

No. 685,505.

Patented Oct. 29, 1901.

W. R. BROWNING.
GRAIN DOOR FOR CARS.

(Application filed Apr. 11, 1901.)

(No Model.)

FIG. 1.

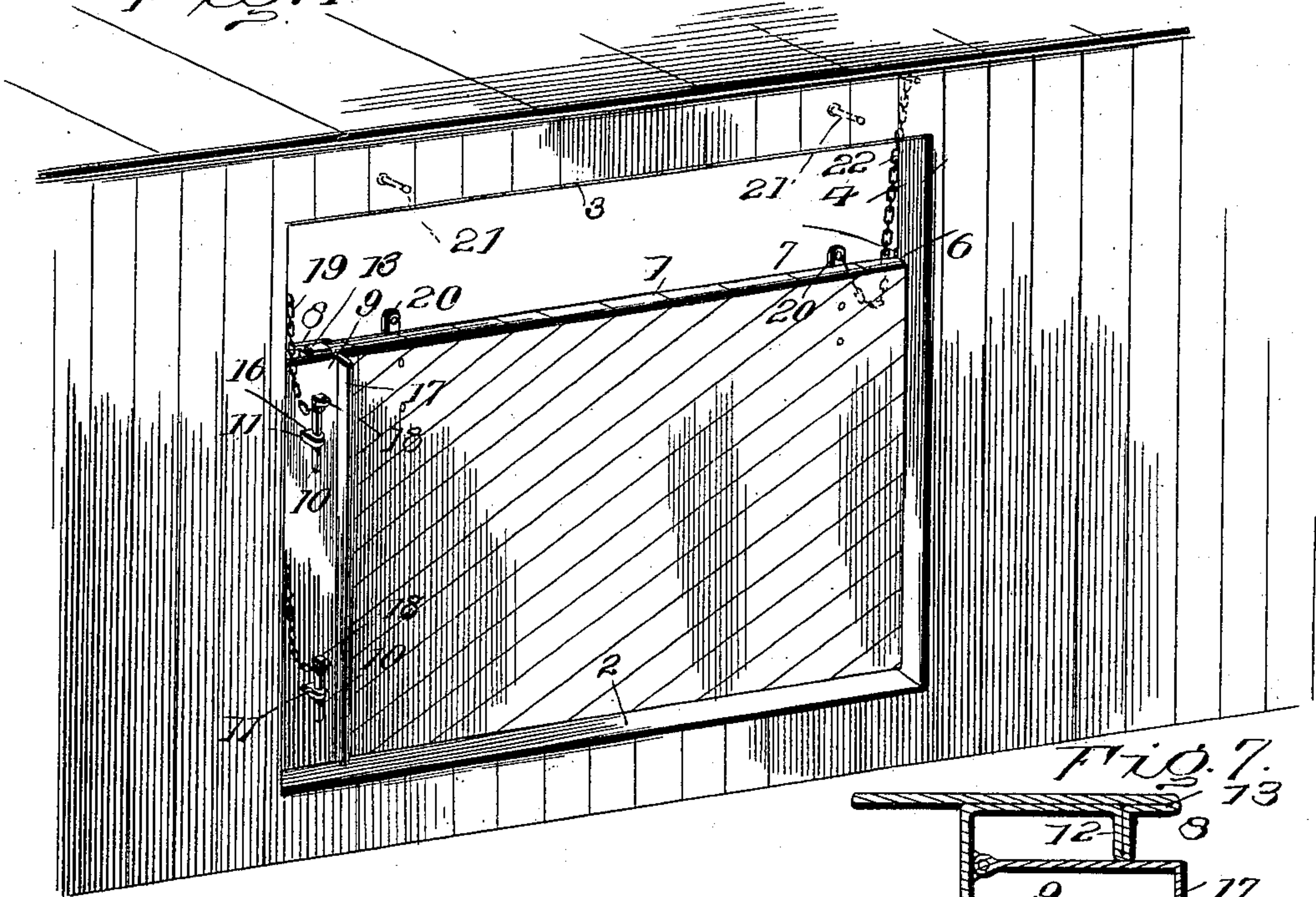


FIG. 7.

