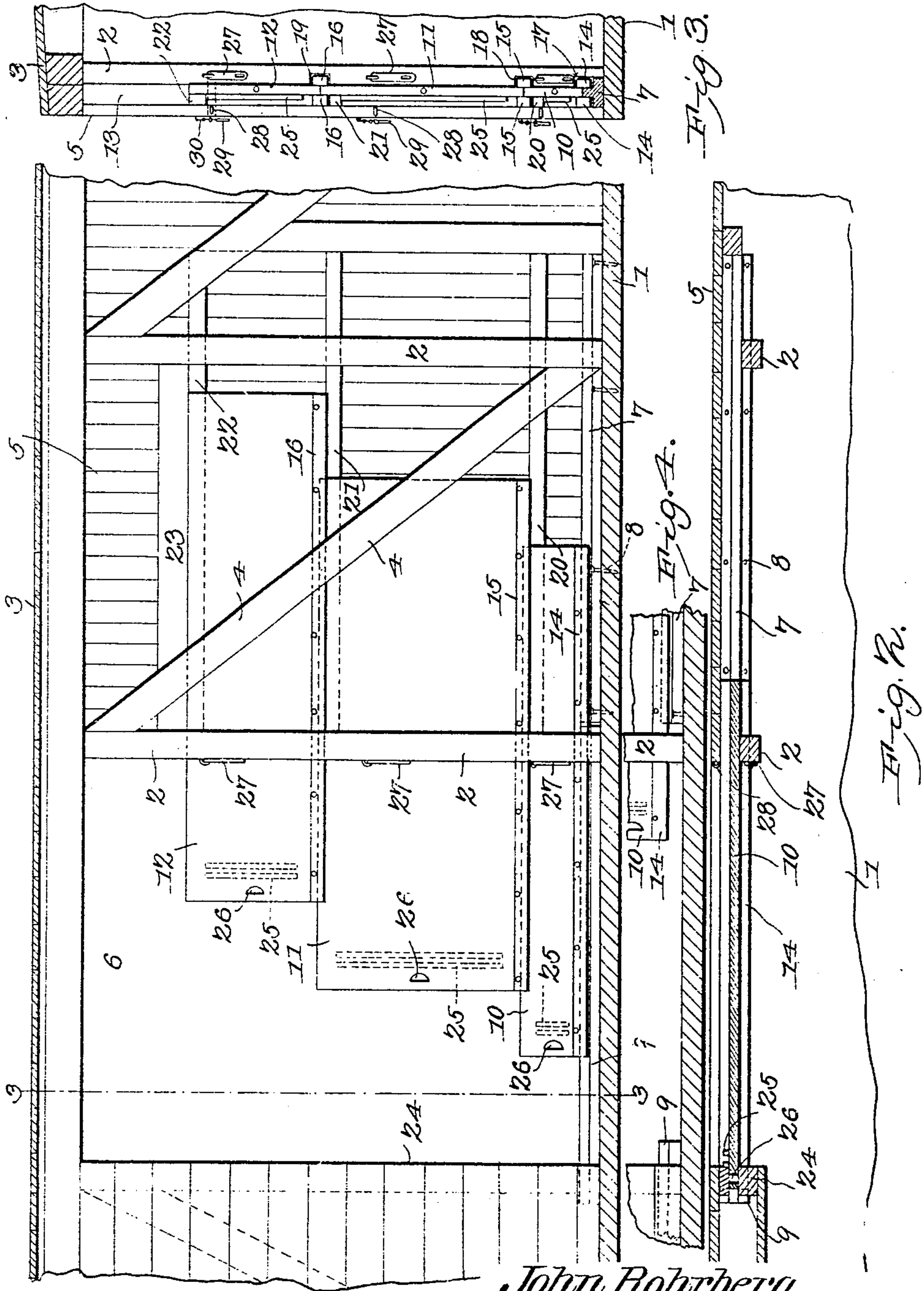


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PATENTED JUNE 5, 1906.

