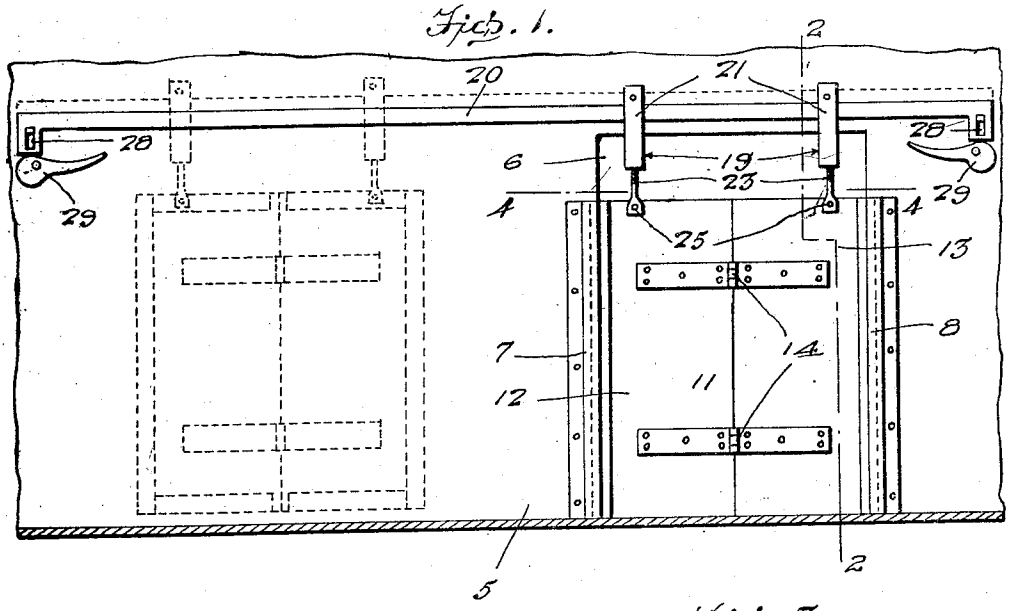
Sept. 29, 1925. 1,555,317

H. E. ROLLASON

GRAIN DOOR

Filed Dec. 9, 1922

Fig. 1.



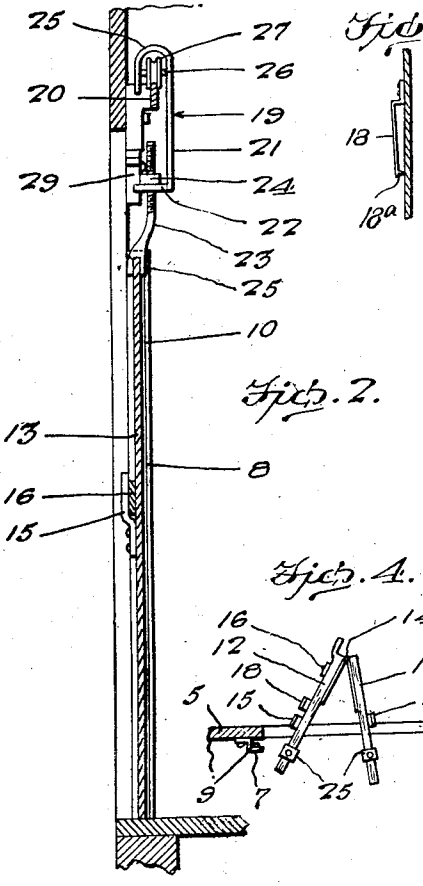


Fig. 2.

Fig. 5.

Fig. 3.

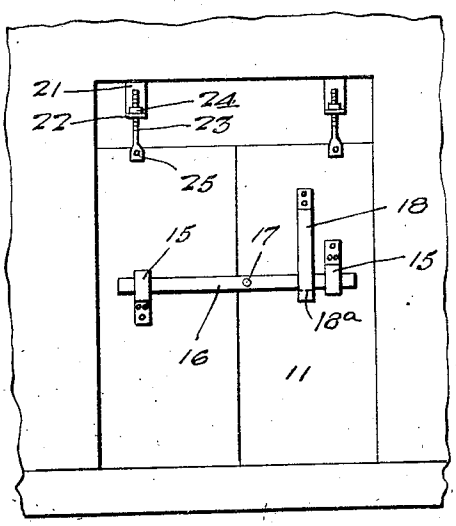


Fig. 4.

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UNITED STATES PATENT OFFICE.

HAROLD ERNEST ROLLASON, OF TROCHU, ALBERTA, CANADA.

GRAIN DOOR.

Application filed December 9, 1922. Serial No. 605,969.

To all whom it may concern:

Be it known that I, HAROLD ERNEST ROLLASON, a subject of the King of Great Britain, and resident of Trochu, in the Province of Alberta, Dominion of Canada, have invented certain new and useful Improvements in Grain Doors, of which the following is a specification.

The primary purpose of the invention is to provide a door for grain, fruit, and other cars which is capable of being moved from a position at one side of the door opening to a position within or opposite said opening and which, in the latter position, may be permitted to collapse under the pressure of the car contents to permit escape of the latter without making it necessary to shift the door from its position within or opposite the door opening.

Another purpose of the invention is to provide a door of the type mentioned, composed of hingedly related sections normally held in alignment across the door opening but adapted, when the holding means is released, to fold or collapse in a manner permitting escape of the car contents without necessitating detachment of the door from the car.