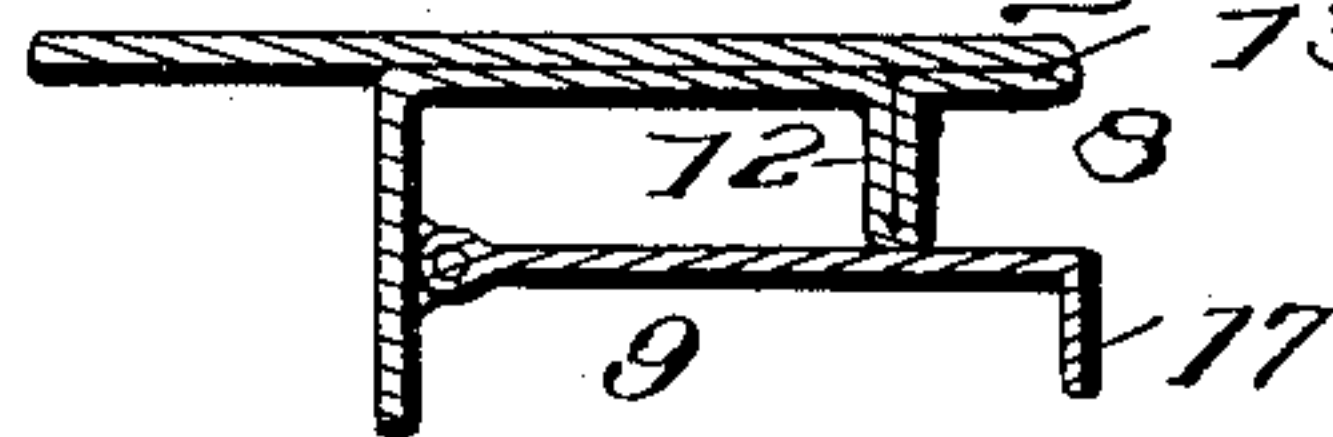


FIG. 2.

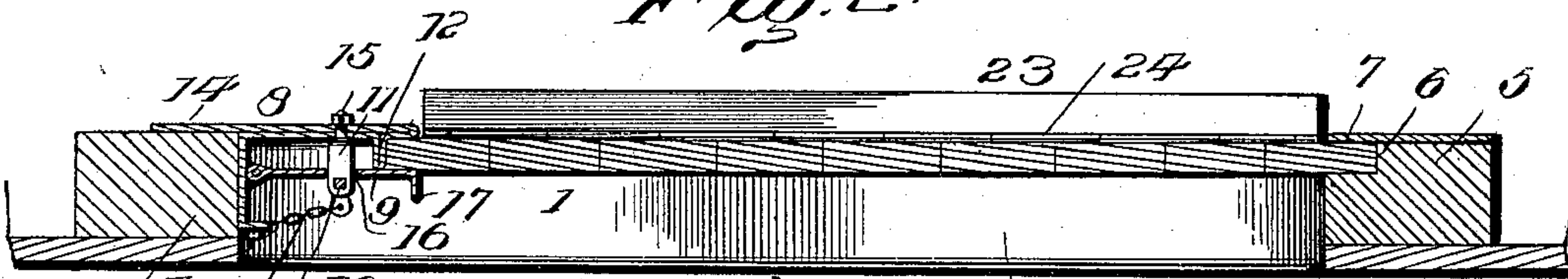


FIG. 3.

