C. F. WALTER.

GRAIN CAR DOOR.

APPLICATION FILED FEB. 12, 1914.

1,167,539.

Patented Jan. 11, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

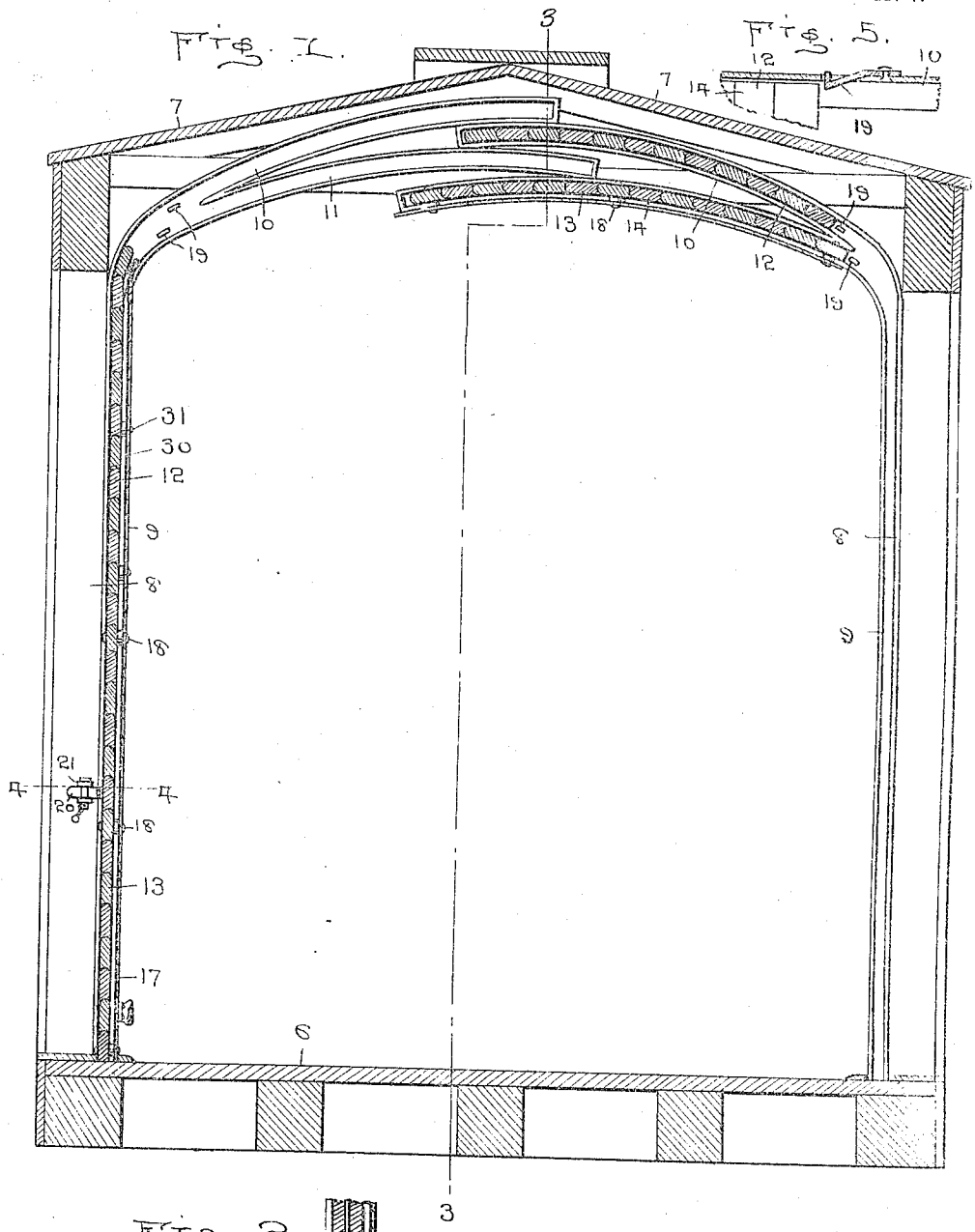
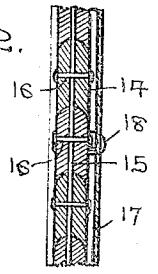


Fig. 5.

Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

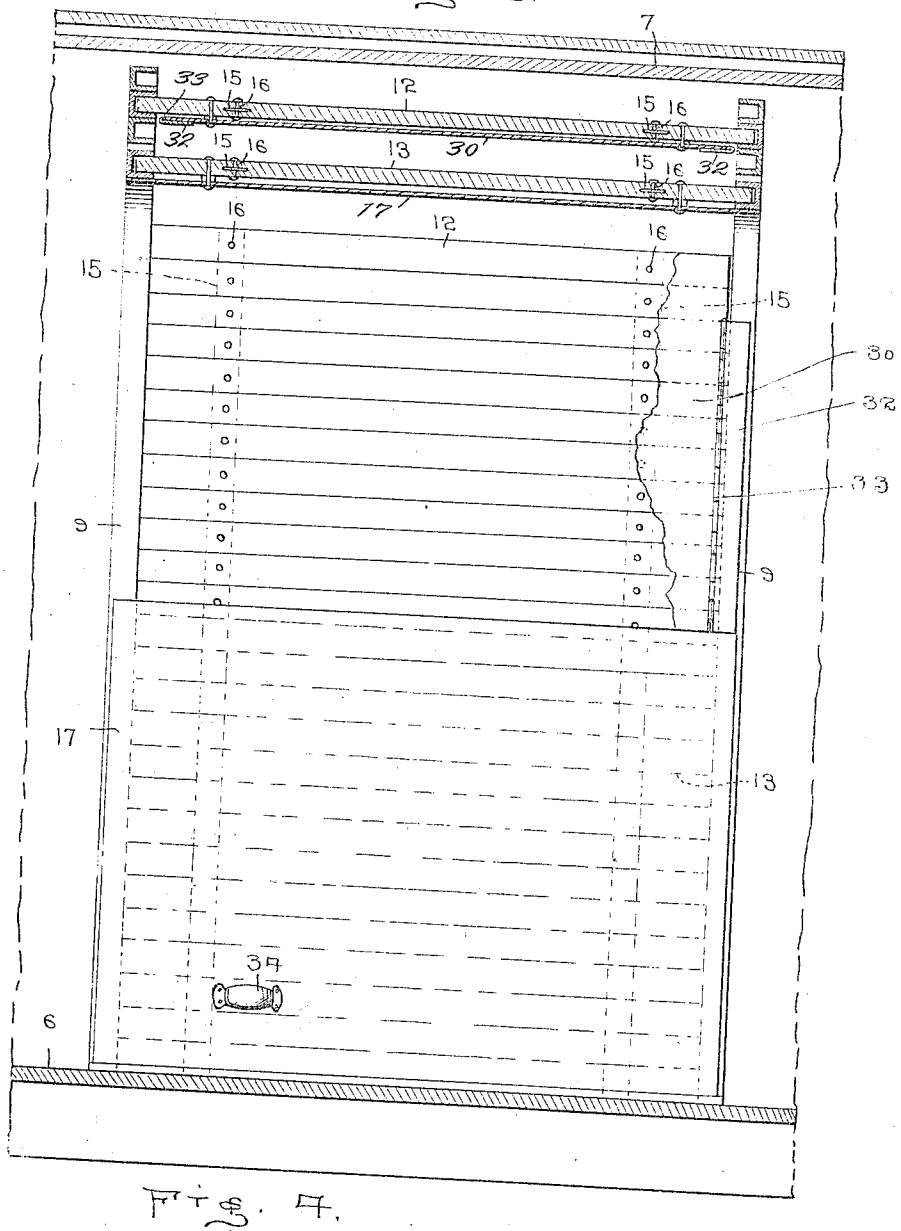
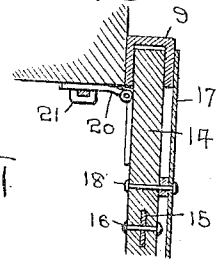


Fig. 4.



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UNITED STATES PATENT OFFICE.

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GRAIN-CAR DOOR.

1,167,539. Specification of Letters Patent. Patented Jan. 11, 1916.

Application filed February 12, 1914. Serial No. 818,223.

To all whom it may concern:

Be it known that I, CHARLES F. WALTER, a citizen of the United States, residing at Quenemo, in the county of Osage and State of Kansas, have invented certain new and useful Improvements in Grain-Car 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 has for an object to provide a grain car door for railway freight cars and the like which shall be simple in operation, inexpensive to manufacture, and efficient and durable in use.

Another object is to provide a grain door consisting essentially of two sections of parts independently operable whereby one of said sections may be lowered to partially close the door way.

Another object is the provision of means for reliably supporting the parts of the sectional door in inoperative position so as to present the maximum economy of space.