A still further purpose of the invention is to provide improved means supporting the door for travelling movement to permit bodily movement of the door from a position at one side of the door opening to a position within or opposite said opening.

Other purposes and advantages of the invention not specifically stated above will become apparent from the following description and accompanying drawings, in which

Figure 1 is a view in side elevation of my invention as applied to the inner side of a car wall having the usual door opening.

Figure 2 is a vertical sectional view taken along the line 2—2 of Figure 1.

Figure 3 is a fragmentary view in side elevation showing the outside appearance of my improved door when secured in a position closing the door opening in the car wall.

Figure 4 is a sectional view along the line 4—4 of Figure 1, but showing the door as it will appear when in open or folded position.

Figure 5 is a fragmentary detail view.

Referring more particularly to the drawings, 5 designates a car body which is provided with the usual door opening 6. Angle irons 7 and 8 are secured to the car wall on opposite sides of the opening 6 to afford grooves 9 and 10 adapted to receive therein the free longitudinal edges of the door which is designated as a whole by the numeral 11.

The door 11 is preferably composed of a pair of sections 12 and 13 having their adjacent edges hingedly connected as indicated at 14 and, preferably, formed for overlapping engagement to prevent leakage therebetween when the sections are aligned across the door opening as shown in Figure 1.

In order to hold the door sections in alignment across the door opening, I provide the said sections with oppositely facing keepers 15 disposed to overlie the end portions of a cross bar 16 which is pivoted to one of the sections as indicated at 17. This bar is normally held in the position shown in Figure 3 by a spring latch 18 but may be released and moved out of engagement with the said keepers 15 to permit the door sections to fold or buckle outwardly to the open position shown in Figure 4. The latch 18 has its lower end enlarged as at 18^a to engage beneath the bar 16 as indicated by dotted lines in Figure 3.

The door sections 12 and 13 are carried by suitable hangers 19 supported at their upper ends to move longitudinally along a track 20. Each hanger is preferably composed of two swivelly connected parts comprising a vertical plate 21 having its lower end bent at right angles as indicated at 22 and apertured to receive therethrough the threaded shank of a screw 23 which is equipped above the portion 22 with a supporting nut 24. The lower portion of the said screw is offset with respect to the threaded shank and terminates in a bifurcated portion 25 fitting over and secured to the upper edge of one of the door sections as shown to advantage in Figure 2. The upper end of the plate 21 is bent laterally and downwardly as indicated at 25 to support one end of a spindle 26 carrying a grooved roller 27, the other end of said spindle being supported by the opposing body portion of the plate 21.

The rollers 27 of the two hangers 19 are movable along the upper rounded edge of the track 20 which is in the form of an elongated bar having its opposite end portions attached to the wall of the car by a slot and pin connection 28, the said ends be-

ing offset with respect to the intervening or body portion of the bar so as to maintain the latter in spaced relation to the wall of the car as shown to advantage in Figure 2. As shown by dotted lines in Figure 1, the slot and pin connection between the wall of the car and the track is designed to permit the latter to be raised vertically to move the lower edge of the door 10 out of engagement with the car floor whereby said door is freely movable longitudinally of the track. Preferably, this raising and lowering movement of the track is effected through the medium of a pair of cam levers 29 pivoted to the car wall and having their cam surfaces engaging the offset ends of the bar. In lieu of this arrangement, however, it will be understood that a single cam lever may be positioned below the intermediate portion of the bar or that any other suitable means may be provided for accomplishing the function of the said levers.

Assuming the parts to be arranged as shown by full lines in Figures 1 and 3, when it is desired to discharge the contents of the car, the member 18 is disengaged from the cross bar 16 and the latter rotated out of engagement with the keepers 15. The pressure of the car contents against the door will now be effective to buckle the door sections outwardly to the collapsed or folded position shown in Figure 4, thus permitting the contents of the car to discharge through the door opening without making it necessary to shift the door to one side of the opening or to completely detach the door from the car as is usually required. If it is desired to close the door after the discharging operation, it is simply necessary to force the door sections into alignment in such a manner as to reengage the free longitudinal edges of the sections in the grooves 9 and 10, after which the bar 16 is again swung to a position underlying the keepers 15 to hold the sections in aligned position. Assuming that it is desired to move the door from the position shown in Figure 4 to the position indicated by dotted lines in Figure 1, the cam levers are operated to raise the track and thereby elevate the lower edge of the door with respect to the car floor. The door is then tilted inwardly on the track sufficiently to clear the angle irons 7 and 8, after which the door sections may be flattened out or moved into a position of alignment and the door shifted to the left on the track, the latter being then lowered by movement of the levers to position the lower edge of the door on the car floor whereby the weight of the door will be effective to hold it against inadvertent shifting movement on the track.

While in the foregoing, I have described what I now consider to be the preferred embodiment of my invention, it is to be understood that I am not to be limited to the exact details, combination, and arrangement of parts set forth herein, but may resort to such modifications as may be desired providing of course that the same come within the spirit and scope of the appended claim.

What I claim is:

A car door construction comprising an overhead supporting track from which a door is adapted to be suspended for sliding movement, said track presenting a body portion adapted to be spaced from the car wall and offset end portions engageable with said wall, pin and slot means for securing the offset ends of the track to the wall to permit bodily vertical movement of the track and cam levers, adapted to be mounted with the cam surfaces thereof engaging the offset ends of the track to effect raising or lowering movement of the latter.

In testimony whereof I hereunto affix my signature.

HAROLD ERNEST ROLLASON.