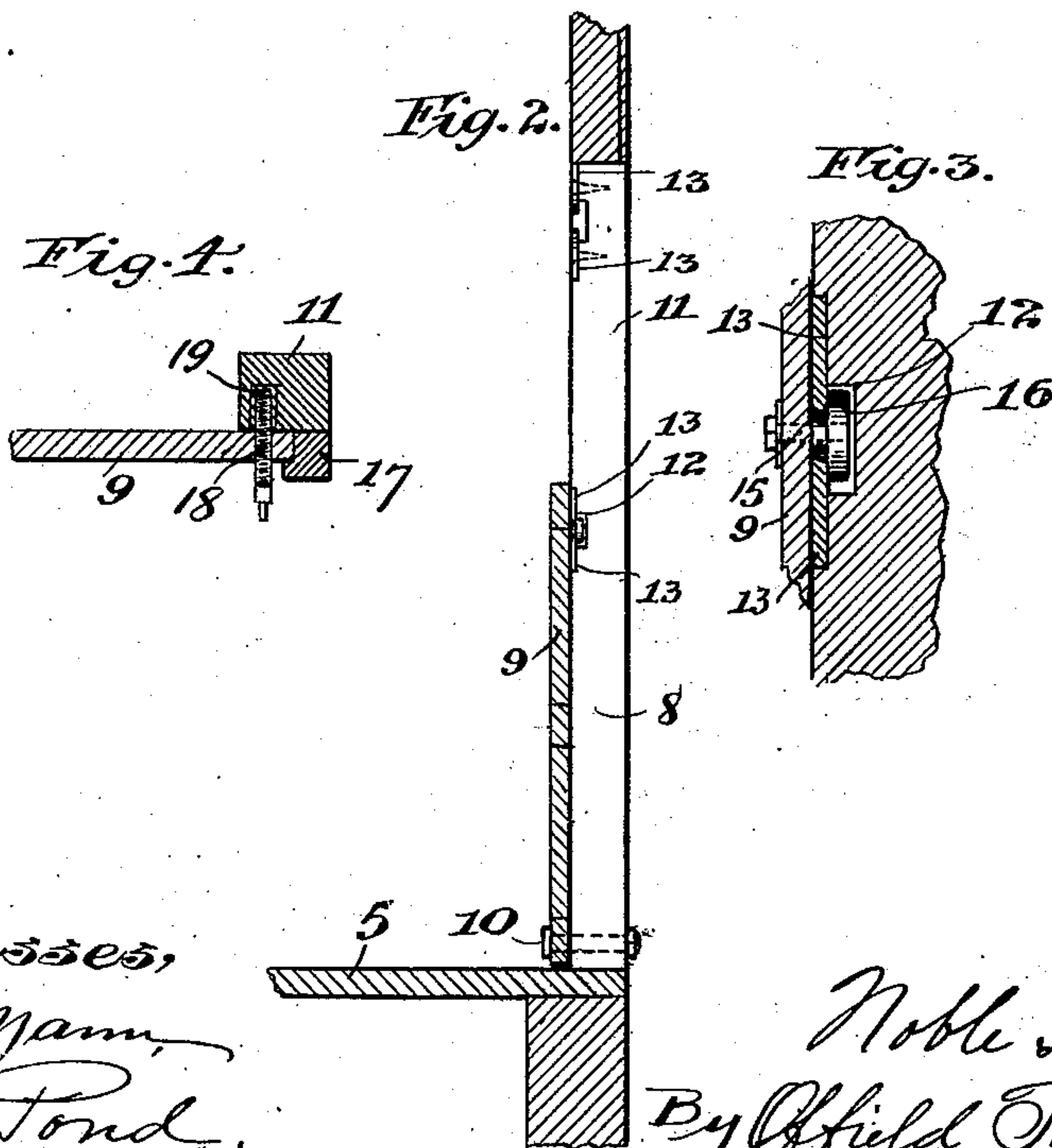
