

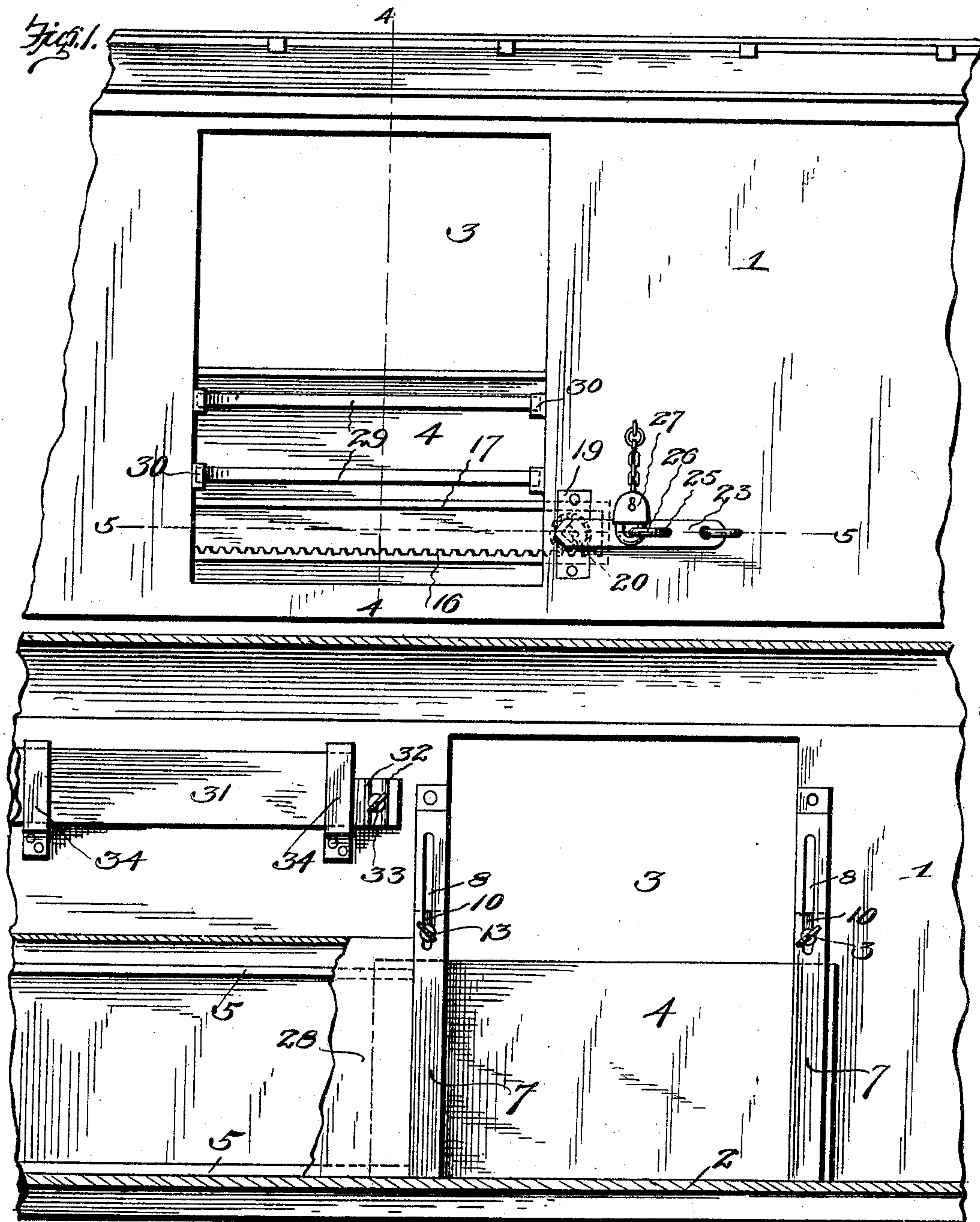
No. 804,061.

PATENTED NOV. 7, 1905.

J. SIEMSEN.
GRAIN DOOR.

APPLICATION FILED MAY 23, 1904.

