

No. 728,203.

PATENTED MAY 19, 1903.

J. W. CHURCH & M. J. O'GORMAN.

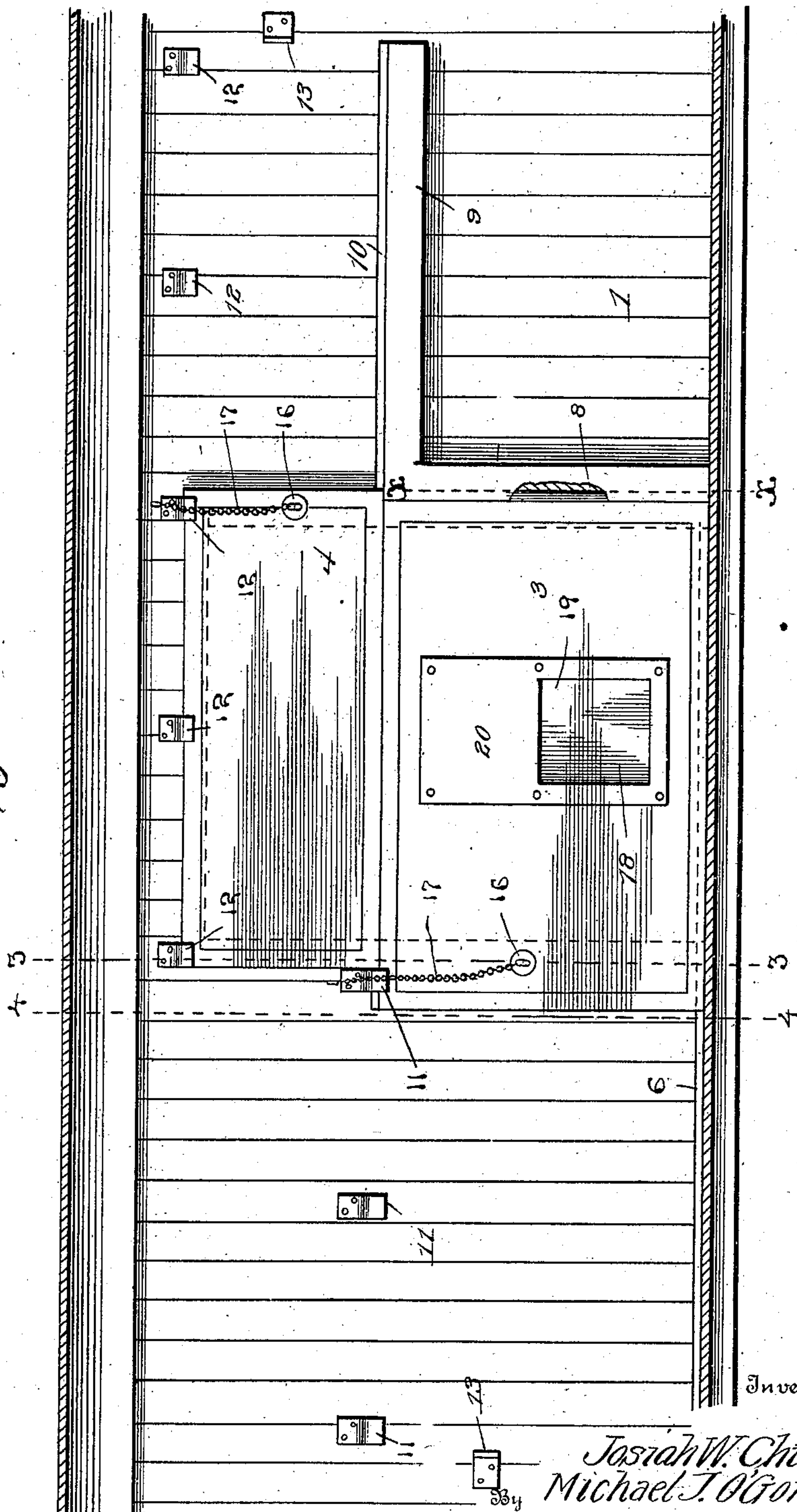
GRAIN CAR DOOR.

APPLICATION FILED APR. 9, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses  
Chas. S. Hoyer.