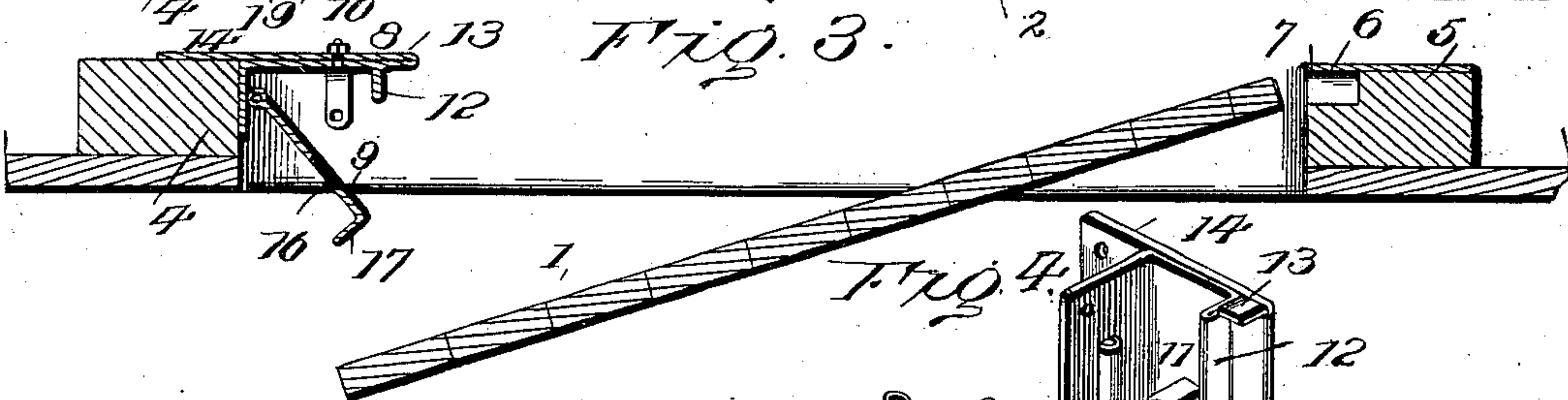


FIG. 4.

