

No. 697,557.

Patented Apr. 15, 1902.

G. S. SMITH.
GRAIN CAR DOOR.

(Application filed Nov. 30, 1901.)

(No Model.)

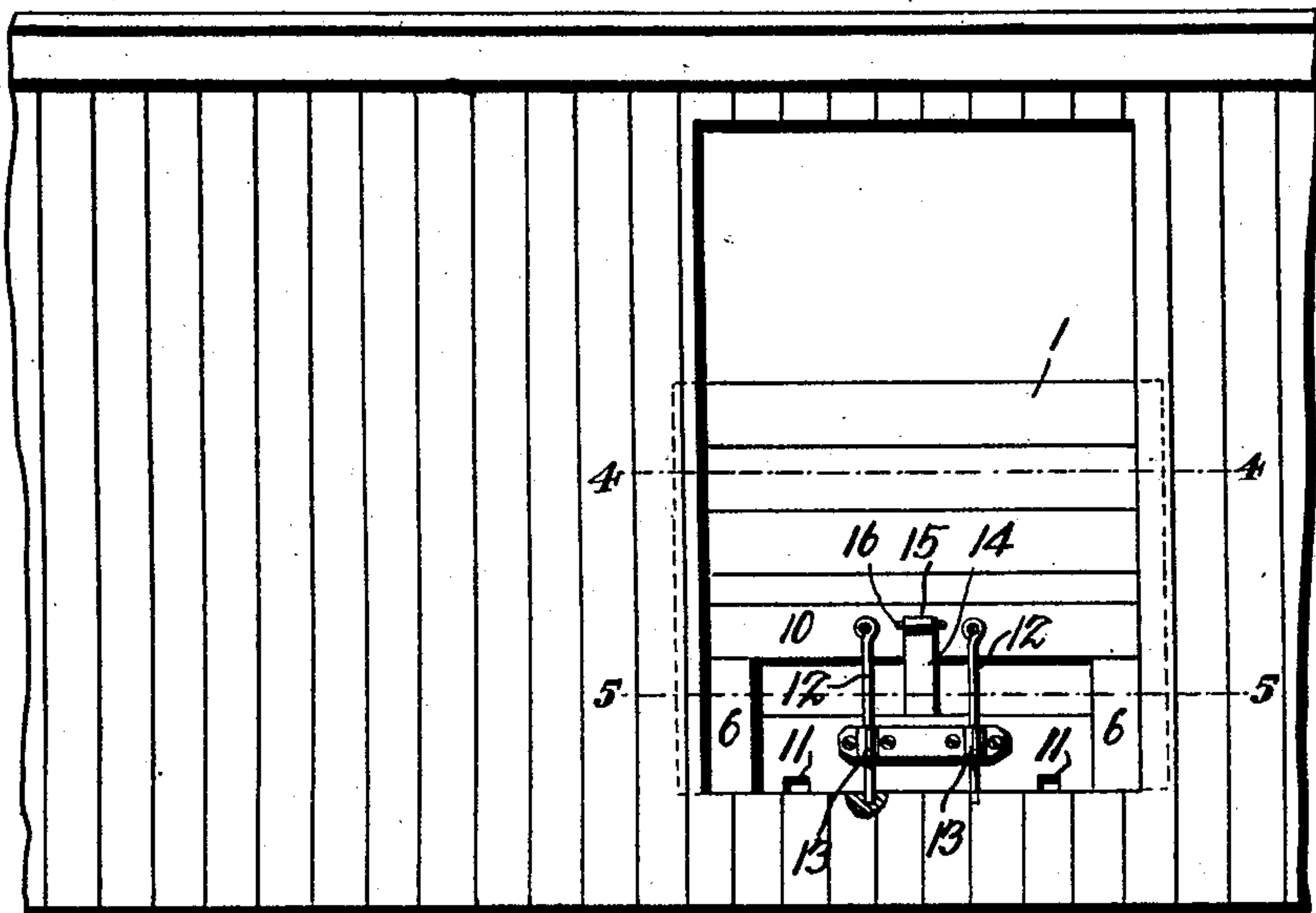


FIG. 1

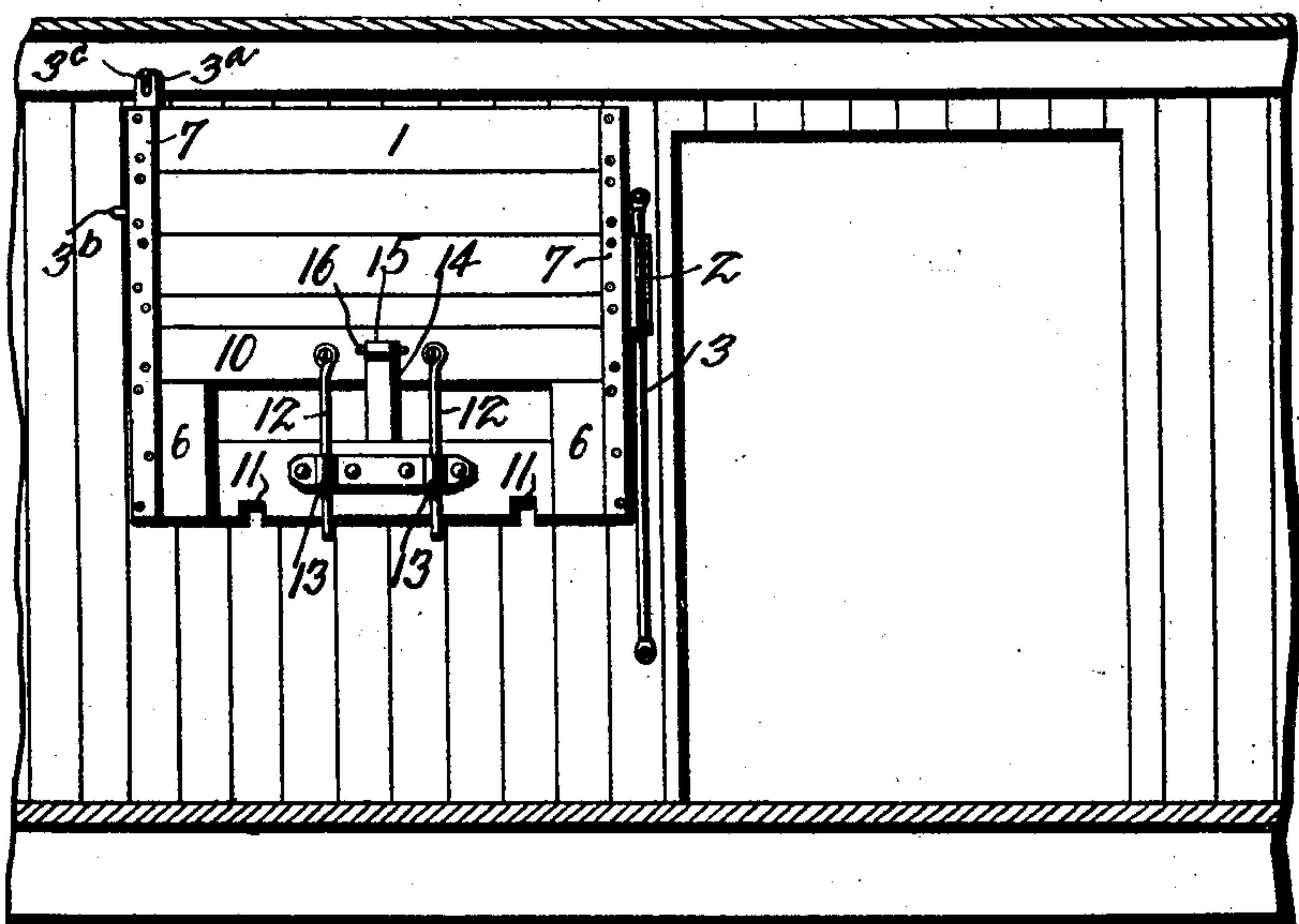


FIG. 2

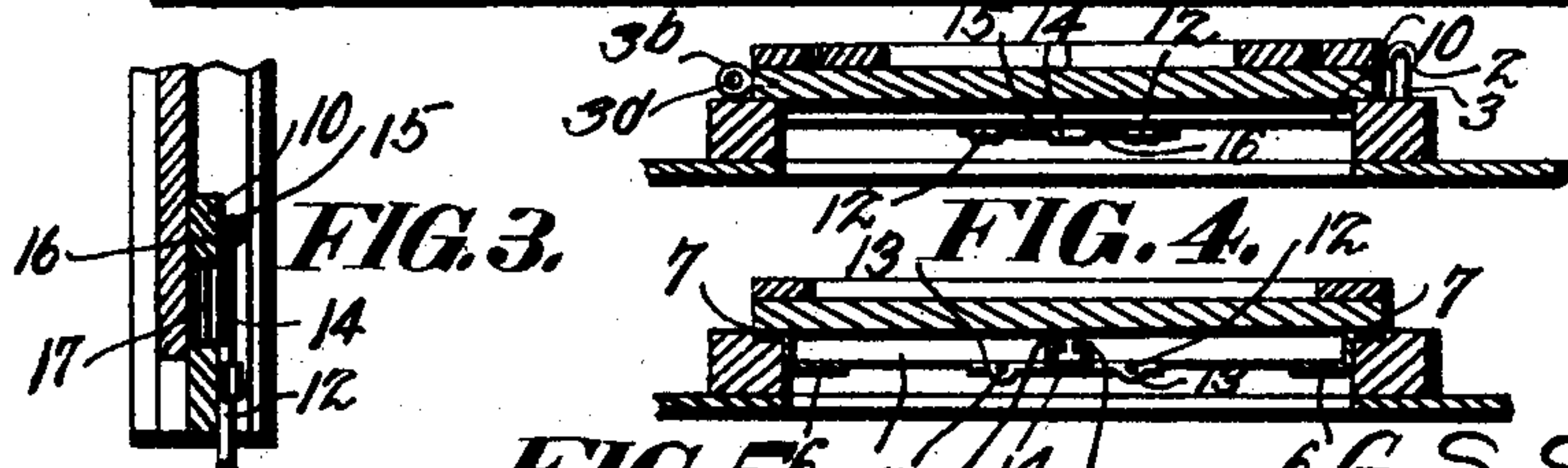


FIG. 3

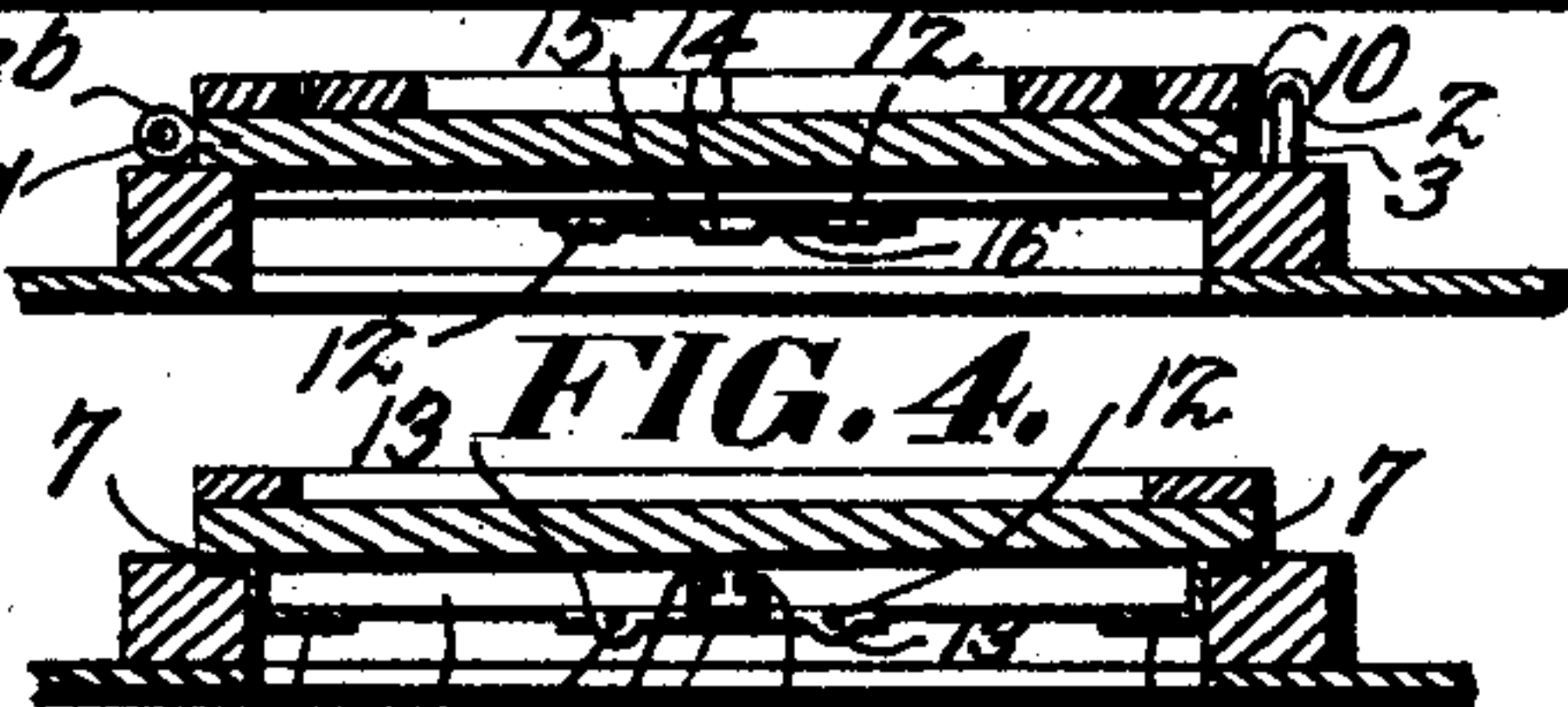


FIG. 4

FIG. 6

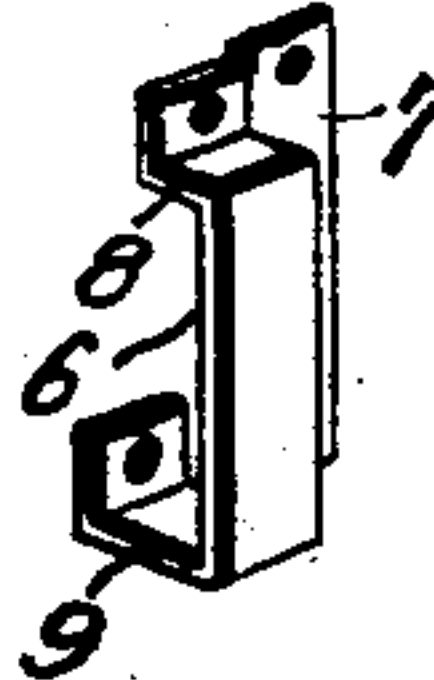


FIG. 5

Witnesses
E. J. Stewart
J. H. R. R. R.

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UNITED STATES PATENT OFFICE.

GEORGE S. SMITH, OF BURR, NEBRASKA, ASSIGNOR OF ONE-HALF TO
WILLIAM S. LOWER, OF BURR, NEBRASKA.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 697,557, dated April 15, 1902.

