No. 812,838. PATENTED FEB. 20, 1906.

J. FEUCHT.

GRAIN DOOR FOR CARS.

APPLICATION FILED APR. 27, 1905.

3 SHEETS—SHEET 1.

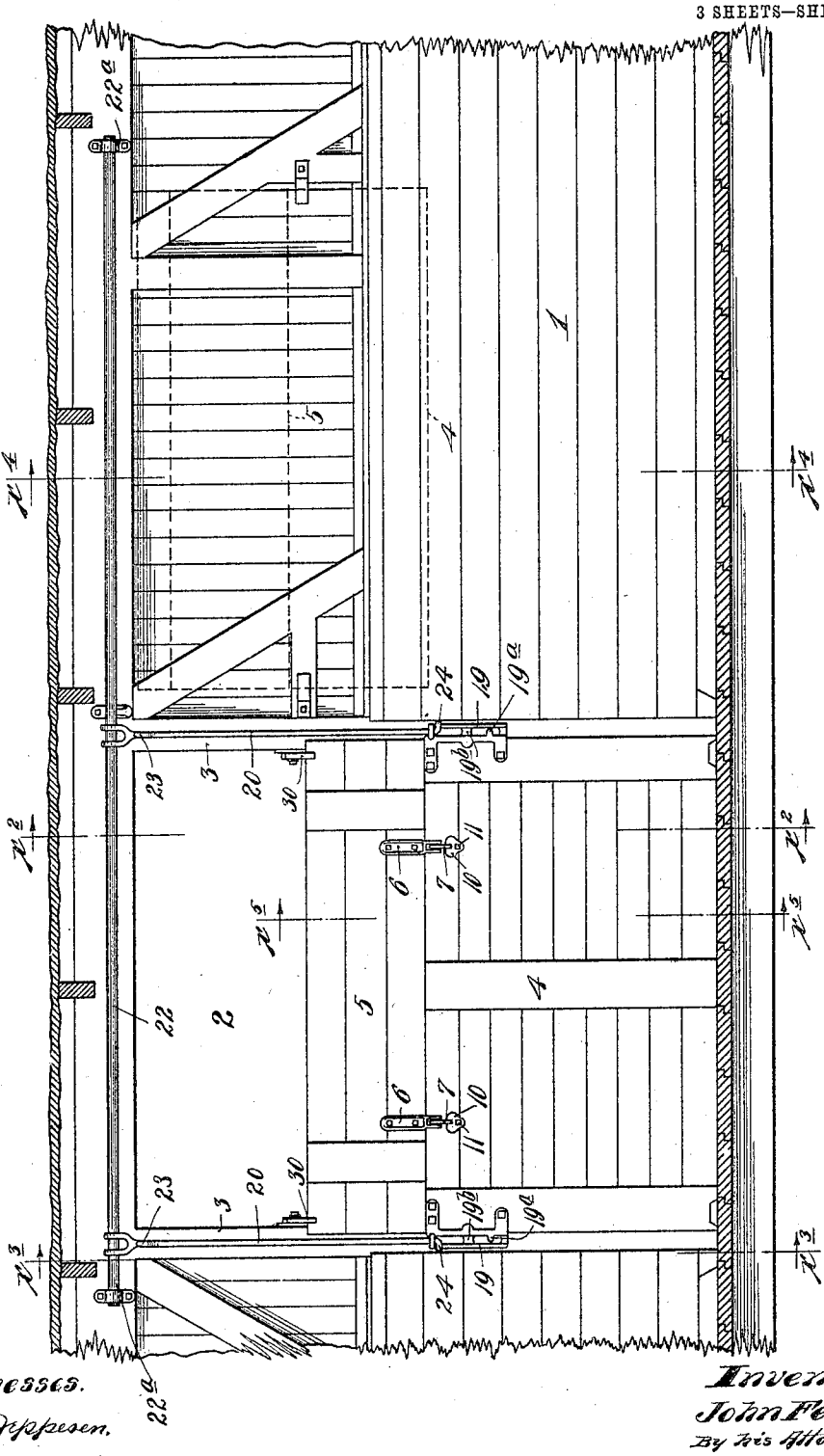

Fig. 1.

Witnesses.
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John Feucht.
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3 SHEETS—SHEET 2.

Fig. 5.

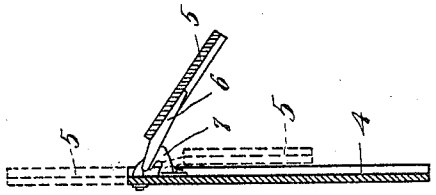


Fig. 4.

Fig. 3.