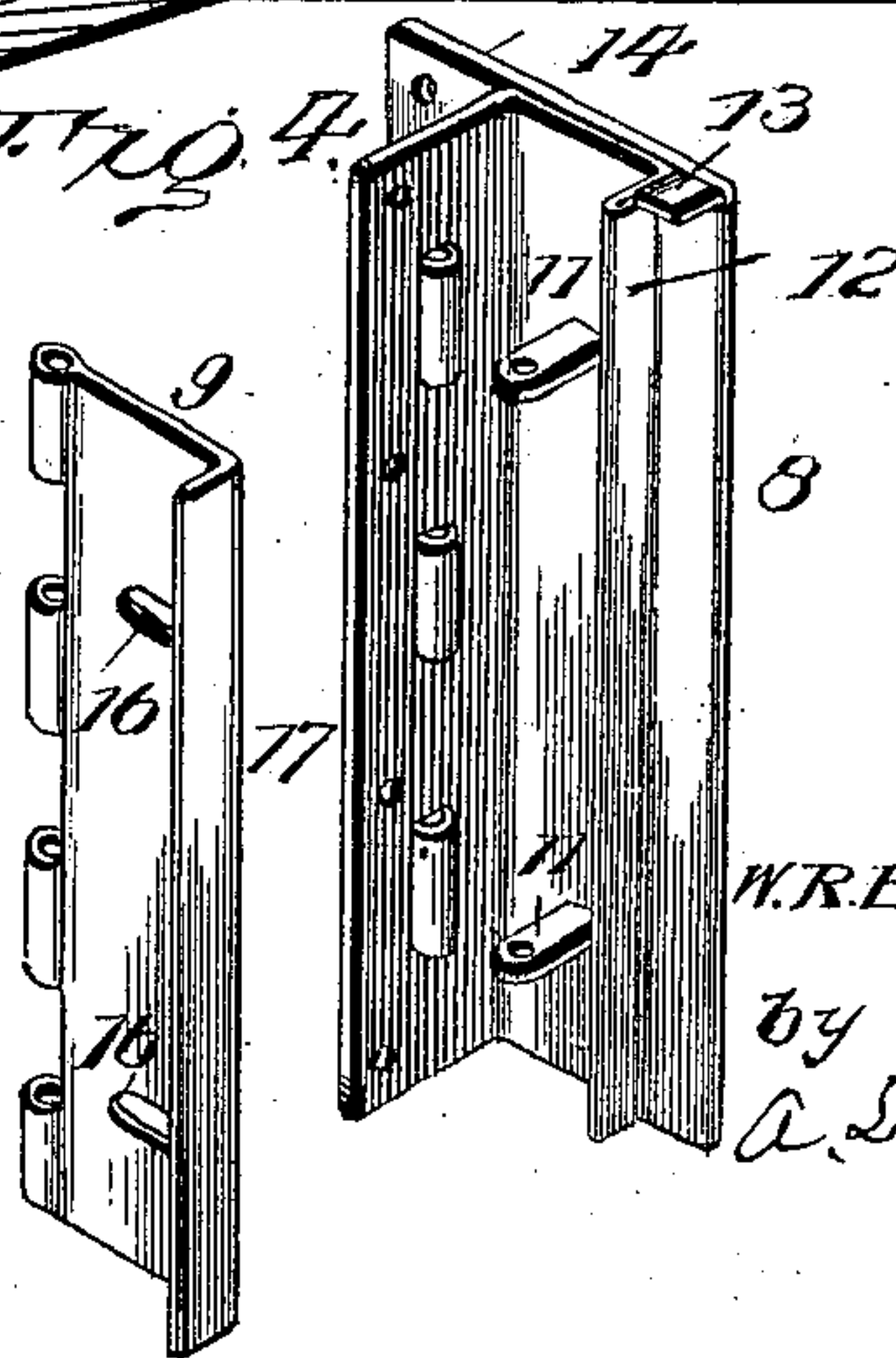


FIG. 5.

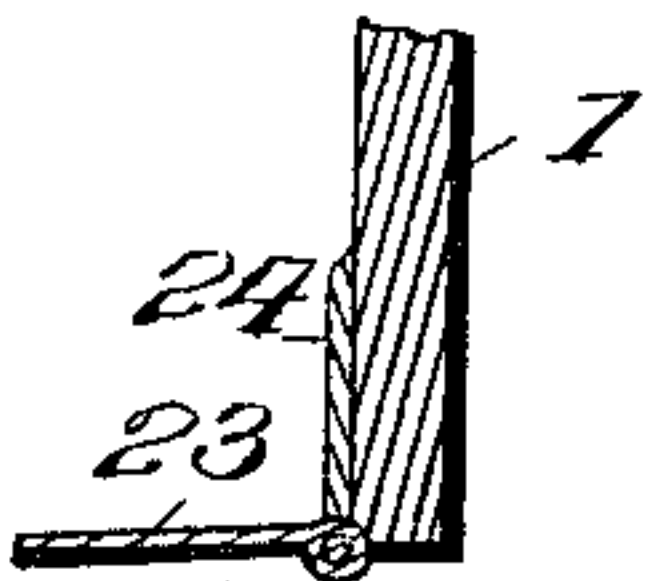
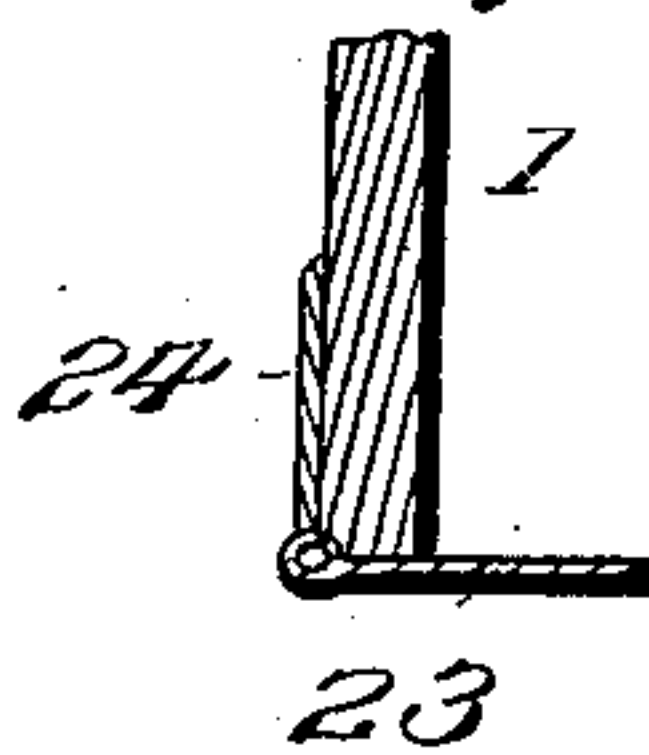


FIG. 6.



Witnesses

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GRAIN-DOOR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 685,505, dated October 29, 1901.

Application filed April 11, 1901. Serial No. 55,412. (No model.)

To all whom it may concern:

Be it known that I, WALTER ROLLIN BROWNING, a citizen of the United States, residing at Padonia, in the county of Brown and State of Kansas, have invented certain new and useful Improvements in Grain-Doors for Cars; 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.

The purpose of this invention is the provision of a door especially designed for railway freight-cars in shipping grain or like commodity which is liable to waste unless the door fits tight, and which will be long-lived compared with the period of service of this class of closures as generally constructed and in use, and which when fastened will be secure, and which when released will instantly open under pressure of the grain or confined goods.

