



966,476.

J. J. SANDS.  
GRAIN DOOR FOR RAILROAD CARS.  
APPLICATION FILED MAR. 1, 1910.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 2.

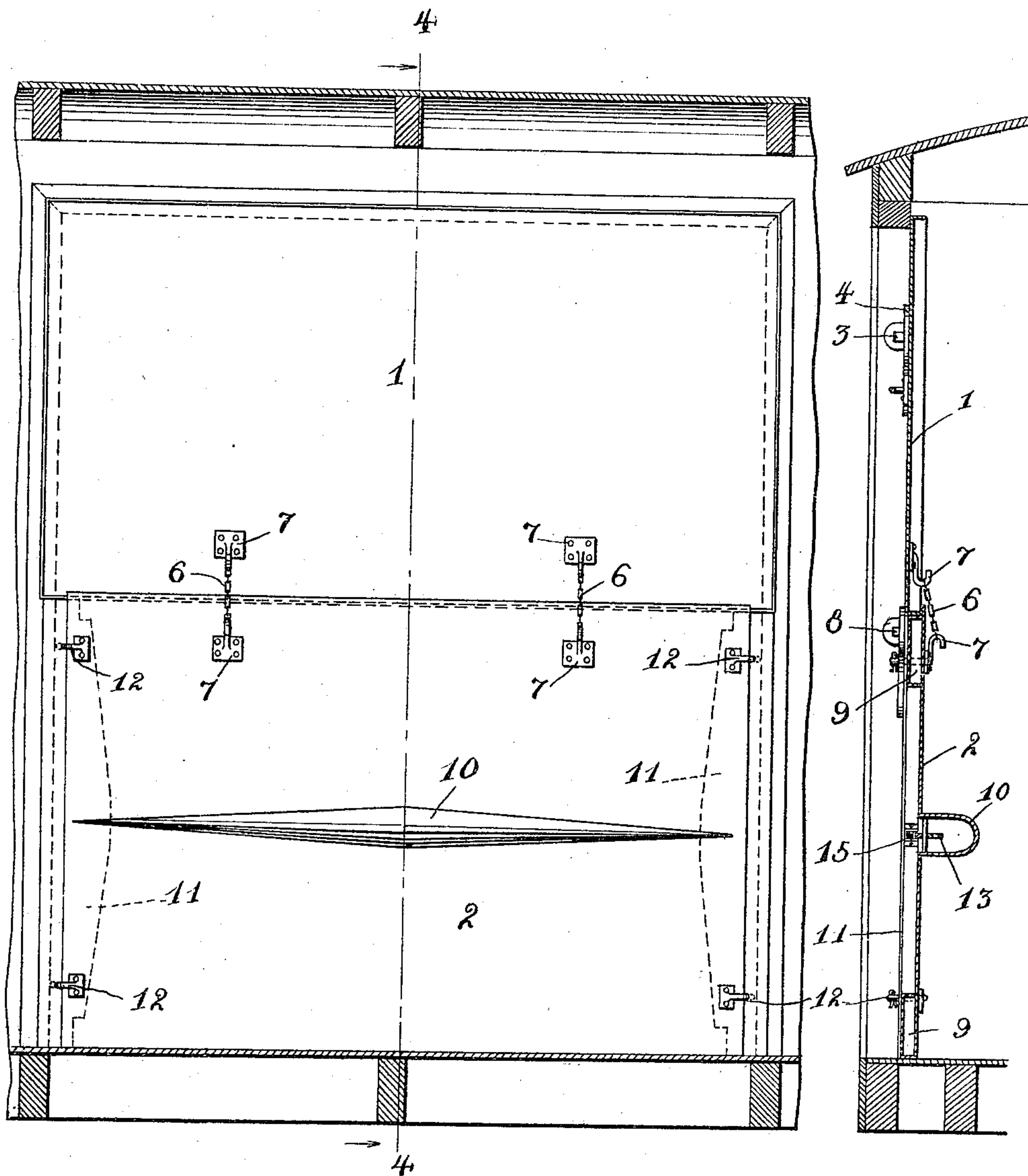


FIG. 3.

FIG. 4.

Witnesses

J. Milton Jester,  
H. H. Byrne

Julius J. Sands

By Knight Bros

Inventor

Attorneys



# UNITED STATES PATENT OFFICE.

JULIUS JOHN SANDS, OF FREMONT, NEBRASKA.

GRAIN-DOOR FOR RAILROAD-CARS.

966,476.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed March 1, 1910. Serial No. 546,635.