Application filed November 30, 1901. Serial No. 84,263. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. SMITH, a citizen of the United States, residing at Burr, in the county of Otoe and State of Nebraska, have invented a new and useful Grain-Car Door, of which the following is a specification.

The invention relates to improvements in grain-car doors.

The object of the present invention is to improve the construction of grain-car doors and to provide a simple and comparatively inexpensive one adapted to be readily applied to a car and capable of enabling the grain to be conveniently removed from around the door before the latter is opened to facilitate opening the same.

The invention consists in the construction and novel combination and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is an elevation of a portion of a grain-car provided with a door constructed in accordance with this invention and shown closed. Fig. 2 is an elevation, the door being opened and elevated. Fig. 3 is a vertical sectional view. Fig. 4 is a horizontal sectional view on the line 4 4 of Fig. 1. Fig. 5 is a similar view on the line 5 5 of Fig. 1. Fig. 6 is a detail perspective view illustrating the construction of the ways.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a grain-car door provided at one side with an eye 2, receiving a combined guide-rod and pintle 3, which is mounted on the car at one side of the door-opening and which permits the door to be swung inward horizontally and raised vertically. The grain-door is provided at its free edge with eyes or catches 3^a and 3^b, adapted, respectively, to engage hooks 3^c and 3^d, mounted on the car. The hook 3^d is mounted on the car at the side of the door-opening opposite that on which the vertical rod is placed, and it is engaged by the eye 3^b. The eye 3^b is located at the free edge of the door, and the eye 3^a is located at the top of the door and is adapted to engage the hook 3^c, which is arranged at the top of the car at a point remote from the door-

opening. The eye 3^b engages the hook 3^d when the door is closed, and the other hook 3^c is adapted to support the door in an elevated position when the latter is swung open and raised.