Inventors  
Josiah W. Church,  
Michael J. O'Gorman,  
Victor J. Evans Attorney

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3 SHEETS—SHEET 2.

Fig. 4.

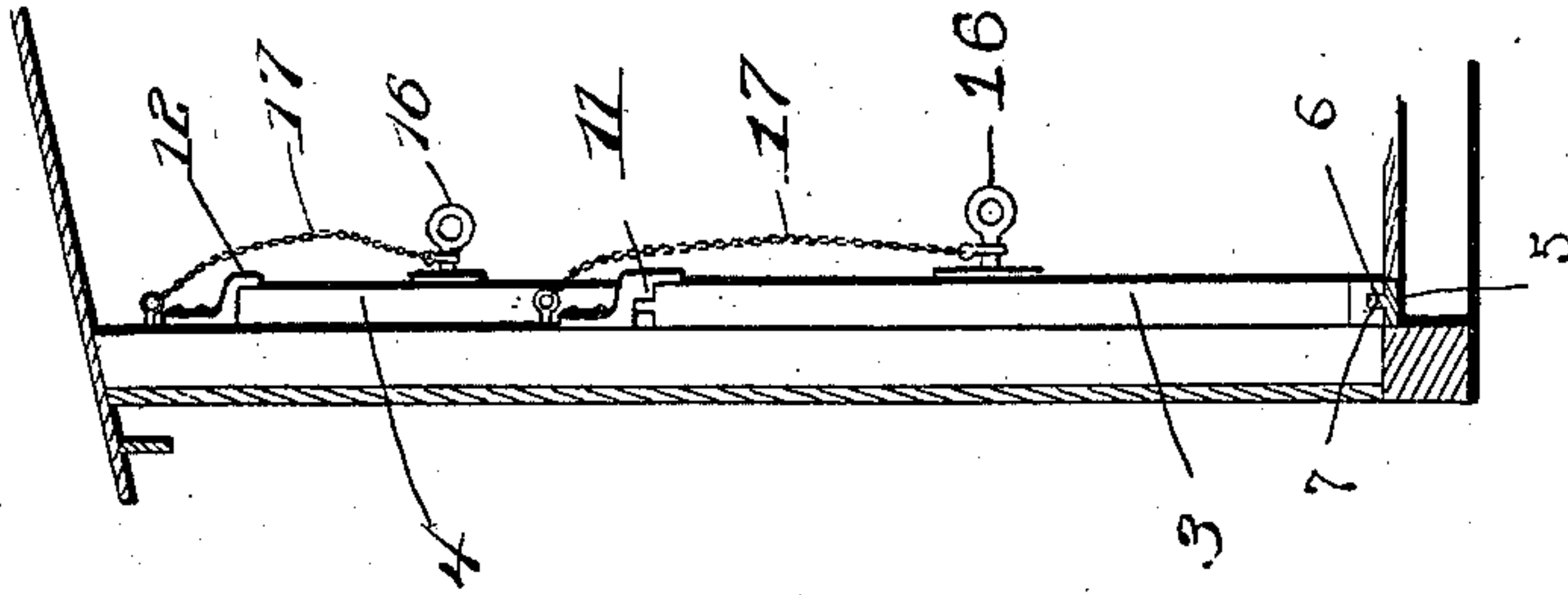


Fig. 3.