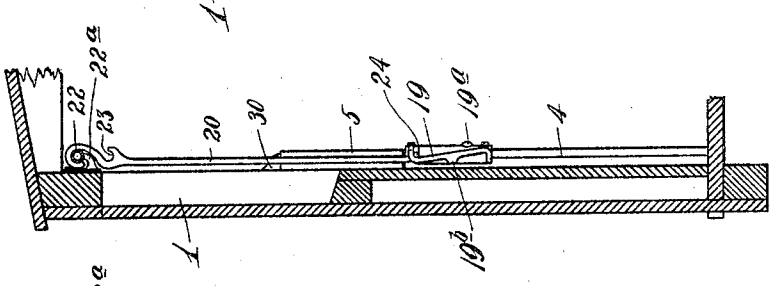
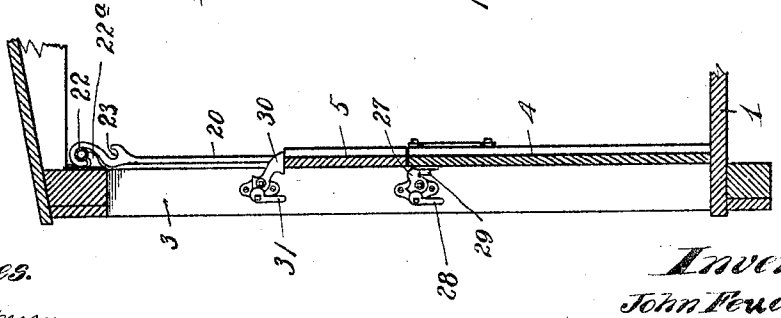


Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 8.

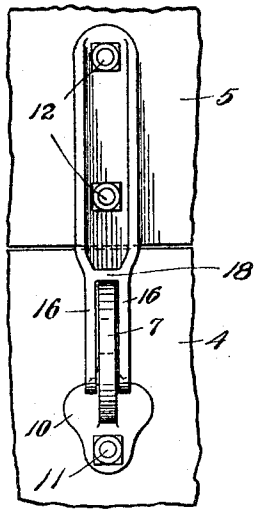


Fig. 6.

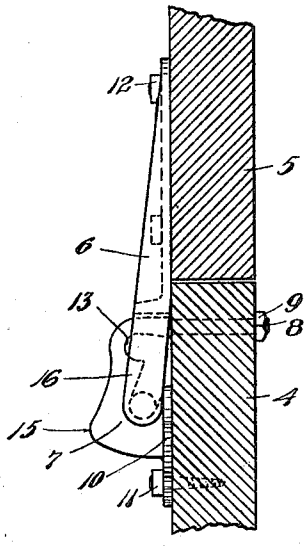
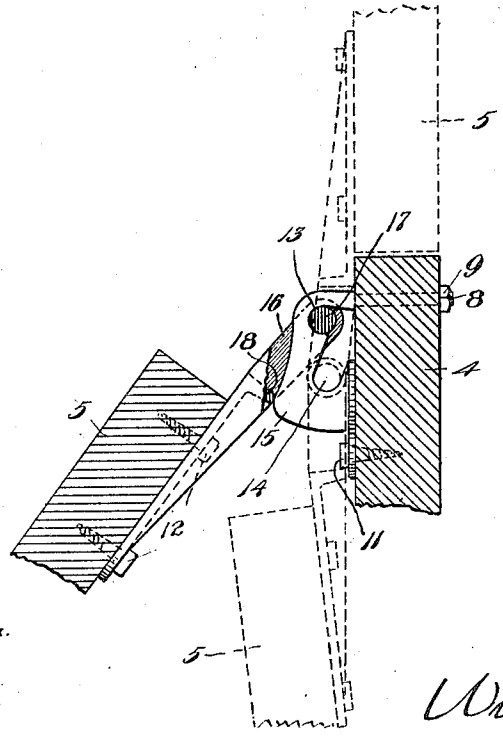


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN FEUCHT, OF BRAINERD, MINNESOTA.

GRAIN-DOOR FOR CARS.

No. 812,838. Specification of Letters Patent. Patented Feb. 20, 1906.

Application filed April 27, 1905. Serial No. 257,598.

To all whom it may concern:

Be it known that I, JOHN FEUCHT, a citizen of the United States, residing at Brainerd, in the county of Crow Wing and State of Minnesota, have invented certain new and useful Improvements in Grain-Doors for Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to grain-doors for freight-cars, and has for its object to improve the same in the several particulars hereinafter noted.

The invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claim.

In the accompanying drawings, which illustrate my invention, like characters indicate like parts throughout the several views.

Figure 1 is a view principally in elevation, but partly in section, and with some parts broken away showing one side of a freight-car having applied thereto a grain-door embodying my invention, the said parts being viewed from the inside of the car-body. Fig. 2 is a transverse vertical section on the line x^2 x^2 of Fig. 1, some parts being broken away. Fig. 3 is a section on the line x^3 x^3 of Fig. 1. Fig. 4 is a section on the line x^4 x^4 of Fig. 1, showing the grain-door turned upward and secured in an inoperative position. Fig. 5 is a section on the line x^5 x^5 of Fig. 1. Figs. 6 and 7 are enlarged sections on the same line as Fig. 5, but with parts broken away; and Fig. 8 is an elevation of the parts shown in Fig. 6.

The numeral 1 indicates the body of a freight-car, which, as is usual, is provided at each side with a doorway 2, and drawing door-jambs or side beams 3.

