





# UNITED STATES PATENT OFFICE.

JAMES OMAR OAKLEY, OF MONTREAL, CANADA, ASSIGNOR OF ONE-HALF TO JOSEPH JOHN WESTGATE AND CHARLES LEANDER HIGGINS, OF MONTREAL, CANADA.

## GRAIN-DOOR.

SPECIFICATION forming part of Letters Patent No. 740,686, dated October 6, 1903.

Application filed June 26, 1902. Serial No. 113,305. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES OMAR OAKLEY, of the city of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Grain-Doors; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to the manner of hanging the grain-doors of freight-cars adapted for use at times in the shipment of grain, and incidentally to the particular construction of the doors themselves, the object of the invention being to facilitate the removal of the door completely away from the door-opening and render same less liable to damage.

The invention may be said, briefly, to consist in providing a door of particular construction with projections to take into guide-ways in the side of the car, whereby the door may be raised and moved away from the door-opening, the door being preferably made in two sections, each consisting of a series of metal-bound members. For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming a part of this specification, in which like symbols indicate the same parts, and wherein—

Figure 1 is a longitudinal vertical sectional view of the body of a freight-car provided with my invention. Fig. 2 is a similar view with one part of my improved door shown displaced in full lines and with both parts of the door shown displaced in dotted lines. Fig. 3 is an exterior view with the door closed; and Fig. 4 is an enlarged transverse vertical sectional view taken on line 4 4, Fig. 1. Fig. 5 is a detail sectional view illustrating the latch for yieldingly retaining the door parts in place.

The car-body *b* may be of any approved construction. A pair of angular guiding-grooves are formed inside of the car, consisting of vertical portions *c* and *d* and horizontal portions *e* and *f*. The vertical portions are located one at each side of and *d* being of less height than the door-opening, while the horizontal grooves are of different lengths and located near the roof of the car and each having its end downwardly offset, as at *g* and

*h*. The door is preferably made in two parts *j* and *k*, each having a pair of studs *l* and *m* taking into and adapted to slide along the grooves. The part *j* has a depending flange *t* on the inside of its lower edge to overlap the part *k* and prevent leakage of the contents of the car between the said parts, while to prevent leakage at or packing of the substance beneath the edges of the doors I provide them at the outer edges of each end and at their lower sides with flanges *n* to slide beneath flanges *o*, secured, as at *p*, upon the side of the car parallel to the guiding-grooves. The door parts are lifted and slid along the horizontal grooves away from the door-opening, the part *j* being shifted first and then the part *k*, (see Fig. 2,) or the lower part *k* only may be used—as, for instance, when coal is to be carried. To allow of this lifting and sliding of the door parts, it is necessary that they be light in weight and at the same time of sufficient strength to withstand the pressure of the contents of the car and the wear and tear of shifting to their different positions. To this end it is essential to my invention that the door parts be each constructed of a series of metallic channel members having the flanges *q* of each riveted to the flanges of the channel members above and below it, and a wooden filler *r* fills each of said channel members and imparts rigidity to the door parts, while the metallic channels bind the whole together and presents a tough and smooth outer surface, Fig. 3, and even inside surface, Figs. 1, 2, and 4.

To retain the upper door part against accidental displacement from its position across the door-opening, I provide it with a latch consisting, preferably, of a bent piece of flat steel *u*, embedded in one side edge thereof and adapted to take into a notch *v* in the door-frame, said latch having a laterally-projecting lug *w*, whereby it can be sprung back out of its notch to release the door part, while each of the door parts when in its position away from the door-opening slips beneath a rigid retaining-bar *x*, secured to the side of the car.

A semicircular valvular port 2 is cut through the lowermost member of the lower part of the door and is controlled by a semi-



circular valvular disk 3, pivoted in a position to hang over said valvular port, this disk having a pair of recesses 4 to enable it to be shifted away from the port from the outside.

5 What I claim is as follows:

1. In a car for carrying grain, the combination with a pair of vertically and horizontally movable doors located one above the other when in their closed position and extending across the lower portion of the door-opening, of means for guiding said doors one after the other in the same path vertically from the bottom to the top of the door-opening, and means for guiding both doors one after the other horizontally and laterally from the upper end of the door-opening.

2. In a car for carrying grain, the combination with a pair of vertically and horizontally movable doors located one above the other when in their closed position and extending across the lower portion of the door-opening, of means for guiding said doors one after the other in the same path vertically from the bottom to the top of the door-opening and means for guiding said doors one after the other in the same path horizontally and laterally from the upper end of the door-opening, thus providing for one door to follow the other away from the door-opening.

3. A car for carrying grain having a door-opening in the side thereof, a pair of vertical guiding-grooves one at each side of said opening, one of said guiding-grooves extending from within a short distance of the bottom of the car to a point above the top of said opening, and the other extending from within a

short distance of the bottom of the car upwardly to a point within the height of said door-opening, a pair of parallel horizontal guiding-grooves, one being connected to the upper end of the longer vertical groove, and the other being connected to the upper end of the shorter vertical groove, and a door having studs at different distances from the top thereof and sliding in said guiding-grooves substantially as described and for the purpose set forth.

4. A car for carrying grain, having a door-opening in the side thereof, a pair of vertical guiding-grooves one at each side of said opening, one of said guiding-grooves extending from within a short distance of the bottom of the car to a point above the top of said opening and the other extending from within a short distance of the bottom of the car upwardly to a point within the height of said door-opening, a pair of horizontal guiding-grooves, one being connected to the upper end of the longer vertical groove, and the other being connected to the upper end of the shorter groove, the free ends of said horizontal guiding-grooves being downwardly offset, and a door having studs at different distances from the top thereof and sliding in said guiding-grooves substantially as described and for the purpose set forth.

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

JAMES OMAR OAKLEY.

Witnesses:

FRED J. SEARS,  
ARTHUR H. EVANS.