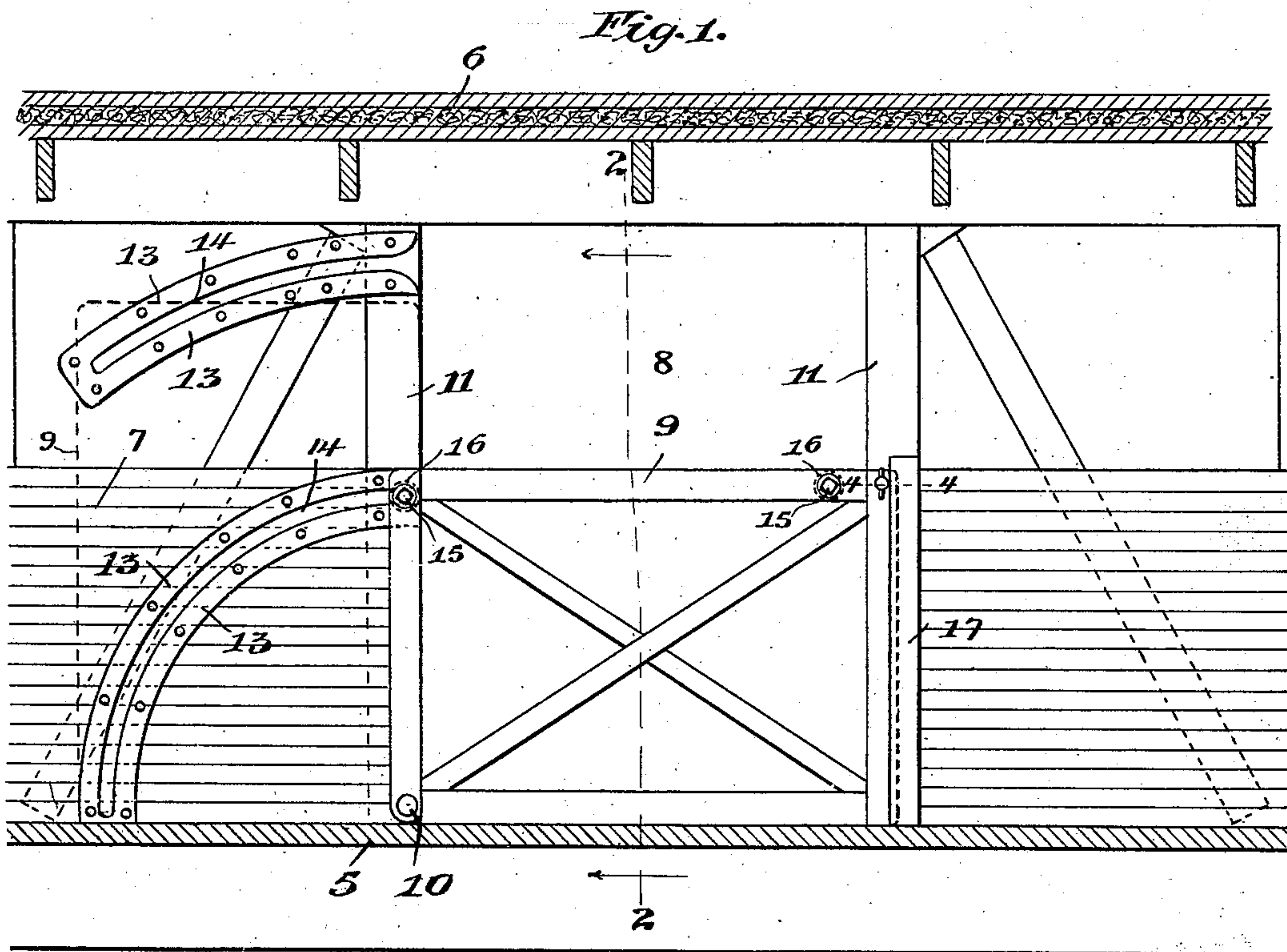