The grain-door is made up of a main section 4 and a supplemental upper section 5, which door-sections are connected by hinges of novel construction. These hinges are made up of hinge members 6 and 7, the former of which are rigidly secured to door-section 5 and the latter of which are rigidly secured to the door-section 4. In the preferred construction illustrated the hinge members 7 are provided at their upper extremities with threaded stems 8, that are passed through the door-section 4 and are provided at their inner ends with nuts 9. At their lower portions said hinge members 7 are provided with expanded feet 10, that are secured to said door-section 4 by screws 11 or other suitable devices. The hinge members 6 are, as shown, secured to the door-section 5 by screws 12.

The bodies of the hinge members 7 lie in vertical planes and project outward from the door-section 4 and are formed with intersecting seats 13 and 14 and with bearing shoulders or surfaces 15. The hinge members 6 are formed with long laterally-spaced ears 16, that embrace the bodies of the hinge members 7 and are tied together by bars 17, that work in the seats 13 and 14 in a manner which will presently appear. The ears 16 at their base ends are united by bearing-shoulders 18.

The ears 16 are of such length that when the tie-bars 17 are dropped into the lower seats 14 and the door-section 5 is turned either upward or downward the bearing-shoulders 18 will clear the coöperating bodies of the hinge members 7, but are of such length that when said bars 17 are engaged with the upper seats 13 and the door-section 5 is turned downward, as shown by full lines in Fig. 7, the bearing-shoulders 18 of said members 6 will engage with the bearing-shoulders 15 of the hinge members 7 and securely hold the said door-section 5 in such inclined position. The said door-section 5 when thus held in an inclined position affords an inclined shelf or chute, which is very serviceable in loading and unloading the car, especially when such articles as filled sacks are to be handled.

The grain-door section 4 is provided at its ends and near its upper edge with laterally-offset guide-loops 19, with which engage the lower ends of hanger-rods 20, which rods at their upper ends are pivotally and slidably mounted on a horizontal rod 22, secured on an upper beam of the car by bearings 22^a. The intermediate bracket 22^a has engagement with the horizontal rod 2 only on the under side to enable the upper hooked ends of the hanger-rods 20 to freely pass the same in their sliding movements, as best shown in Figs. 2 and 3 of the drawings. The hanger-rods 20 near the extremities of their pivoted upper ends are formed with upwardly-opening hook-like seats 23, and at their extreme lower or free ends they are bent laterally away from the doorway to form stops 24, The hanger-rods 20, it will be noted, are slightly curved, so that they bend toward the doorway to a point approximately in line with the top of the door and then curve or bend away from the doorway. The side por-

tions of the guide-loops 19 are inclined, and the end portions thereof are offset, so that when the door is slid upward on the hanger-rods 20 and turned into an inoperative position (shown in Fig. 4) the said hanger-rods are permitted to lie very nearly in the plane of the folded door. Before the folded door is turned upward into the inoperative position (shown in Fig. 4) its supplemental section 5 is folded, and the door is then slid upward on the hanger-rods and the upper portions of the guide-loops 19 are hooked into the seats 23 of said hanger-rods. At such time the free ends of the hanger-rods 20 closely engage between lugs 19^a on brackets 19^b, to which latter the loops 19 are rigidly attached.

As shown in Fig. 4, the folded grain-doors are adapted to be caught and held in inoperative positions by pivoted catch-hooks 25, supported by a central beam 26 of the roof-frame of the car-body.

For clamping the sections of the grain-door lock devices of novel construction are employed; but as these lock devices are subject-matter of a companion application filed of even date herewith a brief description thereof will serve the purposes of this case. The numeral 27 indicates pivoted lock-dogs which are applied to the sides of the door-jambs and are subject to eccentric lock-levers 28. The free ends of these lock-dogs 27 engage with recessed pockets 29 on the upper edge of the door-section 4.

The numeral 30 indicates lock-dogs which are pivoted to the sides of the door-jamb and are subject to lock-levers 31. The hooked ends of the dogs 30 engage the upper free edge of the supplemental door-section 5 to hold the same locked in its upturned operative position. The levers 28 and 31 operate on the lock-hooks 27 and 30, respectively, to hold the same either in operative or inoperative positions, as will more fully appear in said companion application.

Referring again to Fig. 4, it will be noted that when the grain-door is folded, turned upward, and held in an inoperative position the free ends of the curved hanger-rods 20 lie very close to the beam 26 and, acting on the guide-loops 19, hold down the door-section 4 and prevent the same from jumping under the vibratory movements of the car.

From what has been said it will be understood that the device described is capable of modification within the scope of my invention as herein set forth and claimed.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

The combination with the door-sections 4 and 5, of the hinge member 7 secured to said door-section 4 and having a bearing-shoulder 15, and an approximately vertical seat 14, having an outwardly-projecting seat 13, and the hinge member 6 secured to said section 5 and provided with the ears 16, tie-bar 17 and bearing-shoulder 18, said shoulders 15 and 18 being held in engagement when said tie-bar 17 is engaged with said seat 13 to support the door-section 5 in an outwardly-inclined position, substantially as described.

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

JOHN FEUCHT.

Witnesses:

A. T. LARSON,

CAROLINE FEUCHT.