2 SHEETS—SHEET 1.



J. SIEMSEN.
GRAIN DOOR.

APPLICATION FILED MAY 23, 1904.

2 SHEETS—SHEET 2.

Fig. 3.

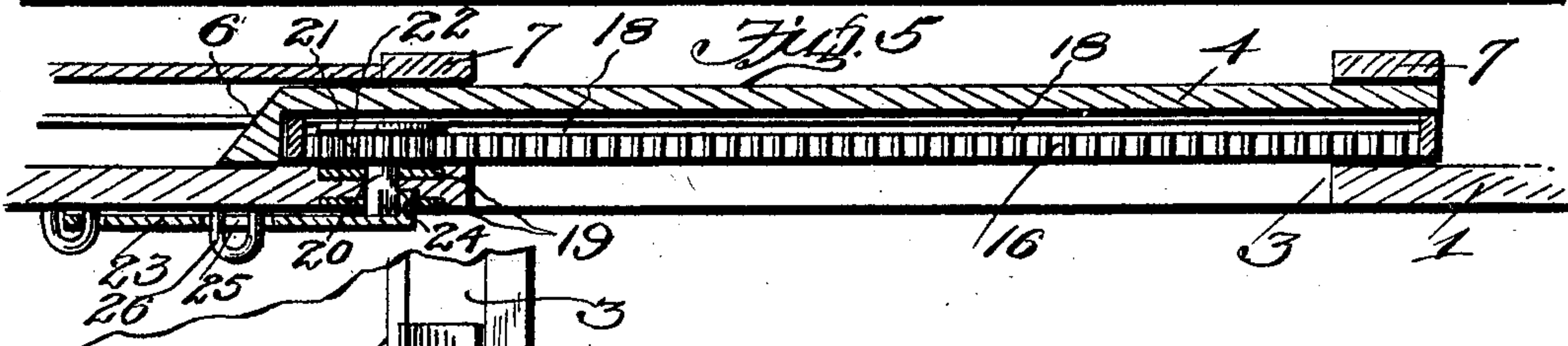
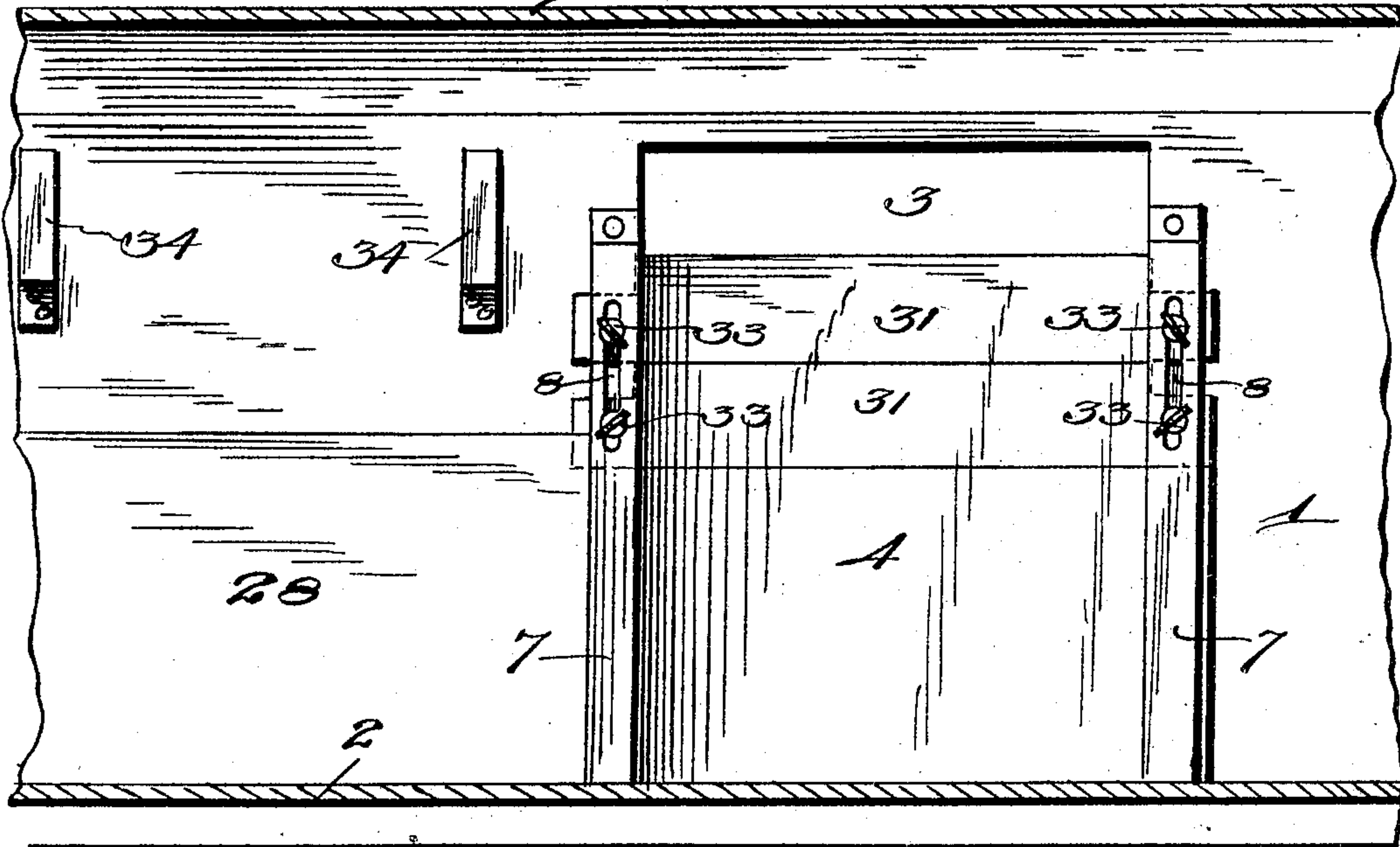