With the above and other objects in view, my invention consists in the novel features of construction and the formation and arrangement of the parts hereinafter more specifically described, claimed and illustrated in the accompanying drawings, in which,

Figure 1 represents a transverse vertical sectional view through a grain car showing the application thereto of my improved grain doors. Fig. 2 represents a fragmental detail sectional view through the door. Fig. 3 represents a vertical sectional view on the line 3—3 of Fig. 1, showing only a fragmental portion of the lining and one wing of the upper section of the door. Fig. 4 represents a sectional view on the line 4—4 of Fig. 1, and, Fig. 5 represents a detail sectional view of the latch member for retaining the door sections in raised position.

Referring to the drawings in detail, the numeral 6 indicates the floor of a freight or other railway car having the ordinary roof 7 and oppositely arranged door frames 8.

In carrying out my invention I secure to the vertical beams of each doorway vertically arranged guides 9 preferably consisting of channel bars, as clearly shown in Fig. 4, having the upper ends bifurcated or forked to provide the upper and lower guides 10 and 11 respectively. Each door is composed of an upper section 12 and lower section 13 suitable for vertical movement between the guides 9, and each section comprises a plurality of slats 14 having the upper longitudinal edges rounded and the lower edges concaved so as to closely fit together as clearly illustrated in Fig. 2, and prevent the escape of grain between the slats. The slats 14 are formed adjacent their opposite ends with vertically alined openings through which are extended flexible straps 15 of steel or some suitable metal secured in position by rivets or bolts 16. The upper section 12 of the door is adapted to be supported in raised or inoperative position within the upper guide 10 and the lower door section 13 is adapted to be supported in inoperative position in the lower guide 11.

A lining 17 formed of spring sheet steel or the like is secured in spaced relation by suitable rivets 18 and collars to the inside of each lower door section 13 and is arranged upon the inside of the channel bar or guide 9. A similar lining 30 of sheet steel is secured by rivets 31 and collars to the upper door section 12 and is formed at its vertical edges with wings 32 hinged at 33 and adapted to lie against the channel bar 9 when the door section is in operative position as shown in Fig. 3 and adapted to be folded inwardly against the lining 30 when the upper door section is moved upwardly out of operative position.

The object of extending the lining 17 over the inner faces of the channel bars or guides 9 is to cause the lower sections of the door to follow the inner wall of the channel and pass into the lower guides 11, while by hingedly securing the overlapping portions of the upper lining of the door to the fixed lining 30, it will be seen that as soon as the wings engage the curved portion of the walls, they will swing inwardly out of engagement with the wall of the channel so that the tension of the lining will cause the upper section of the door to travel against the outer walls of the channel and move into the upper guides 10. It is therefore essential that the hinged portion of the lining be provided, as otherwise, both sections of the door would be guided toward the same channel or upper guides.

Suitable spring latch members 19 are extended through openings formed at the

forks in the guides 9 and are adapted to engage the lower slat of each door section and lock the latter in raised position. It will be understood that by laterally pressing against the projecting end of the latch members 19 the same will be moved out of the path of the door sections and the latter allowed to lower.

Suitable hasp members 20 are pivoted adjacent the ends of one of the slats of each of the upper and lower door sections 12 and 13 and are adapted to coöperate with loops 21 secured to the door frame to lock the door sections in operative position. Suitable handles 34 are secured to each door section for operating the latter.

What I claim is:—

1. In a door construction, a pair of channel-shaped guides, said guides being forked at their upper ends to form upper and lower guide members, an upper and lower flexible door section adapted to move in said guides to form a closure, a metallic lining on the upper door section having a hinged portion to extend over the inner faces of the channels when in lowered position and to move out of engagement with said inner faces when in elevated position whereby the tension of said lining will direct the upper section into said upper channel, and a similar lining on the lower door section having a fixed edge engaging the inner face of the channels whereby the lower door section will be guided into the lower guide members when in elevated position.

2. In a door structure, a pair of channel-shaped guides terminating at their upper ends in an upper and lower guide member, a two-part flexible door slidable in said guides, a lining on the inner face of one section of the door, the tension of which is adapted to direct said sections into the uppermost guide member, and a similar lining on the other door member adapted to guide said latter door section into the lowermost guide member when said sections are in elevated position.

3. A door structure comprising a pair of channel-shaped guides, said guides being bifurcated at their upper ends to form upper and lower guide members, a door comprising an upper and lower section, a metallic lining on the inner face of said upper door section adapted to direct tension thereagainst and guide the same into the upper guide members, wings hingedly secured to the edges of said lining adapted to extend over the inner faces of the guide members when in lowered position, a similar lining on the lower door section having fixed edges projecting over the inner faces of the guides adapted to move the lower door section into the lowermost guide members, and means to normally retain the door sections in their respective elevated positions.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. WALTER.

Witnesses:
W. M. EAGLE,
F. C. WHITE.