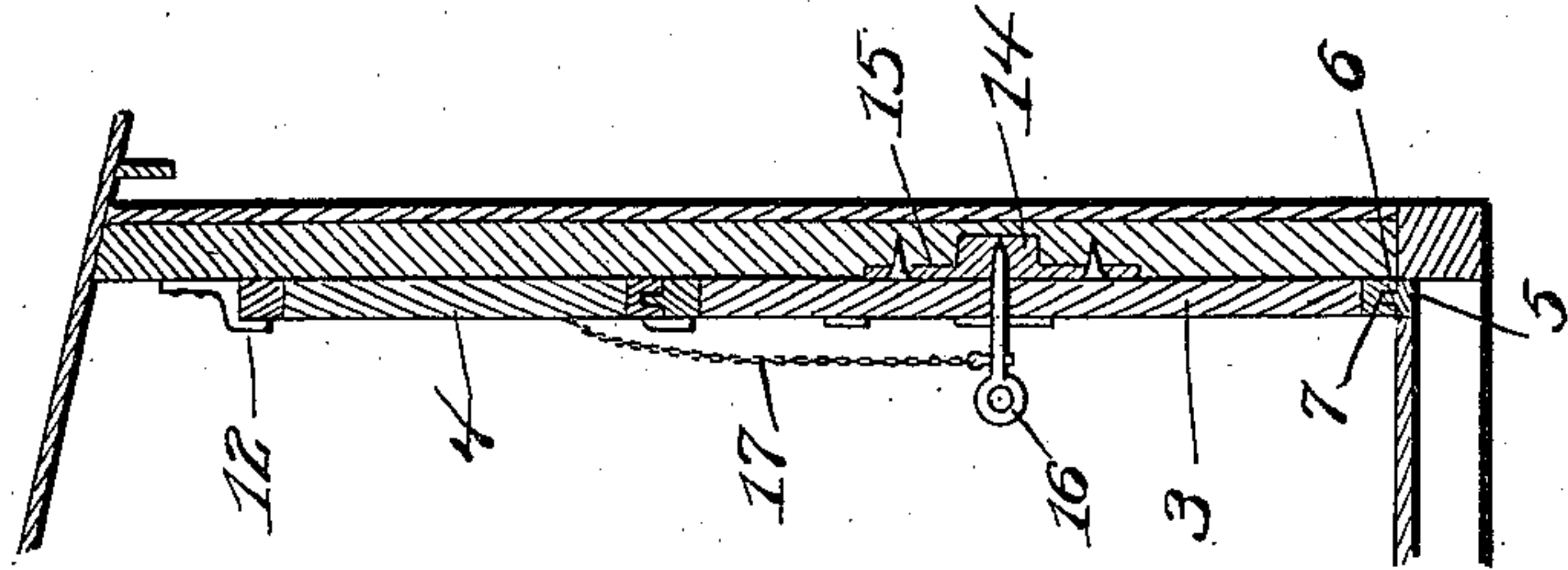
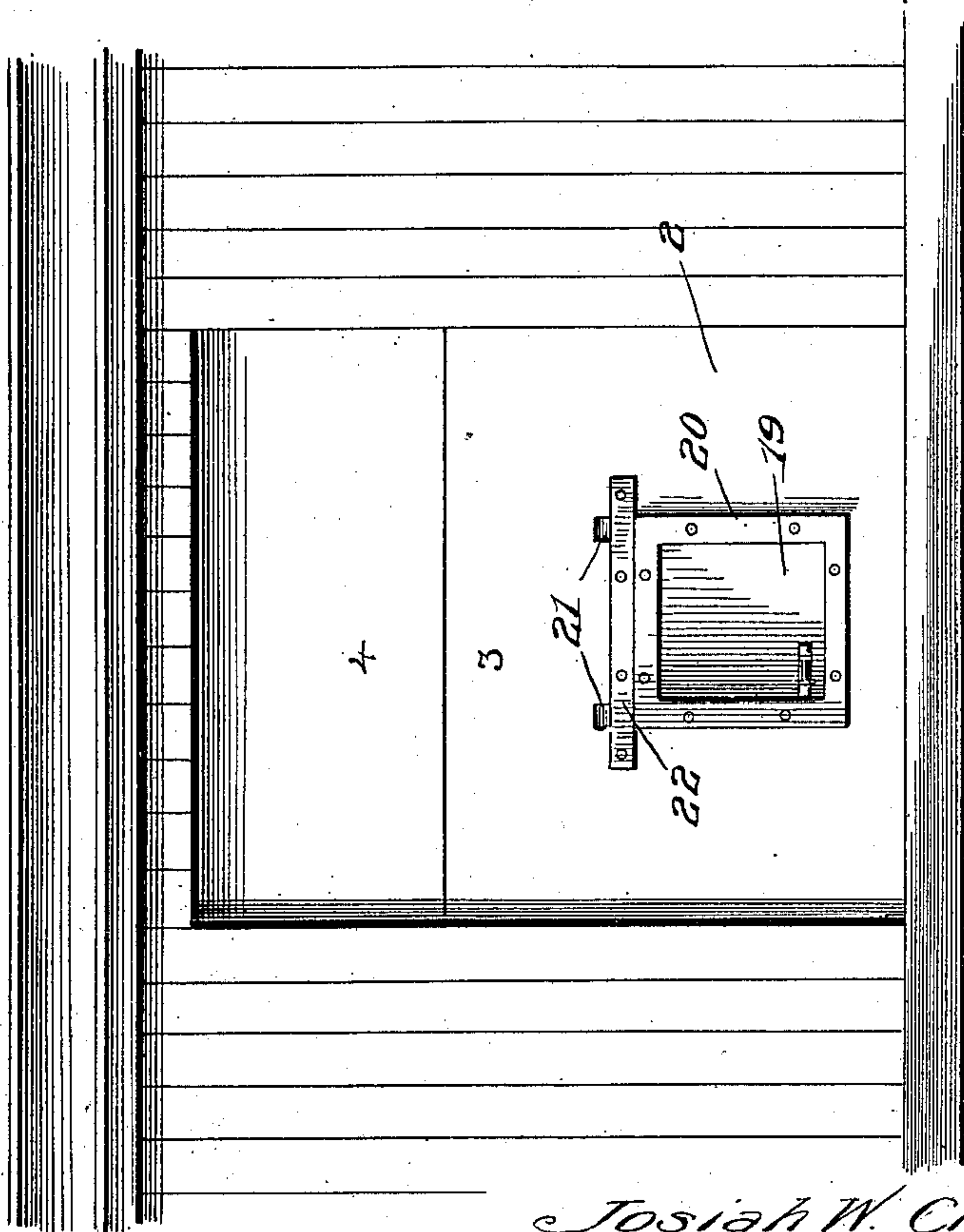


