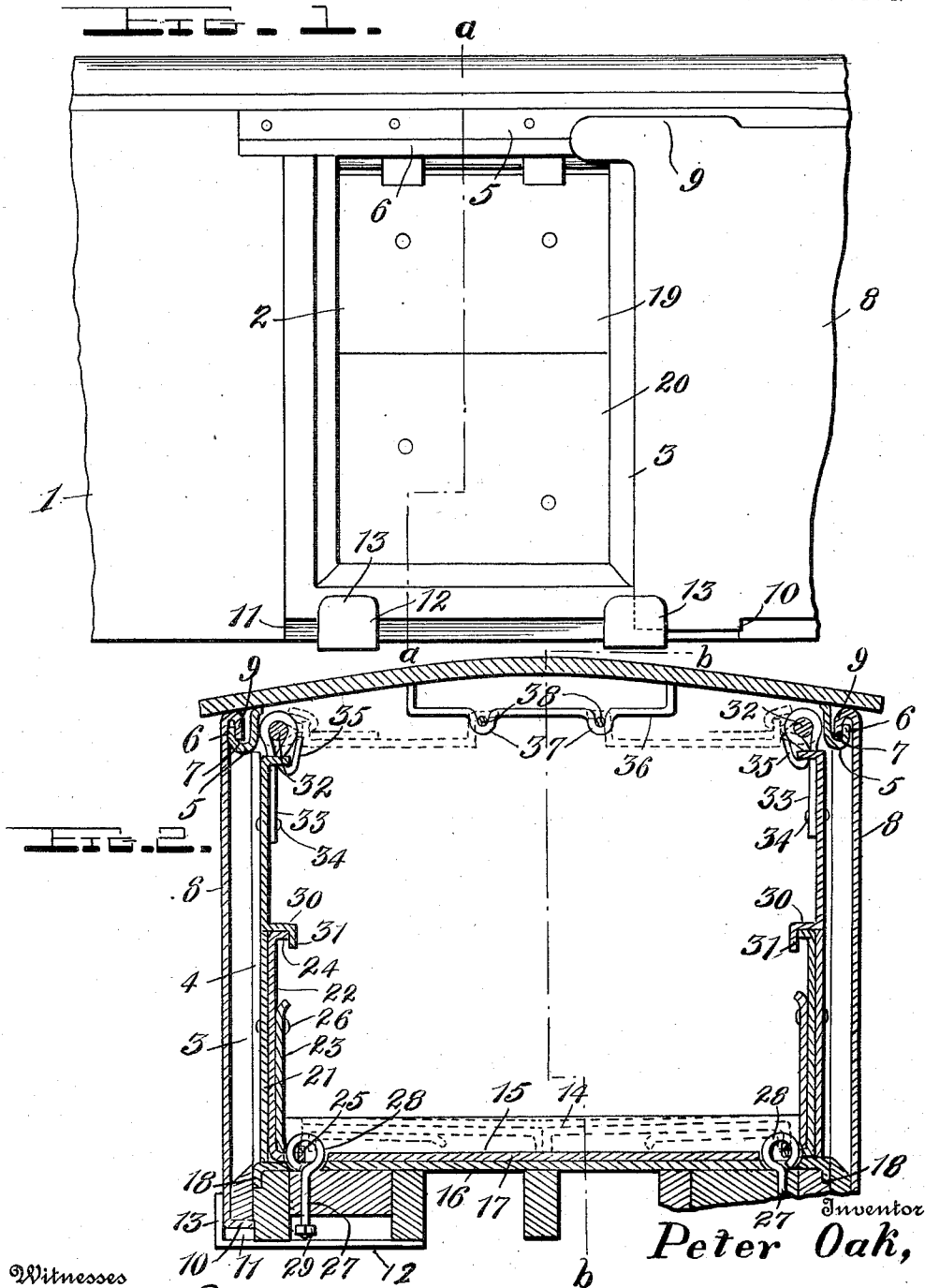


P. OAK.
GRAIN DOOR FOR FREIGHT CARS.
APPLICATION FILED APR. 22, 1911.

1,018,773.

Patented Feb. 27, 1912.

2 SHEETS—SHEET 1.



Witnesses

Chas. L. Griebauer.
L. G. Ellis.

