,831. Specification of Letters Patent. **Patented Mar. 19, 1912.**

Application filed September 9, 1910. Serial No. 581,320.

To all whom it may concern:

Be it known that I, CHARLES A. LARSEN, a citizen of the United States, residing at Colgate, in the county of Steele, State of North Dakota, have invented certain new and useful Improvements in Grain-Doors; 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.

This invention relates to improvements in grain doors for cars, and has for one of its objects to improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to provide a device of this character which may be readily applied without material structural changes in cars of different makes, and which may be readily applied without injury to the car or to the improved device.

With these and other objects in view, the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claim; and, in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a view of a portion of a car including the doorway opening from the outside with the improvement applied, Fig. 2 is a plan view of the improved device with the car structure in section on the line 2—2 of Fig. 1, enlarged, Fig. 3 is a view of the improved device from the inside of the car with the floor of the car in section, Fig. 4 is a view similar to Fig. 2 with the attachment in released or "buckled" position.

The improved device may be applied to the doorway openings of cars of various constructions, and in the drawings is shown applied to a conventional car in which 10 represents the floor, 11—12 the side posts of the doorway opening, these being the only portions of the car with which the improved device comes in contact. The improved door is formed of two sections, a relatively wide section 14 and a relatively narrow section 15, the two sections being hingedly united at 16. The combined sections 14—15 are greater in width than the doorway opening so that they extend over the inner faces of the posts 11—12, as shown in Fig. 2.

Connected to the outer face of the narrow section 15 is a plate 19, preferably sheet metal, and lapping over upon the adjacent portion of the wider section 14, and thus covering the joint between the two sections and guarding the same. Connected at one end to the narrow section 15 and likewise to the plate 19 is a locking bar 20, having diagonal braces 21—22 connected thereto near its free end and rigidly connected at their other ends to the member 15 and its plate 19. The bar 20 and its braces 21—22 extend over the wider section 14 and engage between perforated lugs 23—24 extending from the member 14, the perforations being designed to receive a holding pin 25 or other suitable fastening device, or to receive a suitable lock or seal, as may be preferred.

The bar 20 is extended at one end and formed with an offset 17 adapted to enter a cavity indicated at 26 in the frame member 11 when the door is in closed position, as shown in Figs. 1 and 2, while a catch device 18 is connected to the larger door section 14 at the opposite side members to fit in a socket 27 in the side post 12 when the door is closed, as shown in Fig. 2. By this means the combined sections 14—15 are coupled detachably to the side posts 11—12 and prevented from movement either vertically or laterally relative thereto, when the door sections are locked in closed position, while at the same time the catches 17—18 will be released from engagement with the posts when the door is buckled when opened, as shown in Fig. 4. By this means it will be obvious that a simply constructed grain door is produced which may be readily applied to a car by simply forming apertures in the inner faces of the door posts 12—13 to receive the catches 17—18 this being the only change required to be made in the car. Then by simply placing the combined sections 14—15 in position against the inner faces of the posts and locking the member 20 at its free end between the lugs 23—24 and inserting the lock or seal, the grain door is firmly supported in position, and will not work loose under the jars and concussions to which devices of this character are subjected when in use. The pressure of the grain against the inner side of the grain door holds the latter firmly in position and prevents displacement, while at the same time can be readily released by simply removing the seal or lock from the lugs 23—24 and permitting the united members

14—15 to "buckle" outwardly, as will be obvious. The sections 14—15 may be constructed of any suitable material and in any suitable manner, but will preferably be made of two thicknesses of material in laminated form or crossing each other at right angles in the ordinary manner.

What is claimed is:—

The combination with a pair of door posts each having a recess, of a door comprising a relatively narrow section and a relatively wide section hingedly connected at one side, a catch carried by the wide section and engageable with the recess of the adjacent post, a locking arm fixedly secured intermediate its ends to the narrow section, one end of the arm terminating in a catch engageable with the recess of the other post and the other end extending over the wide section, and means for locking the extended end of the rod to said wider section.

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

CHARLES A. LARSEN.

Witnesses:

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