Fig. 4.

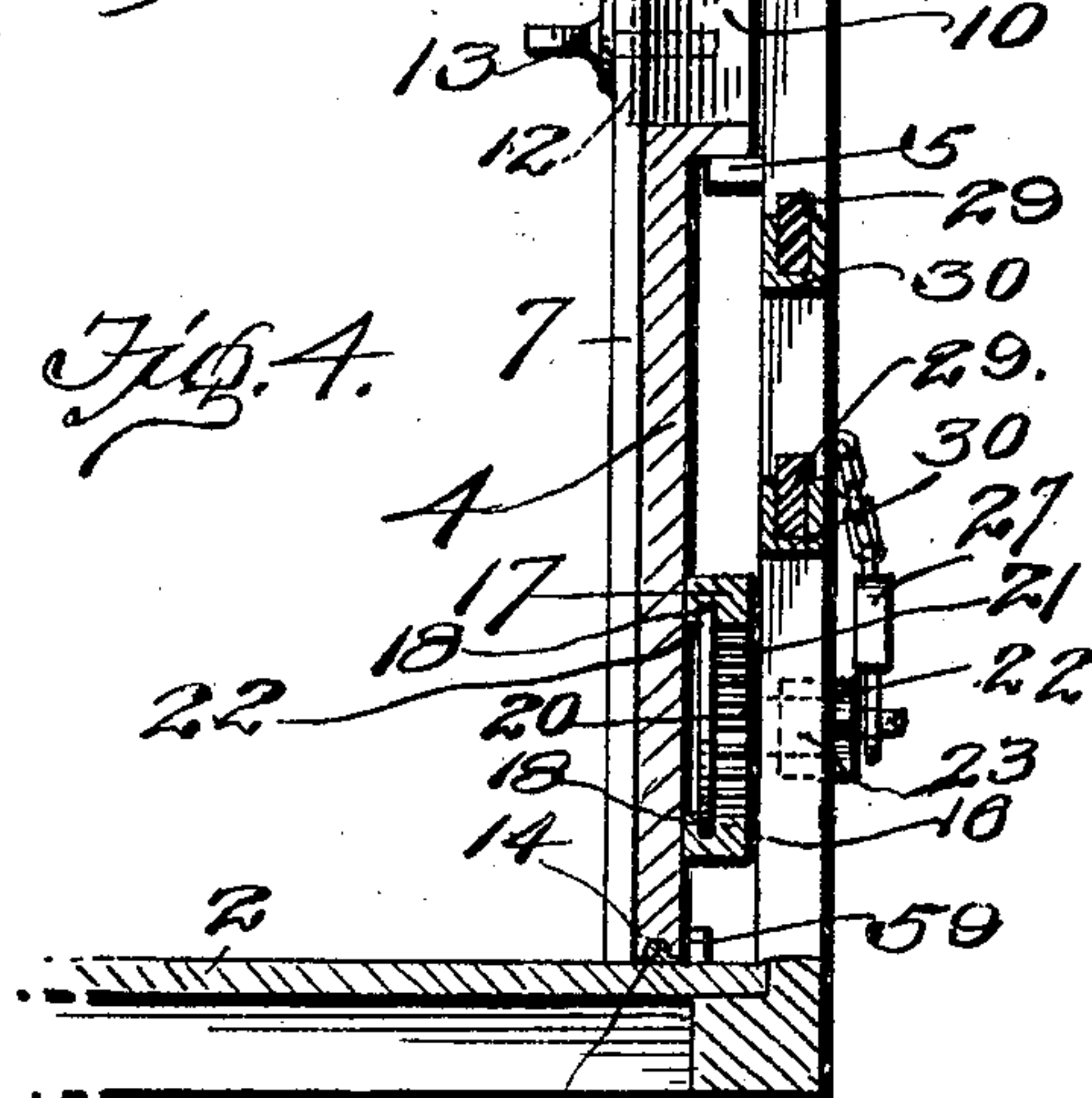


Fig. 6.

