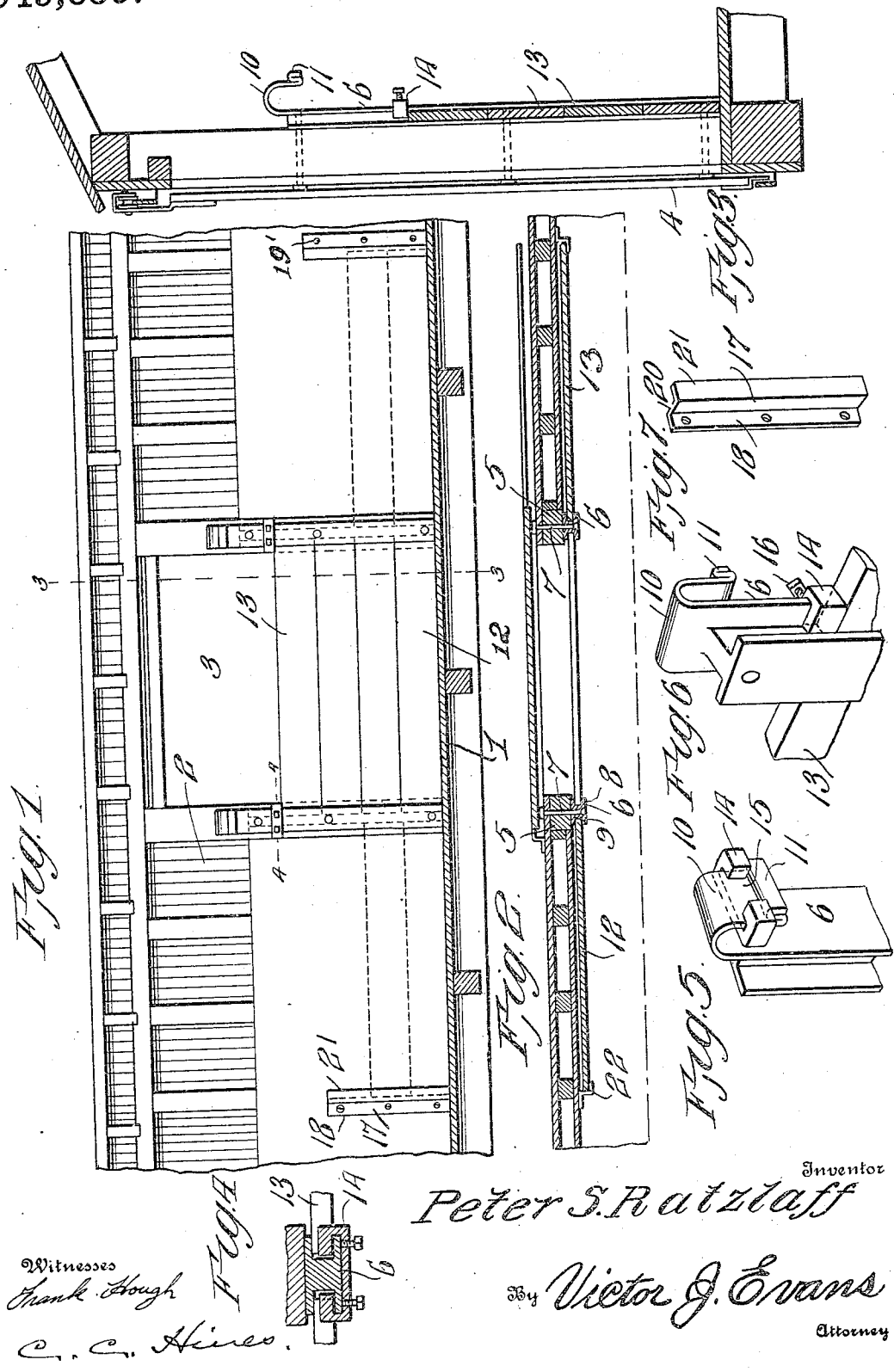


P. S. RATZLAFF.
GRAIN DOOR FOR FREIGHT CARS.
APPLICATION FILED MAY 4, 1909.

Patented Feb. 15, 1910.

949,659.



Witnesses
Frank Hough
C. C. Hines.

Inventor
Peter S. Ratzlaff
By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

PETER S. RATZLAFF, OF BUHLER, KANSAS.

GRAIN-DOOR FOR FREIGHT-CARS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PETER S. RATZLAFF, a citizen of the United States, residing at Buhler, in the county of Reno and State of Kansas, have invented new and useful Improvements in Grain-Doors for Freight-Cars, of which the following is a specification.

This invention relates to grain doors for freight cars, one object of the invention being to provide a simple and effective means for holding one or more doors in applied position to close the doorway against the escape of the grain, and another object being to provide means for retaining the doors, when not in use, in a position where they will be out of the way and not interfere with the storage of goods in the car.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a vertical longitudinal section of a freight car embodying my invention, showing the doors applied for use. Fig. 2 is a horizontal longitudinal section through the side of the car, showing the doors removed from the doorway and stored within their holders. Fig. 3 is a vertical transverse section on line 3—3 of Fig. 1. Fig. 4 is a detail horizontal transverse section on line 4—4 of Fig. 1. Fig. 5 is a front perspective view of the upper end of one of the guide rails. Fig. 6 is a rear perspective view of the same, showing also the upper edge of the door. Fig. 7 is a perspective view of one of the retaining rails.

