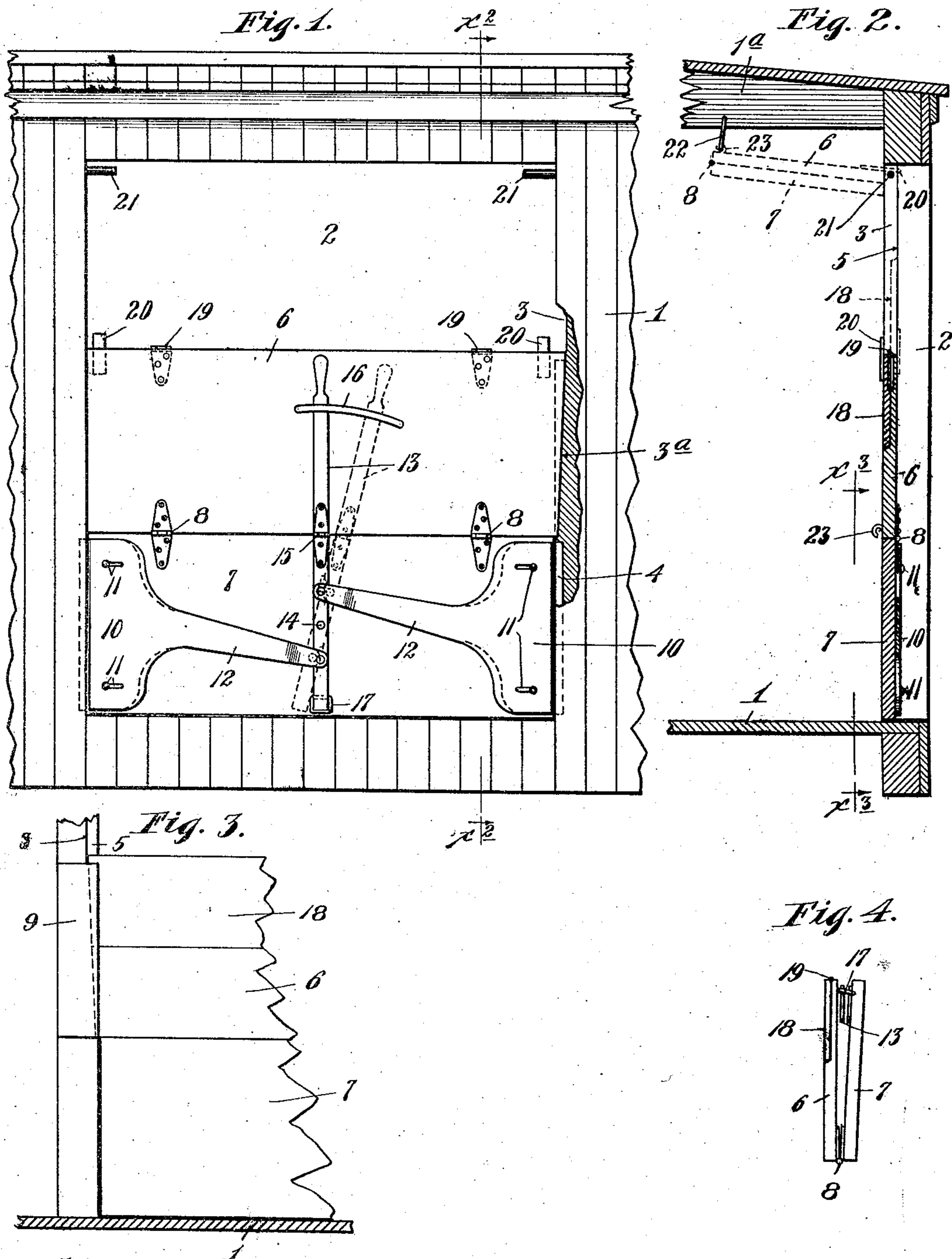


No. 841,900.

PATENTED JAN. 22, 1907.

L. W. SCHREIBER.
GRAIN DOOR FOR CARS.
APPLICATION FILED MAY 23, 1906.



Witnesses.

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UNITED STATES PATENT OFFICE.

LOUIS W. SCHREIBER, OF BEE, NEBRASKA.

GRAIN-DOOR FOR CARS.

No. 841,900.

Specification of Letters Patent.

Patented Jan. 22, 1907.

Application filed May 23, 1906. Serial No. 318,356.

To all whom it may concern:

Be it known that I, LOUIS W. SCHREIBER, a citizen of the United States, residing at Bee, in the county of Seward and State of Nebraska, 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 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 claims.

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

Referring to the drawings, Figure 1 is a view in side elevation, showing the central portion of the body of an ordinary box-car and showing my improved grain-door applied to one of the side door-openings thereof. Fig. 2 is a transverse vertical section taken on the line $x^2 x^2$ of Fig. 1, some parts being broken away. Fig. 3 is a vertical section taken on the line $x^3 x^3$ of Fig. 2; and Fig. 4 is a detail in end elevation, showing the improved grain-door removed from working position and folded.

The numeral 1 indicates the body of a box-car, the same having the usual side door-openings 2 on each side thereof. The vertical sides of the door-framework are on their inner portions cut back or rabbeted at 3 4 to form seats respectively for the upper and lower sections of the grain-door and to form heavy stop-flanges 5, against which the said sections of the door are forced under the pressure of the grain.