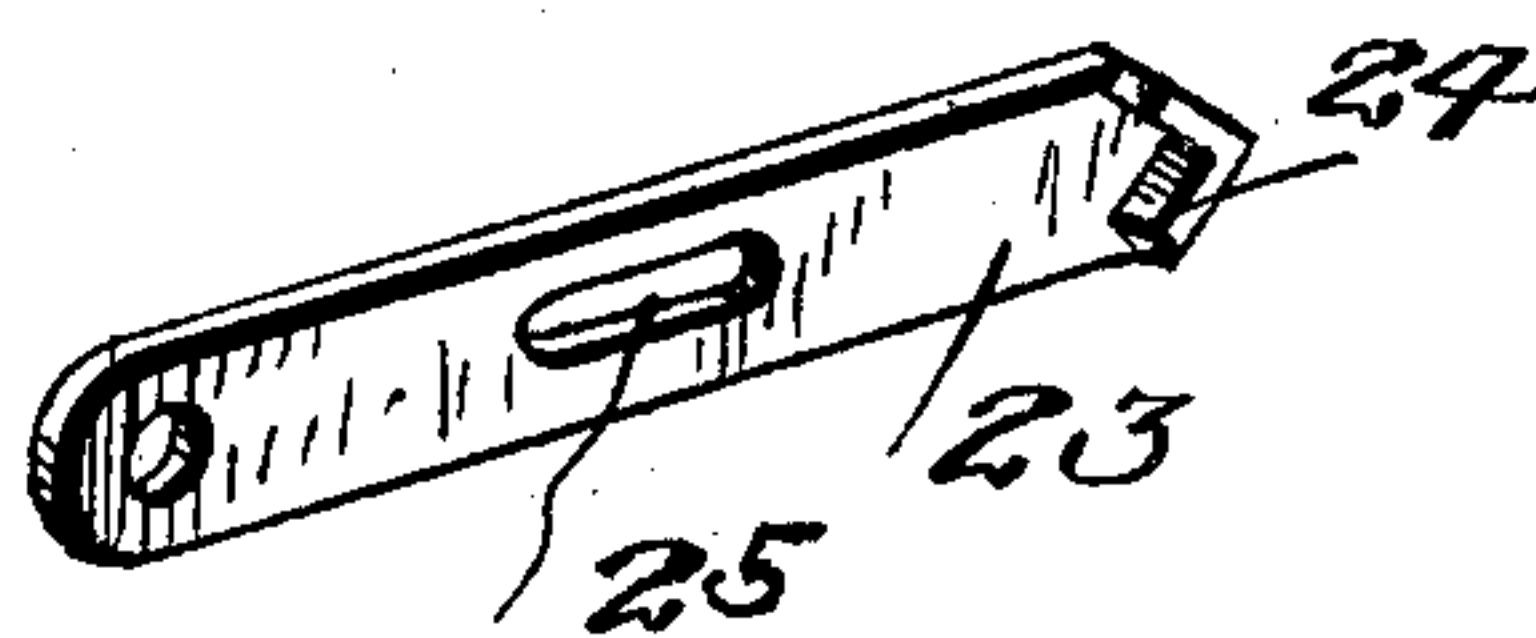


Fig. 7.



Witnesses

E. C. Hunt.
A. B. Wilson

Jurgen Siemsen
By *A. B. Wilson*
Attorney

UNITED STATES PATENT OFFICE.

JURGEN SIEMSEN, OF VALPARAISO, NEBRASKA, ASSIGNOR OF ONE-HALF
TO WILLIAM L. WORRELL, OF VALPARAISO, NEBRASKA.

GRAIN-DOOR.

No. 804,061.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed May 23, 1904. Serial No. 209,272.

To all whom it may concern:

Be it known that I, JURGEN SIEMSEN, a citizen of the United States, residing at Valparaiso, in the county of Saunders and State of Nebraska, have invented certain new and useful Improvements in Grain-Doors; and I do 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 improvements in grain-doors.

The object of the invention is to provide a grain-door for cars which may be readily opened from the outside of the car and which will be strong and durable, tight-fitting to prevent the escape of grain from the car, and well adapted to the purpose for which it is designed.

Another object is to provide means whereby the height of the door may be increased.

A further object is to provide means whereby the door may be locked against movement either in its closed or open position.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a car-body, showing the arrangement of the improved door, said door being in closed and locked position. Fig. 2 is a similar view of the inside of the car, showing the interior arrangement of the parts of the door, parts being broken away to more clearly illustrate the construction. Fig. 3 is a similar view showing the manner of increasing the height of the door. Fig. 4 is a vertical transverse sectional view through the side of the car and the car-door on the line 4 4 of Fig. 1. Fig. 5 is a horizontal sectional view on the line 5 5 of Fig. 1. Fig. 6 is a detail perspective view of the locking-hasps. Fig. 7 is a detail horizontal sectional view through one of the brace-bars and door-clamping blocks.