Referring to the drawing, 1 designates the bottom and 2 one of the side walls of a freight car, which side wall is provided with a doorway 3 adapted to be closed in the usual manner by an outer sliding door 4.

As is well known, in the shipping of grain in a car it is desirable to provide an inner door or other means for closing the whole or a portion of the doorway 3 to prevent the grain from banking against the door 4, and also to retain the grain and prevent its escape through the doorway when the door 4 is opened. Various types of grain doors for its purpose have been provided, but as a general rule they are complicated in construction and are so mounted as to interfere with the storage of goods within the car

when they are out of use and the car is employed for transporting other merchandise.

The object of my invention is to provide a construction which avoids these objections, and in carrying the invention into practice I secure to the side rails of jambs 5 of the doorway a pair of guide rails 6 and 7, extending a suitable distance upwardly from the bottom 1 of the car and fastened in any suitable manner upon the inner faces of the jambs, as by bolts 7. Each of these rails 6 is provided in its inner edge with a longitudinal guide groove 8 and in its outer edge with a similar guide groove 9. The inner web of each rail thus formed is extended at the outer end of the rail and turned down in the form of a stop hook 10 bent at its lower free end to provide a transverse stop shoulder or supporting member 11.

Two grain doors proper, designated at 12 and 13, are shown in the present instance, each being of a proper length to extend between the rails 6 and fit at their edges within the grooves 8, and of any desired height, so that by the use of two or more door sections the doorway 3 may be closed to the desired height or extent without the use of a door or doors too cumbersome to be conveniently handled. As shown, the lower door 12 fits within the guide rails and rests at its lower edge upon the floor 1, while the upper door 13 fits within the grooves 8 and rests at its lower edge upon the upper edge of the door 12, both door sections being thereby arranged and held to close a desired portion of the doorway 3 upward from the floor line to prevent the escape of grain and the banking of the same against the door 4, it being understood, of course, that these door sections 12 and 13 are inserted downwardly into the upper ends of the grooves 8 and withdrawn through a reverse movement. While two or more door sections are preferably employed, a single door of the desired type may in practice be used.

In order to hold the door or door sections within the grooves 8 against upward movement, clamping devices 14 are provided and slidably mounted upon the respective rails. Each of these devices is in the form of an oblong ring or link having at one side a slot 15 to clear and accommodate the body portion of the rail between the grooves in the sliding movements of the clamp. The clamp may be said to consist of a bar hav-

ing right angular hook ends to slidably engage the grooves and the hooked end 10 of the rail. When the doors are not in use, the clamps are slid upwardly and outwardly upon the hooks 10 of the rails and are supported in position by the stops 11, whereby they are held from displacement. When the doors are inserted within the grooves 8 for use, the clamps are adjusted to bear against the upper edge of the door or upper door section, and are fastened in position by set screws 16 carried thereby, thus holding the door or doors against any possibility of upward displacement.

15 A door constructed as above described may be readily and conveniently handled, applied for use and removed after use without great physical labor.

Secured to the side of the car in parallel relation to and beyond the respective rails 6 are retaining rails 17, which are identical in construction, each being preferably formed of sheet metal and of substantially Z-shape. The outwardly extending flange 18 of each retaining rail is perforated for the passage of fastenings to secure it to the side of the car, while the intermediate portion 20 of said rail extends inwardly and its opposite flange 21 projects reversely to the flange 18 and parallel with the side of the car to provide grooved guideways 22 for the outer edges of the door sections 12 and 13. The retaining rails are arranged with respect to the rails 6 the same distance apart as the rails 6 are to each other, so that the door sections 12 and 13 when removed from the grooves 8 may be respectively engaged with the outer grooves 9 of the main rails and the coacting retaining rails, as shown in dotted lines in Fig. 1 and in full lines in Fig. 2, to support said door sections against the side of the car on opposite sides of the doorway, where they will be out of the way and will not interfere with the free storage of materials or freight within the car.

From the foregoing description, the construction, mode of use and advantages of my invention will be readily understood without a further extended description, and it

will be seen that it provides a grain door 50 which is simple of construction, may be easily and conveniently handled, and which when not in use may be stored so that the car may be used for the transportation of other materials than grain without interfering with the full loading of the car.

The rails 6 may be spaced a greater distance apart and secured to the side wall of the car instead of to the jambs for the use of wider door sections when required.

Having thus described the invention what is claimed as new is:—

1. A freight car provided with a doorway, grooved guide rails at opposite sides of the doorway, said rails arranged vertically and having downturned hook shaped upper ends provided with terminal shoulders, doors to slidably engage the rails, and clamps having hook shaped ends to engage the rails and their hook shaped portions and adapted when disposed upon the latter to rest upon said terminal shoulders.

2. A freight car provided with a doorway, grooved guide rails at opposite sides of the doorway having downturned upper ends provided with stops, a door adapted to slidably engage the grooved guide rails, and clamps mounted on the guide rails and provided with clamping screws, said clamps adapted to be disposed upon said downturned portions and supported when not in use by the stops thereof.

3. A door provided with a doorway, vertical guide rails at opposite sides of the doorway having T-shaped portions, a door adapted to slidably engage the inner sides of the rails, and sliding clamps having hooked ends engaging said guide rails to clamp the door in position, said clamps being provided with means for securing them to the rails.

In testimony whereof I affix my signature in presence of two witnesses.

PETER S. RATZLAFF.

Witnesses:

LAWRENCE H. TAYLOR,
FRANZ THUMANN.