The grain-door is made up chiefly of an upper section 6 and a lower section 7, which parts are connected by hinges 8. The upper section 6 has downwardly-converging end surfaces, and the lower portions of the seats 3 in the door-jambs are formed with correspondingly-converging surfaces 3^a, as best shown in Fig. 1. The lower door-section 7 is of such length that it will swing freely outward between and clear of the stop-flanges 5 of the said door-jambs. Keeper-plates 9, secured to the inner surfaces of the door-jambs, serve to hold the upper door-sections 6

against inward movement when it is in working position. Stop-plates 10 are slidably connected to the ends of the lower door-sections 7, as shown, by means of slot-and-pin connections 11. These stop-plates 10 are provided with arms 12, that are pivotally connected to a lever 13, which lever is pivoted to the door-sections 7 at a point between the attached ends of the arms 12, as indicated at 14. The lever 13 is made in two sections, and the two sections are connected by a hinge 15, that stands in line with the door-hinges 8. The upper end of the lever 13 is held to the upper door-section 6 by a guide-yoke 16. An approximately rectangular link 17 is pivotally attached to the lower end of the lower section of the lever 13 and is adapted to be turned over the upper end of the said lever to lock the two lever-sections together when the door-sections are folded, as shown in Fig. 4.

When the door is applied as shown in Fig. 1 and the stop-plates 10 are moved inward, as shown by full lines in said view, the lower door-section 7 is free to swing outward, and thereby to allow the grain to freely run from the car without removal of the grain-door and without requiring any part of the door-section to be moved vertically upward while it is subject to grain-pressure.

When the door is in the position shown by full lines in Figs. 1 and 2 and the stop-plates 10 are forced outward by a movement of the lever into the position shown by dotted lines in said Fig. 1, said stop-plates will enter the seats 4, and the lower portions of the stop-flanges 5 of the door-jambs will hold the lower door-section 3 against outward movement under the pressure of the grain thereon. The downwardly-converging ends of the upper door-section 6 are closely engaged with the correspondingly-inclined seat portions 3^a of the door-jambs. The upper portion of the upper door-section 6 is preferably reduced in thickness and provided with a supplemental leaf or extension section 18, that is connected thereto by hinges 19, and when folded, as shown in Figs. 1 and 2, lies flush with the body of the said section 6. When a car is loaded with light material, such as oats, this supplemental section or leaf 18 may be turned upward, as shown by dotted lines in Fig. 2. Vertically-projecting fingers 20 are secured to the upper portion of the door-section 6, the same, as shown, being directly secured to the leaf 18. On the door-jambs, near the upper

extremities of the seats 3, are inwardly-projecting pivot-pins 21, and on one of the transverse beams or carlines 1^a of the car-body is loosely pivoted a link 22, that is adapted to engage with a hook-lug 23 on the free or swinging edge of the door-section 6. After the door-section 7 has been released and swung outward by the pressure of the grain it may be turned upward or folded against the section 6 and secured in that position by the engagement of the link 17 with the upper end of the lever 13, all as heretofore described. The folded door may then be raised upward until its upper edge engages the pivot-pins 21, whereupon it may be swung inward and upward on the said pins into the position shown by dotted lines in Fig. 2. When the folded door is swung into this inoperative position, the link 22 may be connected to the hook-lug 23, and the folded door may then be suspended in that position by the said link and by the fingers 20, which then rest upon the pivot-pins 21.

The improved grain-door above described while of small cost may be very easily operated and is not liable to be broken in opening the car for the removal of the grain. It is a well-known fact that grain-doors as usually constructed are broken or damaged to a very considerable extent every time a car loaded with grain is opened up.

What I claim is—

1. A grain-door made up of sections connected by hinges and adapted to be folded together, in combination with a pair of stop-plates slidably mounted on the ends of one of the said door-sections, a lever pivoted to one of said sections and connected to said

two stop-plates, said lever having a hinge in line with or approximately in line with the hinges of said sections adapting it to be folded and permitting the door-sections to be folded, substantially as described. 40

2. A grain-door made up of sections 6 and 7 connected by hinges 8, said sections 7 being shorter than said sections 6, in combination with a pair of stop-plates 10 slidably mounted on the ends of said door-sections 7, a lever 13 pivoted at 14 to said section 7 and connected to said two stop-plates 10, said lever having a hinge 15 in line with or approximately in line with the hinges of said sections adapting it to be folded, and permitting the door-sections 6 and 7 to be folded together, a device holding the upper end of said lever close to said door-section 6, and means for holding the two ends of said lever together, substantially as described. 50 55

3. A grain-door made up of sections connected by hinges, in combination with means for locking the lower door-section in an operative position, comprising a lever pivoted to the lower section and provided with a hinge in line with or approximately in line with the hinges of said section permitting the lower door-section to swing, with respect to the upper door-section, the upper section of said lever being held close to the upper door-section but free for oscillatory movement with respect thereto, substantially as described. 60 65 70

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

LOUIS W. SCHREIBER.

Witnesses:

OLIVER ANDERSON,
CHARLIE GUNBLER.