(No Model.) 2 Sheets—Sheet 1.

F. L. KIRKBRIDE.

GRAIN CAR DOOR.

No. 279,255. Patented June 12, 1883.

Fig. 1.

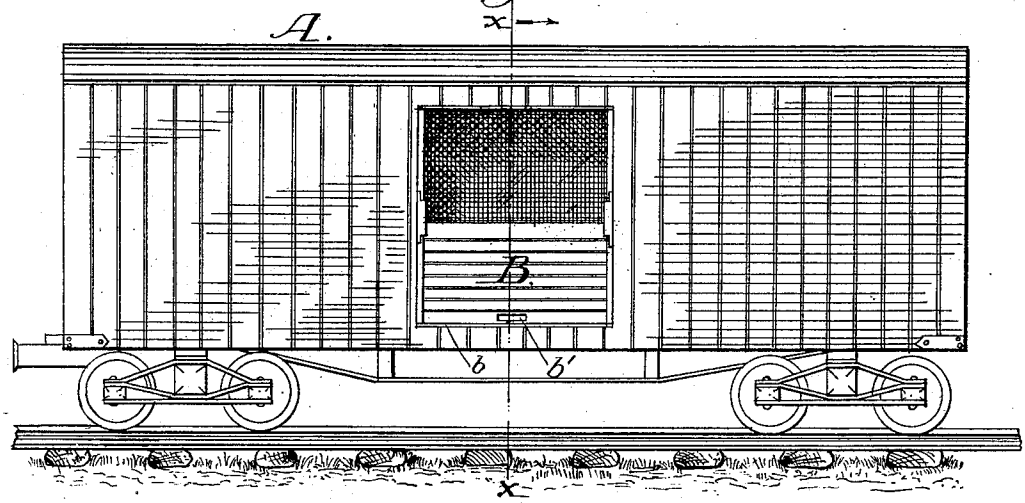


Fig. 2.

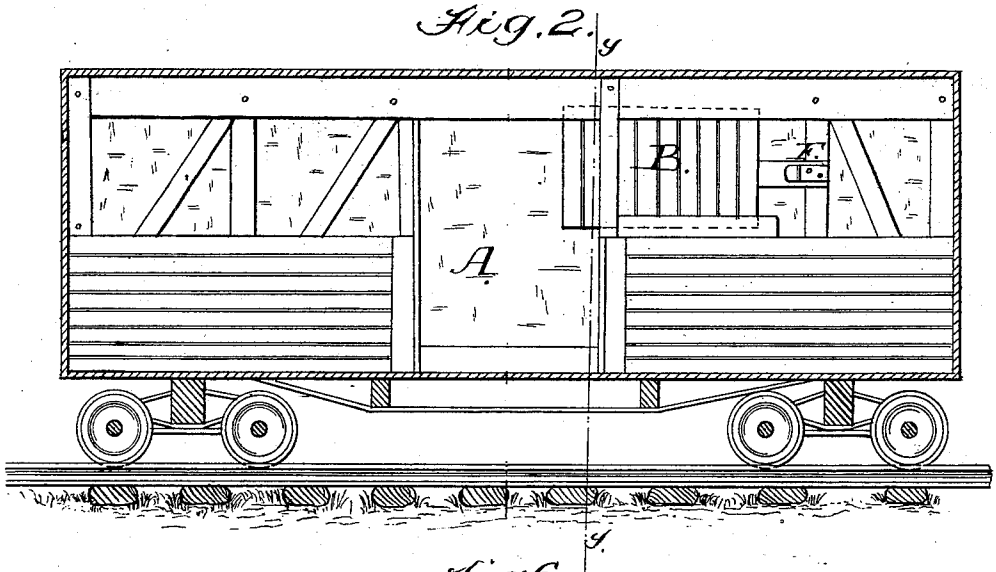
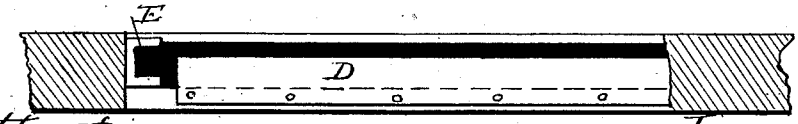


Fig. 6.



Attest:

Walter Fowler,

H B Applewhaite,

Inventor;

Fredk. L. Kirkbride

by

A. N. Evans Her

Atty.

(No Model.) 2 Sheets—Sheet 2.

F. L. KIRKBRIDE.

GRAIN CAR DOOR.

No. 279,255. Patented June 12, 1883.

Fig. 3.

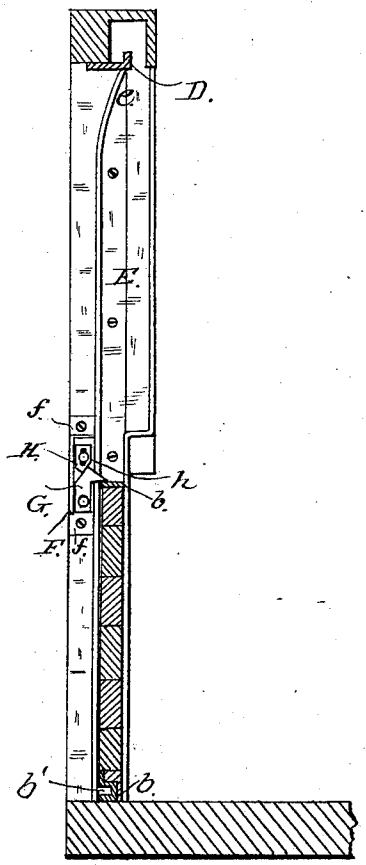


Fig. 4.