No. 843,074.

PATENTED FEB. 5, 1907.

N. H. CONGER.
GRAIN DOOR FOR RAILWAY CARS.

APPLICATION FILED MAY 15, 1906.



Witnesses,
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UNITED STATES PATENT OFFICE.

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GRAIN-DOOR FOR RAILWAY-CARS.

No. 843,074.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed May 15, 1905. Serial No. 260,560.

To all whom it may concern:

Be it known that I, NOBLE H. CONGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Grain-Doors for Railway-Cars, of which the following is a specification.

My invention relates to grain-doors for railway-cars. Doors of this character are usually located on the inner wall of the side of the car opposite the main door-opening and are designed for use when the car is employed in the transportation of grain, being swung out of the way or removed entirely when the car is used for the transportation of other merchandise.

The object of my invention is to provide a simplified and improved door of this character which may be easily moved into and out of operative position and which when not in use shall occupy a minimum of space and present practically no obstruction to the contents of the car; and to this end my invention consists, essentially, of a door pivoted or hinged at one corner and adapted to be swung edgewise in its own vertical plane to a position at one side of the opening, the wall of the car adjacent to the opening being provided with suitable quadrant-guides adapted to engage projections on the door to hold the latter snugly against the side wall of the car when in idle position.

My invention in an approved mechanical form is illustrated in the accompanying drawings, wherein—

Figure 1 represents a longitudinal section through a portion of the car-body, showing the usual side opening and my improved grain-door and its guides applied thereto. Fig. 2 is a cross-sectional view on the line 2 2 of Fig. 1. Fig. 3 is a detail cross-sectional view, enlarged, illustrating means for guiding and holding the door when open against the side wall of the car; and Fig. 4 is an enlarged cross-sectional detail on the line 4 4 of Fig. 1.

Referring to the drawings, 5 may designate the floor, 6 the roof, and 7 the side wall of an ordinary freight-car, in which side wall is formed the usual opening 8, controlled on the outside by any of the usual forms of outer doors. (Not shown.)

9 designates my improved grain-door, which may be of a height suitable to the

grain-line of any particular grain desired to be carried by the car or of a height equaling the maximum grain-line, where the car is used for the transportation of various grains. This door is hinged by a pivot-bolt 10 at one of its lower corners to one of the side frame members 11 of the door-casing, whereby the door can be swung edgewise in its own plane to a position at one side of the door-opening, as shown by dotted lines. To secure the door snugly against the side wall when out of use, I provide in the latter one or more arc-shaped guides engaging cooperating guides on the outer side of the door in such a manner as to prevent transverse separation of said parts when engaged. A simple form of such guides as herein shown may consist of grooves 12, Fig. 3, formed in the side wall of the car and overlaid by curved metal strips 13, so disposed as to provide a narrow entrance or slot 14, leading into the grooves. On the outer side of the door are secured, as by means of threaded bolts 15, buttons 16, the stems of which play in the slots 14 and the enlarged heads of which play in the grooves 12 behind the overlapping guide-strips 14. This construction permits the door to swing freely longitudinally of the guides, but holds the door securely against transverse separation therefrom. Of course one or more of these guides may be employed, or they may be omitted altogether and the door when open be secured to the wall of the car by other suitable means; but when employing the means herein shown I prefer to use at least a pair of such guides, one engaging one of the upper corners of the door and the other engaging the door at or near the opposite upper corner, such construction insuring the door against a tendency to swing inwardly of the car, and thus relieving strains on the hinge-bolt 10.

To hold the free vertical margin of the door when the latter is in its operative position, any suitable means may be employed, that herein shown comprising a rabbeted strip 17, Fig. 4, secured to one of the uprights 11 and engaging the free margin of the door when the latter is closed. To secure the door against possible upward swinging and partial opening, due to crowding of the grain beneath the same, a simple threaded locking-bolt 18 passed through the door and entering

a hole or socket 19 in the frame member 11 will suffice.

From the foregoing it will be seen that the principle of my invention resides in a grain-
5 door hinged at one corner and swinging open and closed edgewise in its own vertical plane. In its more complete form my invention also comprehends the provision of means for se-
10 curing the door snugly against the side wall at one side of the opening when not in use, such means preferably consisting of inter-fitting coöperating guides on the door and side wall, respectively, which permits a free-
15 swinging movement of the door, but prevent its inward displacement from the wall of the car. It is evident that other and mechanically equivalent means for guiding the door in its opening and closing movements, as
20 well as securing it in its open and closed positions, might be employed without affecting the substance of the invention, and hence I do not limit the latter to the particular form and construction illustrated, except to the extent indicated in specific claims.

25 I claim—

1. The combination with the side wall of a railway-car having a doorway, of a grain-
30 door pivotally mounted at one of its lower corners opposite the doorway and adapted to be swung edgewise in its vertical plane to a

position at one side of said doorway, an undercut quadrant guide and an undercut curved guide on said side wall adjacent to the doorway, and a pair of headed projec-
35 tions on the door adjacent to its upper corners slidably engaging said undercut guides during the opening and closing movements of the door, substantially as described.

2. The combination with the side wall of a railway-car having a doorway, of a grain-
40 door pivotally mounted at one of its lower corners opposite the doorway and adapted to be swung edgewise in its vertical plane to a position at one side of said doorway, an undercut quadrant guide and an undercut
45 curved guide on said side wall adjacent to the doorway, a pair of headed projections on the door adjacent to its upper corners slidably engaging said undercut guides during the opening and closing movements of the
50 door, and means on the opposite side of the doorway engaging the free vertical edge of the door when the latter is closed to prevent lateral displacement thereof, substantially as described.

NOBLE H. CONGER.

Witnesses.

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