Referring more particularly to the drawings, 1 denotes the side of a car. 2 denotes the floor of the same. 3 denotes the doorway. 4 denotes a door which is adapted to be closed over said doorway.

The door 4 is adapted to slide on guideways

or tracks 5, secured to the inner side of the car and to the floor of the same at the upper and lower edges of the door. On the inner edge of the door is secured a beveled cleat 6, which closes the space between this end of the door and the side of the car.

On the inner side of the car adjacent to each side of the doorway are arranged two vertically-disposed brace-bars 7, which are spaced from and secured at their upper ends to the side of the car and at their lower ends are secured to the car-floor, the brace-bars serving to hold the door in place when in closed position. In the upper end of the bars 7 are formed vertically-disposed slots 8, and on the inner side of the same at each side of the slot are formed grooves 9.

Between the bars 7 and the side of the car and engaging the top of the door 4 are arranged clamping-blocks 10, on which are formed tongues 12, which are adapted to enter the grooves 9 on the inner side of the bars 7. Set-screws 13 are adapted to be passed through the slots 8 in the bars 7 and to be screwed into the blocks 10, the heads of the screws being adapted to engage outer faces of the bars 7, so that when said set-screws are screwed into the blocks the same will be clamped into engagement with the bars and will be firmly held in place and will hold the door against upward movement.

In the lower edges of the door is formed a longitudinally-disposed groove 14, which when the door is in closed position is adapted to engage and slide on a tongue or bead 15, secured to the car-floor, thereby sealing the lower edge of the door and preventing the escape of grain under the same.

In order that the door 4 may be readily opened and closed, certain mechanism for accomplishing this is provided, which will now be described.

