A. E. H. STEINMANN.

GRAIN DOOR FOR BOX CARS.

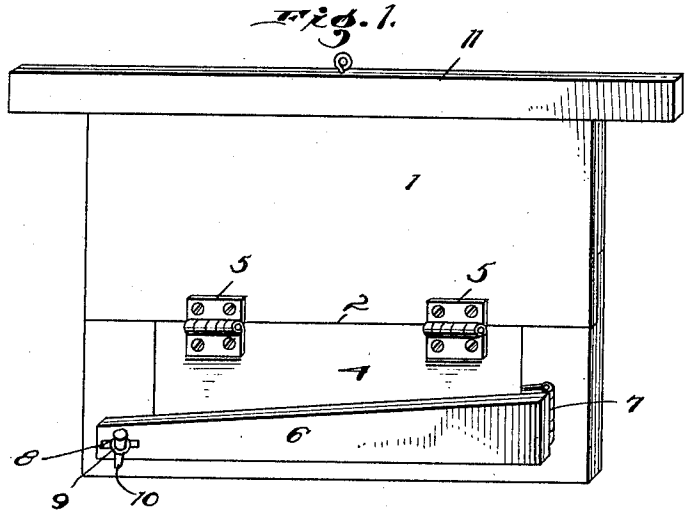
APPLICATION FILED OCT. 4, 1910.

1,037,077.

Patented Aug. 27, 1912.

3 SHEETS—SHEET 1.

Fig. 1.



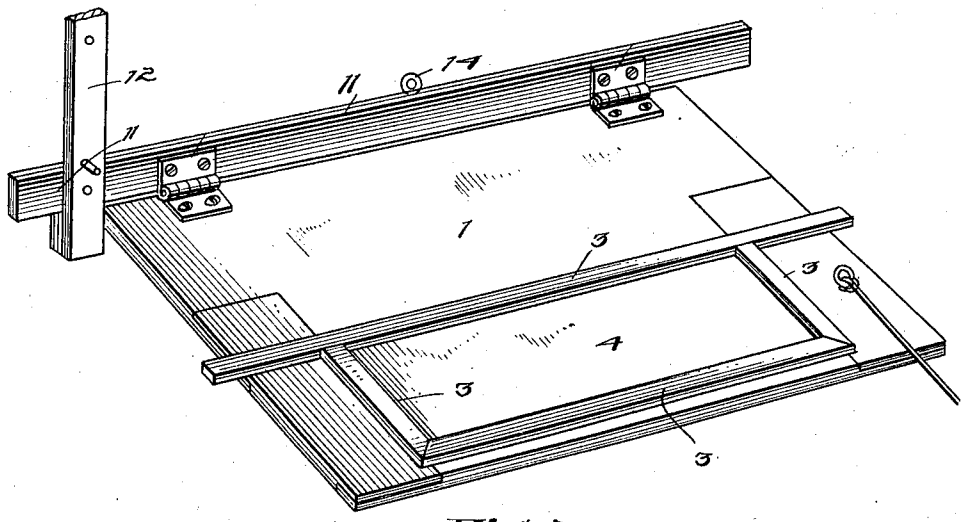


Fig. 2.

Witnesses

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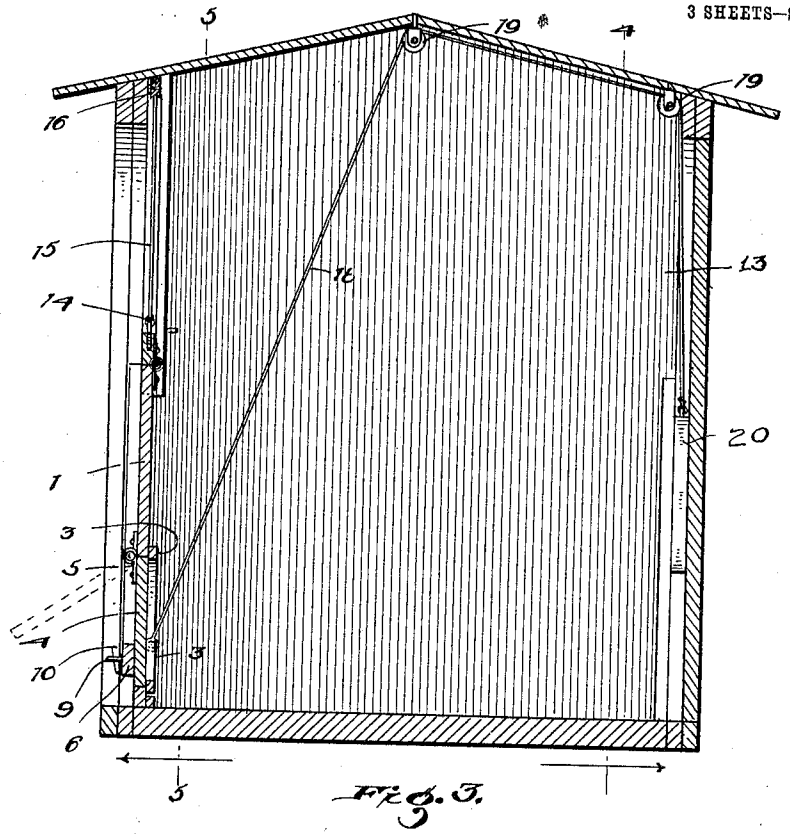

Fig. 3.

Witnesses

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3 SHEETS—SHEET 3.