Fig. 2.



Witnesses

*Chas. S. Hoyer.*

Inventors  
*Josiah W. Church,*  
*Michael J. O'Gorman,*

By *Victor J. Evans*  
Attorney.

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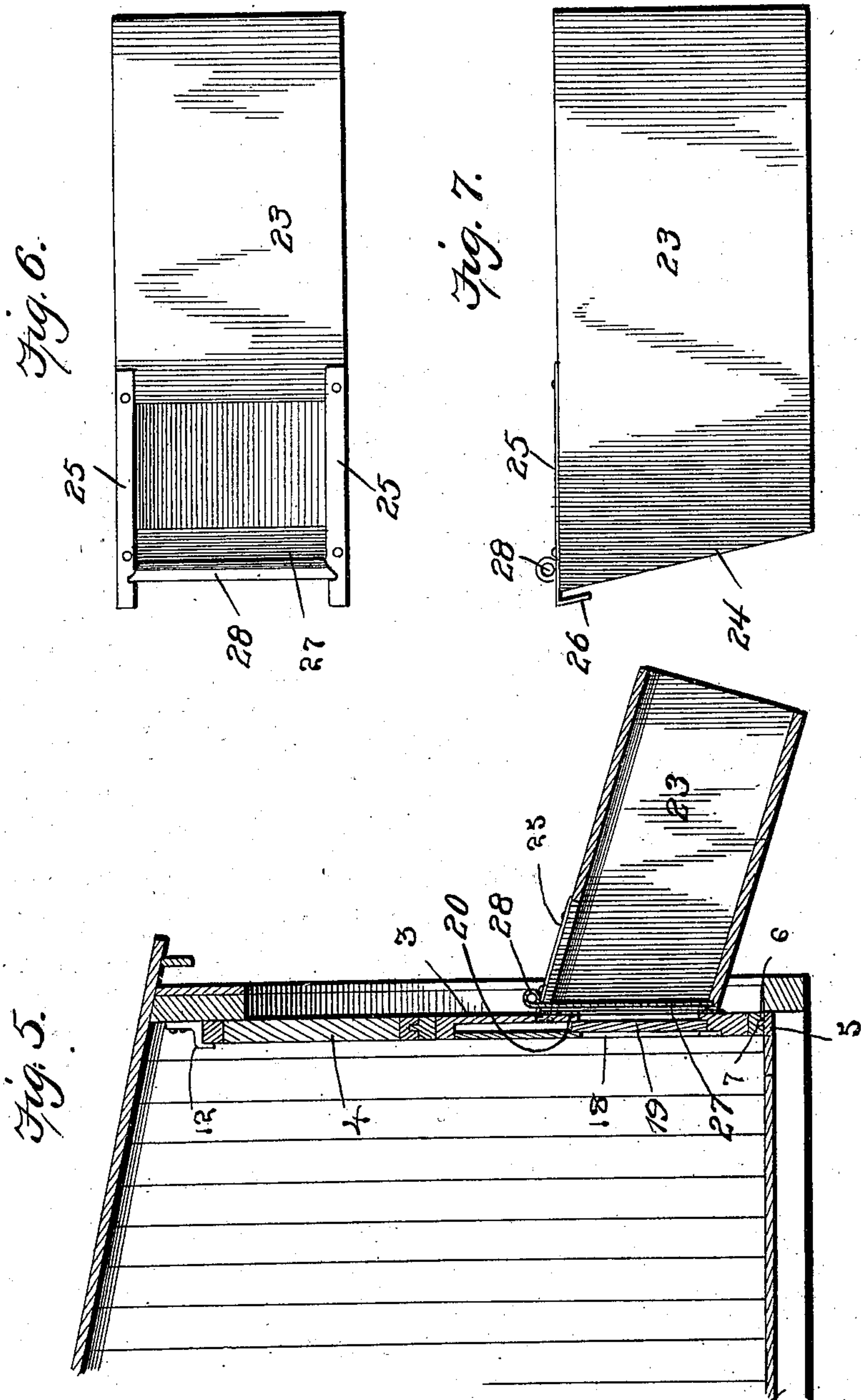
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3 SHEETS—SHEET 3.