*To all whom it may concern:*

Be it known that I, JULIUS J. SANDS, a citizen of the United States, residing at Fremont, in the county of Dodge and State of Nebraska, have invented certain new and useful Improvements in Grain-Doors for Railroad-Cars, of which the following is a specification.

The present invention has reference to grain doors for cars and has as its object to provide such a door which will effectively seal all crevices within the door frame of the car and prevent the loss of grain there-through while the car is moving, and which may be conveniently and readily opened for the removal of the contents therefrom.

Summarily stated the invention contemplates a grain door constructed of a fixed panel or section and a section swingingly supported therefrom, which latter section is provided with retaining side plates that are actuated through the medium of lever and rod mechanism, and formed within said swinging section is a reinforcing strut, the trough whereof is utilized to mount and house the said operating mechanism so as not to increase the overall width of the car.

The invention is further distinct in that the swinging section or panel of the door has means disposed at the corners thereof for positively holding the same in position, and which also enables said section to be swung outwardly independent of its support from the fixed section.

The accompanying drawings illustrate the grain door in its preferred structure and in said views:—Figure 1 is a front elevation of the door in applied position. Fig. 2 is a transverse view thereof taken on the line 2—2. Fig. 3 is a rear elevation of the door and, Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 3.

Referring to the figures in further detail and with like characters of reference indicating corresponding parts in the different views shown the door comprises metallic sections 1 and 2, the former of which is secured within the upper part of the door frame 2' of the car through the medium of two laterally disposed bolts 3. Each of the bolts 3 is provided with a cam operating lever 4, and a tensioning spring 5 for operating the same. The lower or swinging section 2 is supported from the upper section 1 by chains 6 and hooks 7, and also by the cam operated bolts 8 which engage within

the sides of the door frame 2' after the manner of the bolts 3 on the upper section 1. In its structure the swinging section 2 comprises a metallic panel, the upper and lower edges whereof are folded over to provide tubular reinforcing elements 9 (see Fig. 4), and medially and transversely of the panel is an embossment 10 which is disposed inwardly of the car to withstand the pressure of the contents therein against the door. On each side edge the panel 2 is provided with an angle plate or section 11 pivotally mounted thereon by studs 12, said sections 11 being adapted to jointly coöperate and effectively seal the closure of the door within the frame 2' for the purpose understood. When in operative position the plates 11 lie with one edge against the inner side of the door frame 2', and to permit of the door being swung outwardly for emptying the contents of the car said sections 11 are adapted to swing into that position shown by dash line in Fig. 2. This manner of swinging the panel is afforded by the disposal of the pivot studs 12.

The mechanism for actuating the swinging sections 11 consists of a lever 13 pivotally mounted within the trough of the embossment 10 and having connected therewith rods 14, said rods being secured at their opposite ends to arms 15 that are rigidly secured to the sections 11. When the door is closed the lever 13 and rods 14 lie substantially within the trough of the embossment 10 whereby to not increase the overall width of the car, and in this relation said rods and lever are secured by the latch 16.

On its lower corners the section 2 is fitted with screw threaded turning bolts 17 mounted within sleeves 18, and have for their function to engage within the lower corners of the door frame 2' and additionally secure the grain door in position.

From the foregoing it will be seen that the lower section 2 while being swingingly supported from the upper part by means of the chains 6, has also an independent mounting within the door frame 2' whereby the door section 2 may be swung outwardly, and which further serves to hold the same in place during the early filling of the car through the upper part of the doorway.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent, is:—

1. A grain door for cars comprising a



metallic panel formed with a hollow reinforcing strut and having means for swingingly mounting said panel in the door frame of a car, a retaining section for said panel  
5 hinged thereon for sealing the closure of the door and means for actuating said retaining section, said means lying substantially within the trough of said strut when the door is closed whereby to not increase  
10 the overall width of the car.

2. A grain door for cars comprising a metallic panel formed with a hollow transversely disposed reinforcing strut, and having means for swingingly mounting said  
15 panel in the door frame of a car, a retained section hinged to the panel adjacent one end

thereof, a lever pivotally mounted within the sides of the trough of the strut, and a rod connecting said lever with said retaining section whereby to actuate the latter, said  
20 rod and lever lying substantially within the trough of said strut when the door is closed whereby to not increase the overall width of the car.

The foregoing specification signed at San  
Jose, California this 18th day of February,  
1910.

JULIUS JOHN SANDS.

In presence of—

H. J. DOUGHERTY,  
JOHN H. SANDS.