The invention consists, essentially, of the fastenings for securing the door when in place and the special features summarized in the claims, and the best form of manufacture now known to me is the construction substantially as shown in the drawings and hereinafter described in detail.

Figure 1 is a perspective view of a door embodying the invention. Fig. 2 is a horizontal section, the door being secure. Fig. 3 is a view similar to Fig. 2, the door being released. Fig. 4 is a perspective view of the clamp-fastening. Fig. 5 is a detail section of the lower portion of the door. Fig. 6 is a view similar to Fig. 5, the hinged strip being folded beneath the lower edge of the door. Fig. 7 is a transverse section of the clamp-fastening on a larger scale.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The opening closed by the door 1 is bounded by the sill 2, lintel 3, and jambs or posts 4 and 5. The jamb or post 5 is formed in the side facing the door-opening, with a channel or groove 6 to receive the adjacent end of the door 1 when the latter is in position. This channel or groove 6 is shown located at the inner corner of the jamb and is closed at its inner side by a strip 7, fastened to the inner

side of the jamb or post 5 in any substantial manner. The height of the channel or groove 6 corresponds to the height of the door, so as to prevent vertical movement or play thereof when positioned in the door-opening.

The clamp-fastening applied to the jamb or post 4 consists of a fixed member 8 and a hinged or pivoted member 9, between which the proximal end of the door 1 is clamped by means of suitable fastenings, which, as shown, consist of cotter-pins 10 and eyes 11. The members 8 and 9 are metal plates and may be cast or formed from sheet metal, the latter construction being preferred because of the strength compared with the weight. Sheet-steel is best adapted for the formation of the members, although sheet metal of any kind may be advantageously employed. A rib 12 is provided upon the outside of the member 8 a short distance from the vertical edge thereof adjacent the door-opening and constitutes a stop to limit and prevent longitudinal movement of the door 1 toward the post or jamb 4 when the door is in place. A tongue 13 overhangs the space formed between the rib 12 and the adjacent outer portion of the member 8 and is intended to extend over the top edge of the door 1 and prevent vertical movement thereof. A flange or wing 14 extends outward from the member 8 to overlap the side of the post or jamb 4, to which it is firmly attached by suitable fastenings. The inner edge portion of the member 8 overlaps the inner side of the jamb 4, to which it is attached in any substantial way. The eyes 11 are secured to the member 8 and project outward therefrom and are located intermediate of the rib 12 and flange 14. These eyes 11 are in the form of lugs or studs, and their inner ends are threaded and passed through openings in the member 8 and are secured in place by nuts 15, the member 8 being clamped between said nuts 15 and shoulder at the base of the inner threaded ends of the eyes 11. The hinged or pivoted member 9 is connected to the member 8 in any manner so as to swing freely and is provided with openings 16 in position to receive the eyes 11. An outer flange 17 is provided at the edge of the hinge member 9 adjacent the door-opening to stiffen and strengthen said member and prevent buckling or warping thereof. The end of

the door 1 adjacent the clamp-fastening is secured between the outer edge portions of the members 8 and 9, which are drawn together by the cotter-pins 10 or equivalent means. These cotter-pins 10 are tapering and when driven into the projecting ends of the eyes 11 draw the members 8 and 9 together, so as to clamp the end portion of the door therebetween. The upper ends of the cotter-pins are bent to provide heads 18, which are adapted to receive the blows of a hammer or other implement when it is required to loosen or remove the pins 10 from the eyes 11 to effect a release of the door 1. In order to prevent loss of the cotter-pins, they are attached to the jamb 4 by chains 19 or equivalent means. Strap-irons 20 are attached to the upper portion of the door 1, and their upper projecting ends are formed with openings to receive pegs 21, applied to the lintel 3 for holding the door in suspension when not in position, so as to prevent its displacement or loss. A chain 22 or equivalent connection is attached at one end to one of the strap-irons 20 and is secured at its opposite end to the lintel 3 or convenient portion of the car or other structure provided with the door-opening. In order to preserve a tight joint between the lower edge of the door and the sill 2, a strap 23 is hinged to the inner side of the door in such a manner as to overlap and rest upon the sill 2 when the door is in position and to fold beneath and against the lower edge of the door when the latter is not in place, so as to be out of the way and not interfere with the ready handling of the door. This hinged strip 23 is preferably of metal and is hingedly connected to a corresponding strip 24, secured to the door, the inner lower corner portion of the door being cut away to receive the joint formed between the two strips, which are connected by a rod passed through meeting knuckles formed at the contiguous or pivoted edges of the strips. When the door is in position, the strip 23 overlaps the sills and the grain or other commodity exerting a pressure thereon holds it close against the sill, so as to prevent any escape of the grain even though a slight space should exist between the lower edge of the door and the sill. The door is placed in position by fitting one end in the channel or groove 6 and letting the opposite end enter the angular space formed between the rib 12 and the adjacent outer edge portion of the member 8, the member 9 having been turned aside. After the door is in place the member 9 is closed, so as to confine the proximal end of the door between the members 8 and 9, the hinged member being secured by inserting the cotter-pins 10 in the eyes 11 and forcing them into the said eyes, so as to clamp the door between the parts 8 and 9. The door is released by driving upward upon the heads 18 of the cotter-pins, and when the latter are withdrawn from the eyes 11 the outward pressure against the inner side of the door will force the latter