J. ROHRBERG.
GRAIN DOOR FOR FREIGHT CARS.

APPLICATION FILED JULY 6, 1905.



Witnesses
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Fig. 1.

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UNITED STATES PATENT OFFICE.

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GRAIN-DOOR FOR FREIGHT-CARS.

No. 822,477.

Specification of Letters Patent.

Patented June 5, 1906.

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To all whom it may concern:

Be it known that I, JOHN ROHRBERG, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented a new and useful Grain-Door for Freight-Cars, of which the following is a specification.

This invention relates to grain-doors for freight-cars, and has for its object to provide a novel construction and mounting of such devices to enable the convenient opening and closing thereof and to insure a grain-tight closing of the doorway.

Another object of the invention is to provide for the mounting of the grain-door without material alteration of the frame of the car and without in any manner interfering with the mounting operation of the usually slidable exterior door.

It is also proposed to have the door constructed in sections capable of being individually opened and closed, so as to gradually open the doorway from the top downwardly to give access to the upper surface of the grain contained within the car.

A still further object of the invention is to have the doorway entirely unobstructed across the floor of the car when the door is open, so as to permit of the convenient shoveling of the grain through the doorway.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a longitudinal fragmentary sectional view of a freight-car body having the grain-door of the present invention mounted thereon and partially open. Fig. 2 is a horizontal longitudinal sectional view thereof. Fig. 3 is a cross-sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail view similar to Fig. 1, showing the grain-door entirely open and the door-supporting track pushed to one side of the doorway, so as to avoid obstructing the floor of the car between the door-posts.

Like characters of reference designate cor-

responding parts in each and every figure of the drawings.

To illustrate the application and operation of the present invention, there has been shown in the accompanying drawings a portion of a freight-car, including the floor or bottom 1, joists 2, rising therefrom, a roof or top 3, supported upon the joists, inclined braces 4, extending between the joists, and sidings 5, in which is a doorway 6. These parts are common and well known and may be varied considerably in form without affecting the present invention.

In carrying out the present invention a track is laid upon the floor of the car and consists of a substantially T-shaped fixed section 7, lying at one side of the doorway and secured to the floor by means of suitable fastenings 8, the bottoms of the adjacent joists being notched or cut away to accommodate this track-section. In addition to the fixed track-section 7 there is an endwise-shiftable track-section 9, extending across the doorway and working in corresponding notches or openings in the bases of the joists 2, which constitute the door-posts or opposite sides of the doorway. When the door is closed, the track-section 9 extends across the doorway and abuts the fixed track-section 7; but when the door is open the track-section 9 is slid in an endwise direction away from the fixed track-section 7 and into a guideway at the opposite side of the doorway, so as to lie at the opposite side of the doorway, as indicated in Fig. 4, whereby the floor of the car between the door-posts is entirely unobstructed to enable the convenient shoveling of the grain within the car.

As best indicated in Figs. 2 and 3 of the drawings, it will be noted that the joists 2 are spaced from the siding 5, so as to accommodate the slidable door-sections 10, 11, and 12 between the joists and the siding, there being a filler bar or block 13, filling the space between each joist 2 and the siding 5 above the top of the door. The lower door-section 10 is provided throughout its lower edge with a groove or guideway, preferably formed by longitudinal strips or cleats 14, secured to opposite sides of the door-section and projected below the latter, so as to embrace the upstanding portion of the inverted substantially T-shaped track, thereby to enable the endwise sliding of the door-section upon the

track. The next adjacent upper door-section 11 slides upon the top edge of the lowermost door-section 10 and is provided with longitudinal strips or cleats 15 to embrace the upper edge of the lowermost door-section as a track and form a lap-joint between the adjacent door-sections. The uppermost door-section is likewise provided with cleats or strips 16 to slidably embrace the upper edge of the middle door-section and form a lap-joint between adjacent door-sections, whereby the upper door-sections are supported by the lowermost section, thereby to maintain tight joints between the door-sections and between the lowermost door-section and the floor of the car.