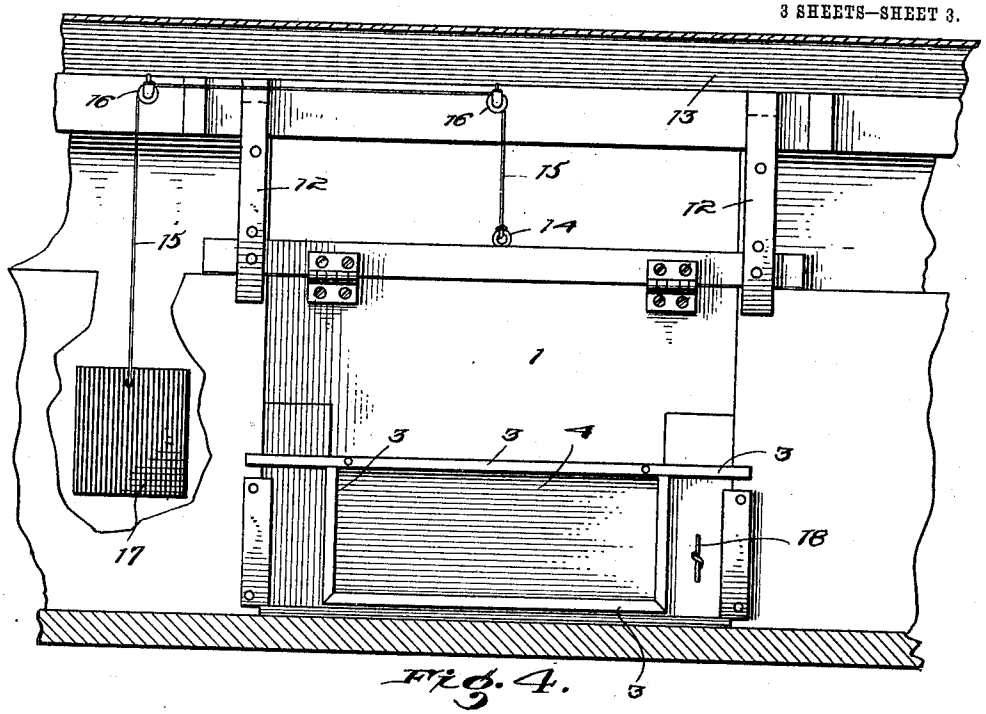

Fig. 4.

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UNITED STATES PATENT OFFICE.

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GRAIN-DOOR FOR BOX-CARS.

1,037,077. Specification of Letters Patent. Patented Aug. 27, 1912.

Application filed October 4, 1910. Serial No. 585,338.

To all whom it may concern:

Be it known that I, ADOLF EDUARD H. STEINMANN, a citizen of the United States of America, residing at Bettendorf, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Grain-Doors for Box-Cars, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to doors for grain cars and the principal object of the same is to provide a grain car door which can be readily operated to facilitate the unloading of the car and which can be constructed economically and readily fitted within the doorway of a car.

In carrying out the objects of the invention generally stated above, it will be understood, of course, that the essential features thereof are necessarily susceptible of changes in details and structural arrangements, certain preferred and practical embodiments of which are shown in the accompanying drawings, wherein:—

Figure 1 is a perspective view of a car door constructed in accordance with this invention. Fig. 2 is an enlarged perspective view thereof, viewed from the side opposite to that shown in Fig. 1. Fig. 3 is a transverse vertical sectional view of a car equipped with doors constructed in accordance with this invention. Fig. 4 is a similar view taken on the line 5—5, Fig. 3.

Referring to the accompanying drawings by numerals, and particularly to Figs. 1, 2 and 4 thereof, it will be seen that the improved grain car door comprises a door 1 the lower portion of which is provided with an opening 2 the edges of which are surrounded by the cleats 3. A door 4 is provided for said opening, said door having a hinge connection 5 with the body 1 and being limited in its movement in one direction by the projecting ends of one of the cleats 3. Said cleats overlap the edges of the opening 2 and in addition to acting as stops for the door 4, seal the cracks between the edges of the door and the opening so that grain will not leak therethrough. A latching lever 6 has a hinge connection 7 at one end with the door 1, the free end of said lever provided with a slot 8. The lever 6 is extended across the outer surface of the door 4 and the end slot is engaged by a staple 9 carried by door 1. A key 10 is then passed through staple 9 to lock the lever across the door 4 to prevent the said door opening. The door 1 has its upper horizontal edge hinged to a supporting bar 11. The ends of bar 11 project beyond the ends of the door and are slidably mounted in vertical guides 12 carried by the upper portions of the sides of the doorway of a car 13. Bar 11 is provided with a central eye 14 to which one end of a cable 15 is fastened, said cable passing over pulleys 16 in the top of the car and extending down between the wall at one side of the car and equipped with a weight 17 which counterbalances the door so that the same can be readily raised. A second cable 18 extends from the door 1 and passes over a pulley 19 and is equipped with a weight 20. This arrangement of cables, permits the supporting bar 11 to contact with the top of the doorway, whereupon the door 1 can be swung vertically relative to said bar 11 by means of the cable 18 so that said body can be held in close proximity to the car roof.

The door described in the foregoing is a permanent part of the car, and as has been explained, can be placed against the roof when not in use.

What I claim as my invention is:—

In a grain door for box cars, the combination with a main door having a door opening at the lower part thereof, a bar extending horizontally above said door and hingedly connected thereto, said bar being vertically movable with the door, a counterweight to assist in vertical movement of the bar and door, a second door having its upper edge hinged to the first door and opening outwardly, said second door constituting a closure for the door opening of the first door, a second counterweight, a flexible strand connecting the second counterweight and the lower part of the second door whereby to constitute means to assist in closing the second door, and means to assist in swinging the first door about the hinges connecting the same with the cross bar, and locking means for the second door.

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

A. EDUARD H. STEINMANN.

Witnesses:

W. D. PETERSEN,

ARTHUR H. EBELING.