NO MODEL.



Witnesses

*Chas. S. Hoyer*

Inventors  
*Tosiah W. Church,*  
*Michael J. O'Gorman,*

By *Victor J. Evans.*  
Attorney.



# UNITED STATES PATENT OFFICE.

JOSIAH W. CHURCH AND MICHAEL J. O'GORMAN, OF WYLIE, TEXAS.

## GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 728,203, dated May 19, 1903.

Application filed April 9, 1902. Serial No. 102,093. (No model.)

*To all whom it may concern:*

Be it known that we, JOSIAH W. CHURCH and MICHAEL J. O'GORMAN, citizens of the United States, residing at Wylie, in the county of Collin and State of Texas, have invented certain new and useful Improvements in Grain-Car Doors; and we 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 grain-car doors; and its primary object is to provide an improved door located within the car which will effectually prevent leakage of grain or seed from the car.

A further object of the invention is to provide a sectional or two-part door with secure but easily-operated supporting and fastening means.

A further object of the invention is to provide improved means for unloading the car and quickly transferring its contents to a wagon or other receptacle.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawings, which form part of this specification, and its novel features will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is an elevation of the inner side of a car equipped with the improved door. Fig. 2 is an elevation of the outer side of the door. Fig. 3 is a vertical section on the line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 1. Fig. 5 is a vertical section showing the discharge-chute in position on the outside of the door. Fig. 6 is a plan view of the chute detached from the door. Fig. 7 is a side elevation of the chute.

The reference-numeral 1 designates one side of a grain-car, having a door-opening 2.

The improved door comprises two independent sections 3 and 4, arranged one above the other.

5 designates a metallic strip set into a recess formed in the car-floor and having an upwardly-projecting tongue or rib 6. This strip 5 serves as a track upon which the lower

door 3 slides, the bottom edge of said door 50 being formed with a groove 7, into which the rib 6 fits.

8 designates a standard secured to the side of the car at one side of the door-opening and rising to the height of the door 3 to serve as a stop therefor. The edge of the door 3 fits against the standard 8 with a tongue-and-groove joint, as indicated by the dotted line  $x$  in Fig. 1.

The standard 8 is connected at its upper end to a horizontal strip 9, having a tongue 10 to fit a groove in the lower edge of the upper door 4, and said strip 9 serves as a track-way on which the door 4 slides. The joint between the lower edge of the door 4 and upper edge of the door 3 is also a close tongue-and-groove joint.

A series of horizontally-alined clamping brackets or keepers 11 is secured at one side of the door-opening above the track-strip 5 in position to engage the top edge of the door 3 and guide and support it in its sliding movement. A series of similar clamping-brackets 12 is secured to the side of the car in position to engage the upper edge of the door 4. A stop-bracket 13 is also provided for each door, said brackets being disposed at right angles to the brackets 11 and 12 and serving to limit the sliding movement of the doors. The bracket 11 nearest the door-opening also serves as a stop for the left-hand end of the door 4.