outward, thereby permitting the unloading of the car. It will be observed that the door is not required to be nailed or secured by means other than the clamp-fastening and the channel or groove 6. Hence it is not subjected to the wear and tear of doors fastened in this manner, and consequently is capable of service for a longer period of time and does not require repairs or frequent substitution.

Having thus described the invention, what is claimed as new is—

1. In combination with a structure having a door-opening, and a door for closing the same, a seat at one side of the door-opening to receive an end of the door and having a part extending over the upper edge of the door to prevent vertical movement thereof, and a clamp-fastening at the opposite side of the door-opening and having a part to extend over the top edge of the door to prevent vertical movement thereof, said clamp-fastening comprising a fixed and a hinged member between which the opposite end of the door is adapted to be clamped, substantially as set forth.

2. A clamp-fastening for a door comprising a fixed member having a rib on its inner side a short distance from the edge facing the door-opening to stiffen the member and form a stop, a second member hinged to the fixed member for clamping the door between the said members, and means for drawing the members together and connecting them, substantially as set forth.

3. A clamp-fastening for doors comprising a fixed member having a rib on its inner side near one edge and having a flange on the same side with the rib and a short distance from the opposite edge, a second member hinged or pivoted to the aforesaid flange, and means for drawing the two members together to clamp the door therebetween, substantially as set forth.

4. A clamp-fastening for doors comprising a fixed member having a rib near one edge to form a stop, a pivoted or hinged member having openings at different points in its length, eyes projecting from the fixed member and adapted to pass through the openings of the hinged member, and cotter-pins cooperating with the said eyes to draw the members together, substantially as set forth.

5. A clamp-fastening for doors comprising a fixed member having an outer flange a short distance from one edge, a rib adjacent the opposite edge, a tongue or stop at the upper end of the angular space between the rib and outer edge portion of the member, a second member hinged or pivoted to the flange of the fixed member and having a flange at its outer edge, and means for clamping the door between said members, substantially as set forth.

6. A clamp-fastening comprising a fixed member formed of sheet metal and comprising a rib, a flange and a tongue, the rib and flange being near to the opposite edges of the

member and projecting laterally from the same side and the tongue being located at the upper end of the member opposite the angular space between the rib and the outer edge portion, eyes secured to the member intermediate of the flange and rib, a second member hinged or pivoted to the said flange, and provided with openings for the passage of the said eyes, and cotter-pins for coöperation with the eyes, substantially in the manner set forth.

7. In combination with a structure having a door-opening and having the corner portion of a jamb cut away and having a strip closing the outer side of the cut-away portion to form a groove or channel to receive an end portion of the door; a clamp-fastening applied

to the opposite jamb of the door-opening and comprising a fixed member, and a hinged or pivoted member, eyes and cotter-pins for drawing the two members together, a door adapted to have one fitted in the aforementioned groove and channel and adapted to have its opposite end clamped between the fixed and hinged members of the clamp-fastening, and a hinged strip at the lower edge of the door to overlap the sill, substantially as set forth.

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

WALTER ROLLIN BROWNING.

Witnesses:

E. CHASE,

A. G. CHASE.