As clearly indicated in Fig. 3, each of the joists 2 is provided with notches 17, 18, and 19 to accommodate the strips or cleats 14, 15, and 16 at the inner side of the door. Horizontal guard-rails 20, 21, and 22 are secured to the inner face of the siding and located adjacent the upper edges of the respective door-sections, so as to prevent lateral play of the tops of the door-sections, the strips or cleats at the bottoms of the sections also serving to prevent lateral play of the door-sections.

While the cleats or strips at the bottoms of the door-sections working in the notches or guideways of the joists prevent upward play of the door-sections, it is proposed to further guard against upward looseness of the door by means of a guard-rail 23, secured between the joists and the siding and engaging the top edge of the uppermost door-section, this guard-rail being shown in Fig. 1 of the drawings.

By reference to Fig. 2 of the drawings it will be noted that the joist 24 is slotted longitudinally or made in spaced longitudinal sections to receive the front ends of the door-sections when the door is closed, and the insertion of the door-sections into the joist or post 24 is limited by upright cleats 25, secured to the outer sides of the door-sections. These cleats are spaced at suitable intervals in order that the rearmost cleat may serve as a handle for opening the door-sections from the exterior of the car. There is an opening 26 formed through each door-section between the cleats 25 and the front end of the door to constitute a handhold for moving the door-section from the outside and the inside of the car, said hole being located between the sides of the post 24 in the closed position of the door, whereby the hole is closed so as to prevent the escape of grain therethrough.

For the purpose of holding the door-sections open a hasp 27 is provided for each door-section and is loosely connected to the post or joist 2 opposite the post or joist 24 and designed to be placed transversely across the forward end of the adjacent door-section when the latter is open, as indicated by dot-

ted lines in Fig. 3 of the drawings, there being a staple or keeper 28 carried by the car-frame at the outer side of the door for engagement by the hasp, which is held against accidental displacement from the keeper by means of a locking-pin 29, connected to the car-frame by a suitable flexible connection 30—as, for instance, a chain.

From the foregoing description it will be noted that the present grain-door is located entirely at the inner side of the car and is mounted thereon without making any material alterations in the car-frame beyond notching the joists to accommodate the slidable door-sections between said joists and the car-frame. Moreover, the sections of the door are successively supported upon one another and may be independently opened, beginning with any of the sections. When the door-sections are open, they may be held against working across the doorway under the influence of the jarring movements of the car, and the movable track-section 9 may be slid to one side of the doorway, so as to leave the floor of the car unobstructed, and thereby permit the convenient shoveling of the grain through the doorway.

The pressure of the grain against the door-sections is sufficient to prevent the opening thereof, and therefore it is not necessary to provide positive locking means for holding the door-sections closed.

In unloading the grain the lowermost section is slid back or opened, so as to permit of the grain running out through the doorway beneath the intermediate section 11, and therefore it is preferred to have the lowermost section comparatively narrow, so as to prevent a too rapid running out of grain. After the grain ceases to run out beneath the door-section 11 the two sections 11 and 12 are then opened to give access to the interior of the car for shoveling out the remaining grain. It is in the last stage of the shoveling of the grain that the slidable track-section 9 is moved to one side of the doorway to prevent interfering with the shoveling of the grain.

Having thus described the invention, what is claimed is—

1. The combination with a freight-car having a doorway and upright joists spaced from the siding of the car and provided with upper and lower series of guide-notches, of a grain-door formed of superposed slidable sections, each section being provided with a longitudinal guide-bar lapping the next below door-section throughout the length of the door and working in corresponding guide-notches of the joists.

2. The combination with a freight-car having a doorway, of a horizontally-slidable grain-door, a fixed track-section at one side of the doorway for the support of the door when open, a guideway at the opposite side

of the doorway and in alinement with the track-section and an endwise-shiftable track-section disposed across the doorway to support the door when closed and capable of being slid into the guideway to prevent obstructing the floor of the car when the grain-door is open.

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

JOHN ROHRBERG.

Witnesses:

HENRY FRIDAY,
CHAS. CALANDAR.