As is obvious from the illustration in Fig. 1, the two doors slide in opposite directions to clear the door-opening.

To lock the doors in closed position, we provide the means best shown in Fig. 3, consisting of a nut 14, set into the side wall of the car and having an annular flange 15 formed with holes to receive securing-screws, and a screw or eyebolt 16 of sufficient length to pass through an opening in the door and into the nut. Each of the doors 3 and 4 is provided with one of these securing devices, and the eyebolt not only locks the door against sliding movement, but also presses the door firmly against the side wall of the car.

The screws or eyebolts 16 are attached to



the side of the car by chains 17, having a swiveled connection with the eyebolts to permit the latter to turn freely.

The lower door 3 is provided with an opening 18, adapted to be closed by a vertically-sliding valve 19, supported by a suitable frame 20. (Shown in section in Fig. 5.)

The outer side of the door 3 is formed with recesses 21, below which is a metallic strip 22, firmly secured to the car.

23 designates a chute of box form, beveled at one end 24 to fit against the trap-door frame in position to deflect the chute, as shown in Fig. 5. The chute is provided on its upper side with parallel metallic straps 25, terminating in hooks 26, which overhang the beveled end of the chute and are adapted to enter the recesses 21 in the door 3 and hook over the strip 22. The chute is thus detachably supported in position to discharge the grain into a wagon or other receptacle by gravity and without the use of a shovel, except for such grain as lies below the level of the chute. The flow of grain through the chute is regulated by a sliding cut-off valve 27, fitting suitable guides formed in the sides of the chute and having a projecting hand-grasp 28 at its upper end.

It will be apparent that the joints between the two doors, as well as between said doors and the supports on which they slide, are close tongue-and-groove joints, thus effectually preventing leakage and at the same time permitting a free sliding movement of the doors.

We claim—

1. The combination with a car, of a trackway secured to the floor thereof, a lower door provided with an opening, and mounted upon the trackway, a valve for closing the opening in the door, a standard secured adjacent the door-opening, and extending to the height of the door to form a stop therefor, a trackway extending in reverse direction to the first-named trackway, and secured to the side of the car in alinement with the upper edge of the door, an upper door mounted upon the last-mentioned trackway, and having a sliding connection, with the lower door whereby said doors are adapted to slide in opposite directions to clear the doorway, and a chute beveled at one end, and secured to the lower door in alinement with the opening therein.

2. The combination with a car, of a track-

way secured to the floor thereof, a lower door provided with an opening, and mounted upon the trackway, a valve for closing the opening in the door, a standard secured adjacent the door-opening, and extending to the height of the door to form a stop therefor, a trackway extending in reverse direction to the first-named trackway, and secured to the side of the car in alinement with the upper edge of the door, an upper door mounted upon the last-mentioned trackway, and having a sliding connection with the lower door whereby said doors are adapted to slide in opposite directions to clear the doorway, brackets for supporting, guiding, and limiting the doors in their sliding movements, and a chute beveled at one end, and secured to the lower door in alinement with the opening therein.

3. The combination with a car, of a door therefor provided with an opening, a valve for closing the opening, a chute beveled at one end, and means for securing the chute to the door in alinement with the opening.

4. The combination with a car, of a door therefor provided with an opening and recesses adjacent the opening, a valve for closing the opening, a chute beveled at one end, and hooks carried by the chute and adapted to engage the recesses to secure the chute in alinement with the opening.

5. The combination with a car, of a door therefor provided with an opening and recesses adjacent the opening, a valve for closing the opening, a metallic strip below the recesses, a chute beveled at one end, hooks projecting from the beveled end of the chute, and adapted to engage the recesses, and a cut-off valve for controlling the flow of grain through the chute.

6. The combination with a car, of a door provided with an opening, means for controlling the opening, and a chute having a beveled end whereby the chute may be secured in applied position at an angle of inclination to permit the contents of the car being discharged by gravity.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSIAH W. CHURCH.  
M. J. O'GORMAN.

Witnesses:

J. F. DANIEL,  
L. A. WOOD.