The grain-door is provided at its bottom with an opening 4, which is covered when the car is loaded by a sliding supplemental door or section 5, mounted in suitable ways 6 at opposite sides of the door and adapted to be raised to uncover the bottom opening 4 to permit the grain or other material to flow through the said opening and clear a space around the door to facilitate the opening of the same. The ways consist of L-shaped flanges formed integral with metal bars or strips 7, which are secured to the outer face of the door and which serve to reinforce the same. The L-shaped flanges, which are disposed vertically, are provided with upper and lower arms 8 and 9, which are L-shaped, as clearly shown in Fig. 5. The upper arm 8 is secured to the outer face of the door beneath a horizontal cleat 10, and the lower arm extends upward on the inner face of the door at opposite sides of the bottom opening. The sliding door or section 5 is provided at its bottom with suitable metal-lined recesses 11, preferably arranged at opposite sides of the center and adapted to receive a crow-bar or other suitable tool for raising the supplemental door or section 5.

The cleat 10 extends across the lower portion of the door, and it supports a pair of vertical rods 12, which pass through guides 13 of the sliding section or door 5 and engage sockets 14^a at the bottom of the car. The guides or eyes 13 are formed by a metal strap, which is secured to the outer face of the sliding door or section and which is bowed outward to receive the rods. The rods support the door and the supplemental door or section 5 and prevent the same from springing outward at the center. The rods are provided at their upper ends with eyes for the reception of fastening devices for securing them to the cleat.

The supplemental door is locked and held in its closed position by a hinged catch 14, depending from the cleat 10 and consisting of a plate provided at the top with an eye 15

to receive the pintle 16 and having inwardly-extending side flanges 17, forming upper and lower shoulders and interposed between the cleat and the upper edge of the supplemental door when the latter is closed. The pintle 16 is preferably in the form of a staple, which has its sides passed through the cleat, and the side flanges are formed integral with the plate. The catch is adapted to swing inward and outward, and it is held in its engaging position by gravity.

It will be seen that the door is exceedingly simple and inexpensive in construction, that it possesses great strength and durability, and that the sliding supplemental door or section is adapted to be readily opened to permit the material to escape and clear a space around the car-door to facilitate opening the latter. It will also be apparent that the locking-rods form guides for the sliding door or section and prevent the same and the car-door from springing outward at the center.

What I claim is—

1. The combination with a grain-car door provided at its bottom with an opening and having ways at opposite sides thereof, of a sliding supplemental door arranged in the ways and adapted to cover and uncover the opening, and the vertical rods mounted on the car-door and adapted to detachably engage the bottom of a car and preventing the said door from springing outward; substantially as described.

2. The combination of a grain-car door having an opening at its bottom and provided at opposite sides with ways, a supplemental door

mounted in the said ways and provided with central guides, and the vertical rods secured at their upper ends to the car-door and extending through the said guides and detachably engaging the bottom of the car, substantially as described.

3. The combination of a car-door having an opening at its bottom, the metal strips secured to the door and provided with L-shaped flanges forming vertical ways and having arms at their upper and lower ends, said arms being secured to the door, and a supplemental door mounted in the ways and adapted to cover and uncover the said opening, substantially as described.

4. The combination of a door having a bottom opening and provided above the same with a horizontal cleat, the metal strips secured to the car-door at opposite sides thereof and provided with vertical L-shaped flanges forming ways and having upper and lower arms, the upper arm being secured to the cleat and the lower arms being fastened to the car-door at the back thereof, the supplemental door mounted in the ways and provided with guides, and the vertical rods secured to the cleat and passing through the guides of the supplemental door, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE S. SMITH.

Witnesses:

M. W. LOWER,
M. L. SMITH.