By

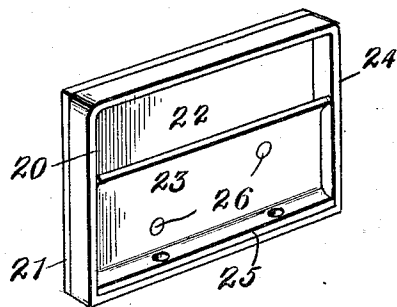
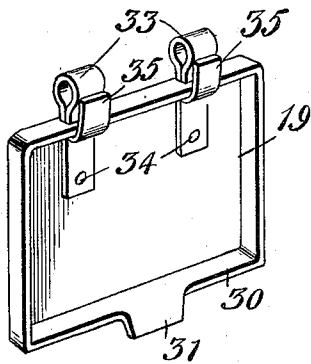
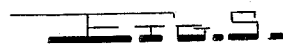
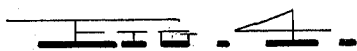
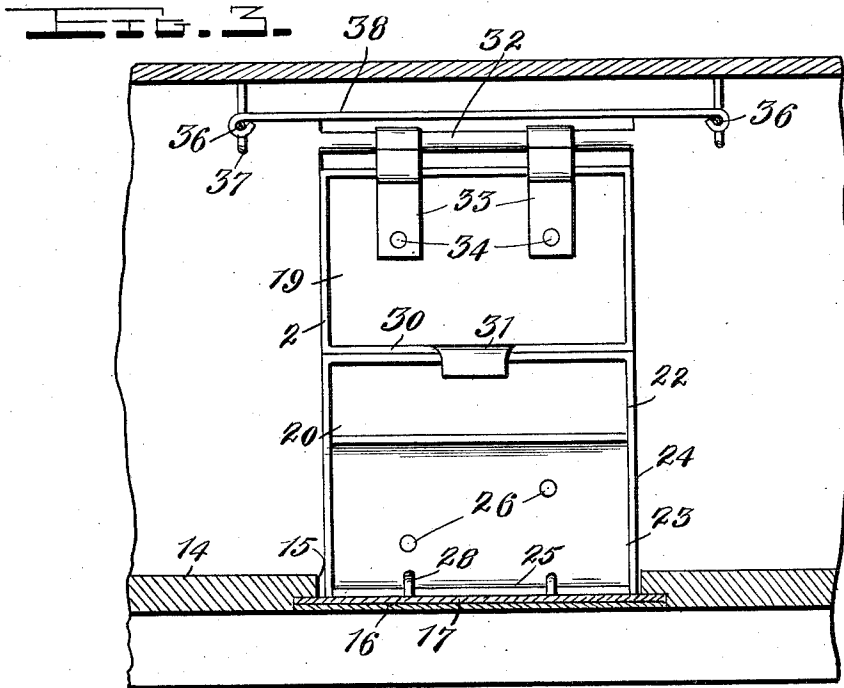
Watson E. Coleman,
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2 SHEETS—SHEET 2.



Witnesses

Chas. L. Griesbauer.
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Inventor
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UNITED STATES PATENT OFFICE.

PETER OAK, OF LAUREL, NEBRASKA.

GRAIN-DOOR FOR FREIGHT-CARS.

1,018,773.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed April 22, 1911. Serial No. 622,691.

To all whom it may concern:

Be it known that I, PETER OAK, a citizen of the United States, residing at Laurel, in the county of Cedar and State of Nebraska, have invented certain new and useful Improvements in Grain-Doors for Freight-Cars, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in grain doors for railway freight cars and consists in the construction, combination and arrangement of devices hereinafter described and claimed.

The object of my invention is to provide an improved door of this class which is extremely strong and durable, which may be readily opened and closed and may be readily secured both in opened and in closed position.

In the accompanying drawings Figure 1 is an exterior side elevation of a portion of a car provided with a grain door constructed in accordance with my invention; Fig. 2 is a transverse sectional view of the same on the plane indicated by the line *a-a* of Fig. 1 and also is a section of the outer door, the latter, in this figure, being indicated in closed position; Fig. 3 is a longitudinal sectional view of the car on the plane indicated by the line *b-b* of Fig. 2. Fig. 4 is a detail perspective view of the upper member of the grain door; and Fig. 5 is a similar view of the lower member of the grain door.

In the embodiment of my invention here shown the wall 1 of the car is provided with a door opening 2 in opposite sides of which are vertical jambs 3 which are faced on their inner sides with metallic plates 4. On the outer side of the wall is a guiding and supporting rail 5 which is provided with an outwardly and upwardly extending portion which forms a flange 6 and a channel 7. The outer door 8, which is preferably made of iron or steel, is formed at its upper side with hooks 9 which bear on the flange 6 and engage the channel 7 thus slidably connecting the door to the rail, and the door is provided at its lower side with an in-turned ear 10 which operates in a groove 11 at the base of the car wall or side. A pair of brackets 12 are secured under the bottom of the car and have at their outer ends upturned flanges 13 which engage the lower side of the outer door 8 and prevent the door from swinging laterally.

