No. 651,974. Patented June 19, 1900.

J. C., R. A. & W. J. MUNRO.

GRAIN DOOR.

(Application filed Apr. 2, 1900.)

(No Model.)

Fig. 1.

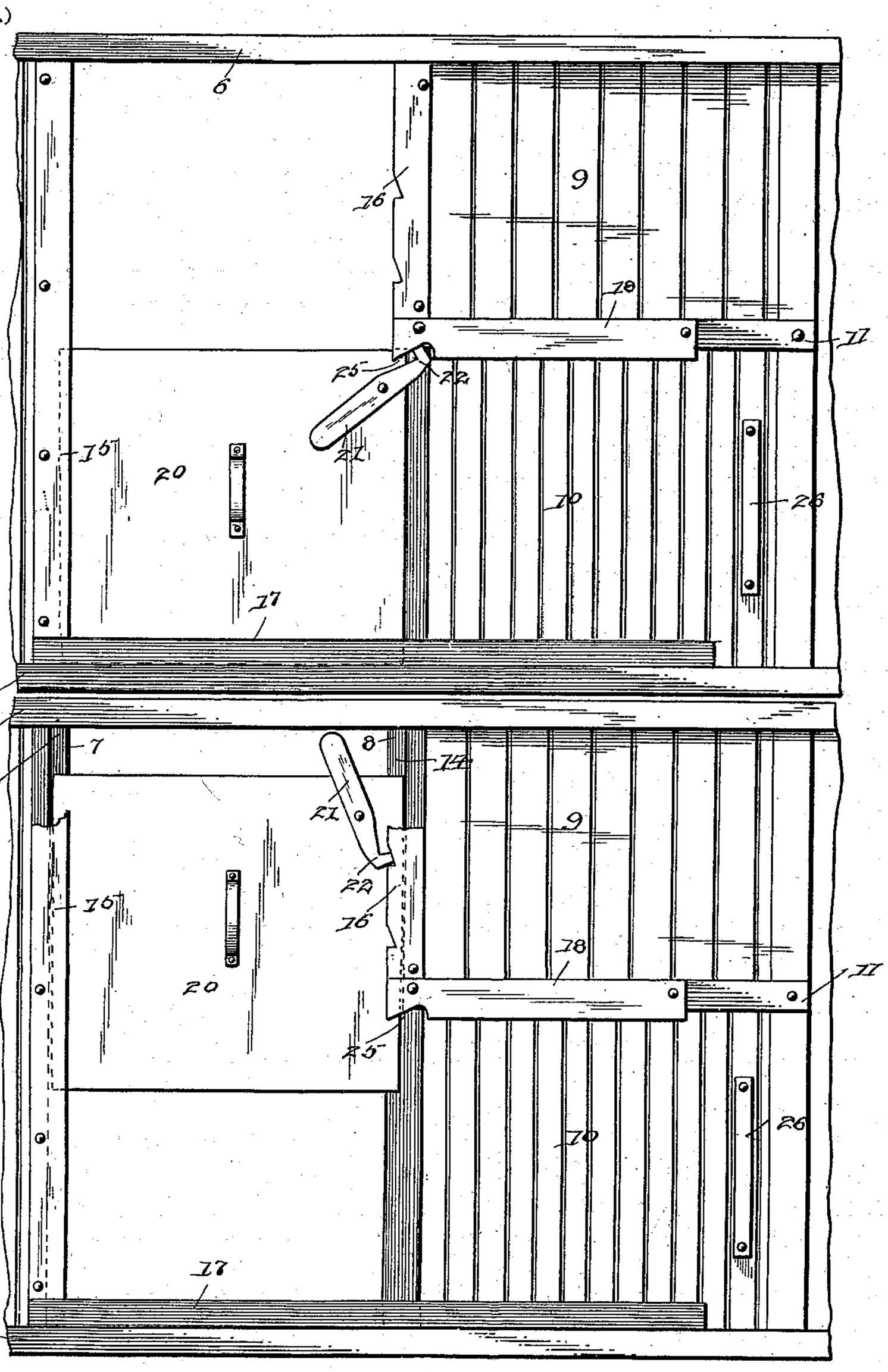

Fig. 2.

Witnesses
F. E. Alden.
Geo. H. Graves.

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By their Attorneys.
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UNITED STATES PATENT OFFICE.

JAMES CORNELIUS MUNRO, ROLAND ARMSTRONG MUNRO, AND WILLIAM JOHN MUNRO, OF SEDRO WOOLLEY, WASHINGTON.