On the outer face of the door and between the same and the side of the car is secured a horizontal longitudinally-disposed rack-bar 16, above and parallel with which is arranged a plain bar 17, the ends of which are bent down into engagement with and secured to the rack-bar 16. In the inner faces of the bars 16 and 17, adjacent the side of the door, are formed longitudinal grooves or channels 18.

In the inner and outer walls of the side of the car adjacent to one side of the doorway are secured countersunk plates 19, in which

and the side of the car is mounted a short shaft 20, and on the inner end of said shaft is fixed a cog-wheel 21, having on its inner side an annular flange 22, which is adapted to engage the grooves or channels 18 in the bars 16 and 17, thereby holding the wheel in engagement with the rack-bar 16. The outer end of the shaft 20 is squared for the reception of a wrench, (not shown,) whereby the shaft and cog-wheel 21 may be turned to cause the teeth on the same to engage rack-bar and move said door in one direction or the other.

In order to lock the door in any position, a hasp 23 is provided, said hasp being pivotally connected at one end to the side of the car. On the opposite end the hasp is provided with a laterally-projecting right-angularly shaped lug 24, which is adapted to engage the squared end of the shaft 20 when the hasp is brought into locking position, and thereby preventing the shaft from turning. Midway between its ends the hasp is provided with a slot 25, which when the hasp is in locking position is adapted to engage a staple 26 on the side of the car, and into said staple may be inserted a retaining-pin, (not shown,) or a padlock 27 may be locked into the same, which will prevent the disengagement of the right-angularly formed lug 24 from the squared end of the shaft 20, thereby locking said shaft and the door in any position desired.

The guideways or tracks 5 and the space at the side of the car which is engaged by the door when in an open position is inclosed in a casing 28, which is preferably formed of sheet metal.

In the doorway 3 are arranged two or more cross-bars 29, the ends of which are adapted to engage sockets 30 on the sides of the doorway. These bars are adapted to prevent the outward movement of the end of the door while being moved to an open or closed position. After the door has been opened or closed the bars 29 may be removed and stored in a convenient place in the car until the door is to be opened or closed again.

In order that the door 4 may be made higher, additional pieces or sections 31 are provided, which are adapted to be arranged on top of the door and between the brace-bar 7 and the side of the car. The ends of the sections 31 are provided with tongues 32, and when it is desired to place one or more of them on top of the door the clamping-blocks 10 are removed and the ends of the sections inserted behind the brace-bars 7, with the tongues 32 on the same engaging the grooves 9. Set-screws 33 are then passed through the slots

8 in the brace-bars and into the sections 31, whereby the same are securely held in place. Suitable racks 34 are provided in the car for the reception of the sections 31 when not in use.

Ordinarily when it is desired to extend the grain-doors of cars upwardly extra pieces are nailed above the same onto the jambs of the door, and when the car is emptied these extra pieces of board are broken off. By repeatedly nailing on and knocking off these extra pieces the door-jambs become injured and necessitate replacing or repairing, thereby occasioning considerable expense. By the use of additional sections, as herein described, the cars are in no way injured and the time and expense occasioned by the nailing on of the additional boards is obviated.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The herein-described grain-door for cars consisting of the sliding door 4, a beveled cleat 6, guideways or tracks on which said door is adapted to move, brace-bars 7, provided with slots 8, and grooves 9, cross-pieces 31, and binding-screws 33, adapted to hold said door in place, clamping-blocks 10 provided with tongues 12, and binding-screws 13 arranged on said brace-bars to prevent the upward movement of said door, a rack 16 secured to the outer side of said door, a shaft 20 having a squared end revolvably mounted in the side of said car, a cog-wheel 21 fixed on said shaft to engage said rack-bar to open or close said door, an annular flange on said cog-wheel for retaining said cog-wheel in engagement with said rack-bar, a hasp 23 pivotally secured to said car and having a central slot for a padlock-staple and a V-shaped lug 24 upon its outer end and under side to engage the squared outer end of said shaft to prevent the rotation of the same, and a padlock for locking said hasp in engagement with said shaft, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JURGEN SIEMSEN.

Witnesses:

W. T. CRAVEN,
C. O. LATTIN.