The floor 14 of the car is provided in its upper side with a recess 15 which extends transversely across the floor and between the door openings in opposite sides of the car. This recessed portion of the floor is covered by a pair of superposed steel or iron plates 16 and 17, the lower plate 16 having down-turned flanges 18 at its ends which are embedded in the bottom of the car. The upper plate 17 terminates short of the side walls of the car.

Each of my improved grain doors comprises an upper member 19 and a lower member 20. The lower member 20 comprises an outer plate 21 which is preferably made of steel, an inner plate 22 and also a reinforcing plate 23, said inner and reinforcing plates being also preferably made of steel. The inner plate 22 has an in-turned flange 24 which extends around its side edges. The reinforcing plate 23 has an in-turned flange 25 which bears on the flange 24 at the lower side of the member 20. The said plates are secured together as by means of suitable rivets 26.

Bolts 27 extend through and are movable slightly in a vertical direction in openings in the bottom of the car and are provided at their upper ends with eyes 28 which pass through openings in the bottom flanges of the lower member 20 and in the flanges 25 of the reinforcing plate 23 and thereby the said eye bolts serve to pivotally connect the lower members of the doors to the bottom of the car. The slight vertical movement of the eye bolts affords clearance for the flanges at the lower sides of the lower door members so that the lower door members may be folded inwardly in the car and disposed on the upper plate 17 in the recess 15. The depth of the said recess is such that when the lower door members are thus in opened position and extended across said recess their upper surfaces are flush with the surface of the car floor. It is obvious that the lower door members may be readily turned to a vertical position and disposed to bear against the plates 4 of the inner sides of the jambs 3. By first taking off the nuts 29 from the lower portions of the eye bolts the lower door members, together with the eye bolts, may be readily removed, if desired, for the purposes of repair or for other purposes.

Each upper member 19 of the grain door is made of a plate of steel or iron which is

provided with an inwardly extending flange 30 extending around its sides and is also provided at its lower side with a downwardly directed catch 31 to bear against the upper flange of the inner plate of the lower door member when the lower door member is in vertical position. The car is provided at each side and above each of its door openings with a transversely disposed bar 32 which is engaged by hinge straps 33 with which the upper door members are provided. One end of each hinge strap is secured to the inner side of the upper door member 19 as at 34. The said hinge straps pass around the bars 32 and the opposite end of each hinge strap is passed through an opening in the upper flange of the upper door member and reversely bent as at 35. Hence the upper members are hinged at the upper sides so that the said upper member may be swung inwardly under the car roof or lowered to a vertical position to cover the upper portions of the door openings and by first straightening and removing the inner ends of the hinge straps the said straps may be readily disengaged from the bars 32 and permit the removal of the upper door member when this is desired.

Hanger yokes 36 depend from the roof of the car at suitable points and each is provided with a locking recess 37. Locking bars 38 have eyes at their ends which engage the said hanger yokes so that the said locking bars are laterally movable on the hanger yokes. Hence when one of the upper door members is swung to opened position under the roof of the car one of the locking bars may be moved so as to be engaged by the catch 31 of said upper door member so as to support the said door member in elevated, opened position, the locking rod being secured in locking position by engaging the same with the recess 37 of one of the hanger members.

It will be observed upon reference to Fig. 2 of the drawings that owing to the construction of the doorway with its jambs a space is formed between the members of the inner grain door and the outer door 8 which admits of the circulation of air between the inner and outer doors and hence they are prevented from rusting.

Having thus described my invention I claim:

1. A structure of the class described having a grain door comprising a lower member hinged at its lower side, an upper member hinged at its upper side and provided with a downwardly directed catch to engage the upper side of the lower member when both members are in closed, vertical position, hanger yokes depending from the roof of the structure, and a locking bar carried by and laterally movable on the hanger yokes for engagement by the catch of the upper member when the latter is in elevated position.

2. A structure of the class described having a grain door comprising a lower member hinged at its lower side, an upper member hinged at its upper side and provided with a downwardly directed catch to engage the upper side of the lower member when both members are in closed, vertical position, hanger yokes depending from the roof of the structure, and a locking bar carried by and laterally movable on the hanger yokes for engagement by the catch of the upper member when the latter is in elevated position, the said hanger yokes having means to secure the locking bar in adjusted position.

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

PETER OAK.

Witnesses:

WILLIAM T. GRAHAM,
WAITE G. BARBOUR.