GRAIN-DOOR.

SPECIFICATION forming part of Letters Patent No. 651,974, dated June 19, 1900.

Application filed April 2, 1900. Serial No. 11,185. (No model.)

To all whom it may concern:

Be it known that we, JAMES CORNELIUS MUNRO, ROLAND ARMSTRONG MUNRO, and WILLIAM JOHN MUNRO, citizens of the United States, residing at Sedro Woolley, in the county of Skagit and State of Washington, have invented a new and useful Grain-Door, of which the following is a specification.

This invention relates to car-doors in general, and more particularly to the class of grain-doors for freight-cars, wherein there is provided a door which is low and may be moved into and out of operative position to open or close a portion of the doorway or to open the entire doorway, as may be desired.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in both views, Figure 1 is an elevation of the interior of a car and showing the doorway at one side thereof, the door being in its closed position. Fig. 2 is a view similar to Fig. 1 and showing the door partly raised for the discharge of the grain.

Referring now to the drawings, there is shown a side wall of a freight-car for hauling grain in bulk, and this car comprises a lower sill 5 and an upper sill 6, connected by the usual studs, including the door-studs 7 and 8, which form the sides of the door-frame. To the sills 5 and 6 are also secured the planking 9 of the sides of the car, while a wainscoting 10 is provided for the lower portion of the interior of the car, this wainscoting being secured at its upper edge to a stringer 11, as shown.

The inner faces of the studs 7 and 8 are grooved at their mutually-adjacent edges, as shown at 13 and 14, and over the groove 13 is secured a plate 15, which extends throughout the height of the stud. A second plate 16 is secured over the groove 14 and extends from the upper end of the stud 8 to the line of the upper edge of the stringer 11. These plates, in connection with their respective studs, form guideways, as will be readily understood.

Upon the lower sill 5 is secured a grooved rail 17, which extends from the stud 7 to a point beyond the stud 8, and coöperating with the last-named portion is a guideway formed by a plate 18, which is secured to the outer face of the stringer 11 and depending therefrom, it being understood that said stringer projects horizontally beyond the wainscoting. One end of the plate 18 lies flush with the inner edge of plate 16, and the coöoperating guideways thus formed are so positioned as to slidably receive a rectangular door 20 when moved from one to the other of the pairs of guideways. This door is introduced to lie behind plate 18 and in the groove of the rail 17, after which it may be slid laterally until it engages behind plate 15, after which it may be raised. In order to hold it in this raised position, the plate 16 is notched, as shown, the lower walls of the notches being horizontal, while the upper notches are slanted, and these notches are positioned for successive engagement by a pivoted latch-lever 21, mounted upon the door 20 and in coöperative relation to the notches. The pivot of the latch-lever is so positioned with respect to the lever that the laterally-turned engaging end 22 thereof will lie against the plate 16, which is in effect a latch-plate and will successively drop into the notches as the door is raised and will engage the lower wall of a notch when the door is lowered, and thus support the door in a raised position. By forming a number of these latch-notches provision is made for holding the door at various heights.

When the door is in its lowered position, to prevent sliding to uncover the doorway a latch-notch 25 is formed in plate 18 and in such position that the latch-lever will engage it when swung into operative position by gravity. A stop 26 prevents lateral displacement of the door from the rail 17 and the guideway thereabove. With this construction it will be seen that when loading grain the door may be moved and held in the position shown in Fig. 1 of the drawings, and when it is desired to unload the car the door may be raised to the proper extent to permit shoveling of the grain; also, when it is desired not to use the door it may be slid laterally along the grooved rail and away from the doorway.

It will of course be understood that in practice various modifications of structure, pro-

portions, and materials may be made without departing from the spirit of the invention.

What is claimed is—

1. In a car, the combination with guideways disposed at an angle to each other, of a door disposed for slidable movement in the guideways successively, and a single latch for holding the door from movement in either guideway.

2. In a car, the combination with guideways disposed at an angle to each other and each comprising a notched plate, of a latch-lever pivoted upon the door and adapted for engagement with the notches of both plates, interchangeably.

3. In a car, the combination with guideways disposed at an angle to each other, of a door slidably disposed for movement through both guideways, each of said guideways comprising a notched plate, and a gravity-operated lever pivoted to the door for engagement with the notches of each plate, alternately.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JAMES CORNELIUS MUNRO.
ROLAND ARMSTRONG MUNRO.
WILLIAM JOHN MUNRO.

Witnesses:
J. HENRY SMITH,
F. A. DOUGLASS.