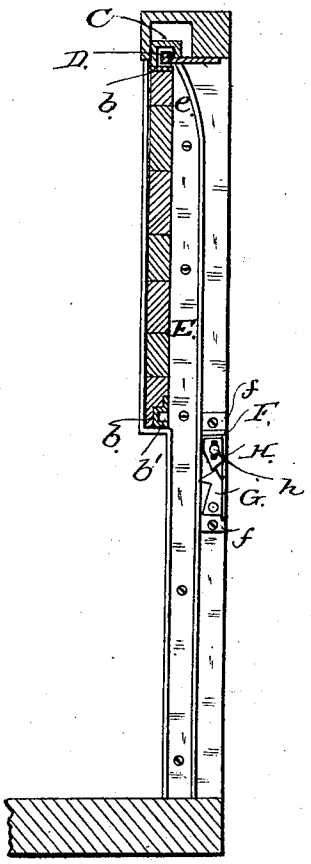
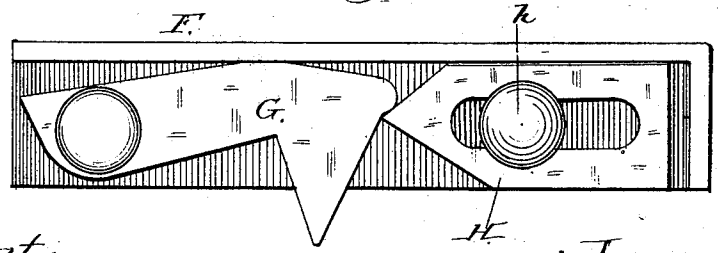


Fig. 5.



Attest;

Charles Fowler
C. B. Applewhite.

Inventor;
Fredk. L. Kirkbride
by
A. H. Evans & Co
Attys.

UNITED STATES PATENT OFFICE.

FREDERICK L. KIRKBRIDE, OF WYANDOTTE, KANSAS, ASSIGNOR OF TWO-THIRDS TO ROBERT H. DRENNON AND WILLIAM C. DUVALL, BOTH OF KANSAS CITY, MISSOURI.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 279,255, dated June 12, 1883.

Application filed March 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK L. KIRKBRIDE, of Wyandotte, in the county of Wyandotte and State of Kansas, have invented a new and useful Improvement in Doors for Grain-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents the side elevation of a grain-car with my improved door in position. Fig. 2 shows the inside of the car with the door raised and partially moved to one side. Fig. 3 is a section through *x x* of Fig. 1. Fig. 4 is a section through *y y* of Fig. 2. Fig. 5 are details to be referred to. Fig. 6 is a horizontal section, showing to the eye, looking up, the under side of the rail D, a space being left at the left to permit the hanger C to pass.

My invention relates to the doors of railway-cars for transporting grain, and the object is to produce a door that can be easily handled, and when closed cannot possibly be opened by the motion or jostling of the cars. It consists in the novel combinations of devices hereinafter explained and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents a grain-car, and B the door. This door should be made of a double thickness of lumber, with the lumber running in different directions to give it brace, strength, and tightness. The upper and lower edges of the door are also provided with the metal guards *b b* for their protection. At the center of the lower edge of the door I secure the metal lift *b'*, into which may be introduced the end of a lever-bar for raising or lifting the door against the pressure of the grain on the inside. On the inner face of the door I secure the metal hanger C, which, when the door is raised, catches on an upper metal track, D, along which it slides, and supports the free side of the door as the door is moved back within the car.

On each side of the doorway I secure a metal guide, E, shaped as shown in Figs. 3 and 4. These guides are rigidly secured to the door-frame, and between them moves the door as it is raised or lowered, it being wholly between the jambs, and not, as usual, applied to the inside face. One of these guides is slotted to allow the door to pass through it when being moved back, as shown in Fig. 2. The upper portion, *e*, of the outside flanges of these guides is curved inward toward the top for the purpose of guiding the upper portion of the door inward in order to bring the hanger into position to move onto the metal track D as the door is moved to one side, and to bring the door itself within the body of the car, so that it can be moved back out of the way. A lug or stop, F, on the inside of the car arrests the side movement of the door at the proper moment.

On each side of the door-frame, and on the outside, at the top of the door, I secure fastenings inclosed within a casing, F. This casing I make about two inches wide and about nine inches long, more or less, and provide it with lugs *f* on its back, which are let into the door-frame to prevent it from slipping from its place. Inside of this casing, and on the lower end thereof, I secure a pivoted dog, G, as shown in Fig. 5, which catches on the door B when down in position. Above this dog I arrange a sliding or adjustable wedge-shaped block, H, slotted as shown in Fig. 5, which drops down between the dog and the outer edge of the casing F, and locks the door against any possibility of accidental opening from the motion of the car. When the door is to be opened, the block H is raised, the dog drawn back, and the wedge allowed to fall on the opposite side of the dog, which holds the dog out of the way until it is again desired to secure the door down.

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

1. In a grain-car, the door B, provided with the hanger C, in combination with the guides E, having the curved portion *e*, and the track D, all constructed and arranged to operate substantially as and for the purpose set forth.

2. In a grain-car, the door B, in combination with the guides E, having the curved portion *e*, substantially as and for the purpose set forth.

3. The casing F, provided with the lugs *f*,

in combination with the pivoted dog G and adjustable wedge-block H, all constructed to operate substantially as and for the purpose set forth.

4. In a grain-car, the door B, provided with the hanger C, in combination with the track D, guides E, casing F, dog G, and wedge-block H, all constructed to operate substantially as and for the purpose set forth.

FREDERICK L. KIRKBRIDE.

Witnesses:
JAMES R. WADDILL,
DANIEL B. HOLMES.