A. E. DERBYSHIRE.

BOX CAR DOOR.

APPLICATION FILED APR. 3, 1917.

1,300,130.

Patented Apr. 8, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

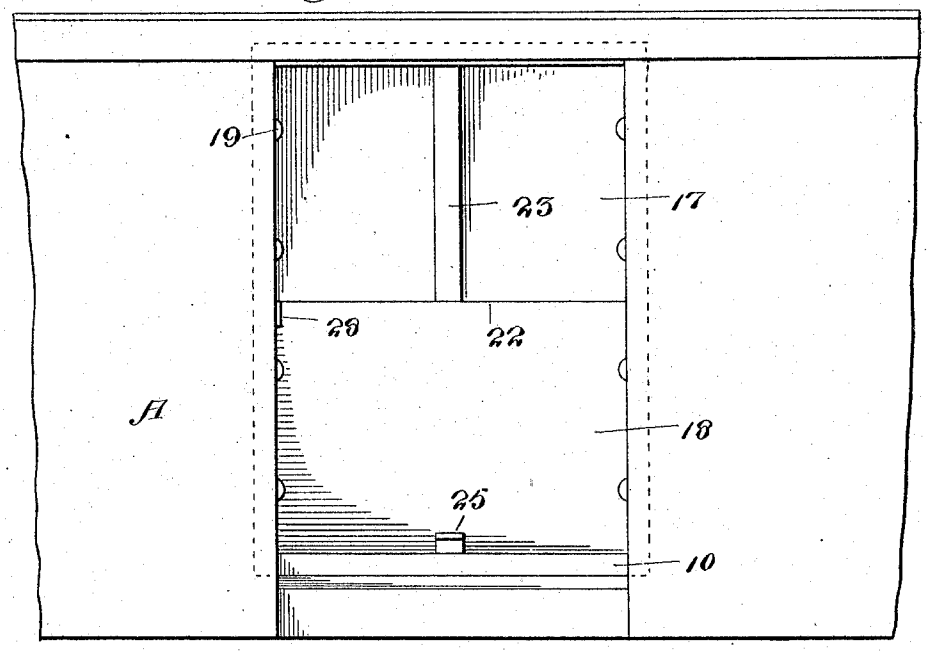


Fig. 3.

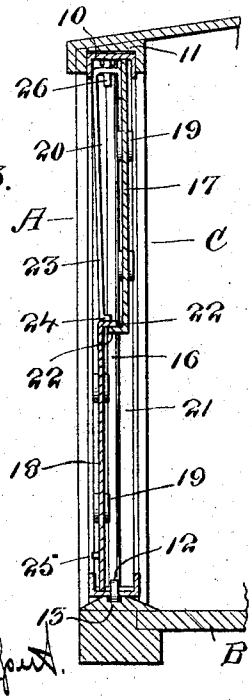


Fig. 5.

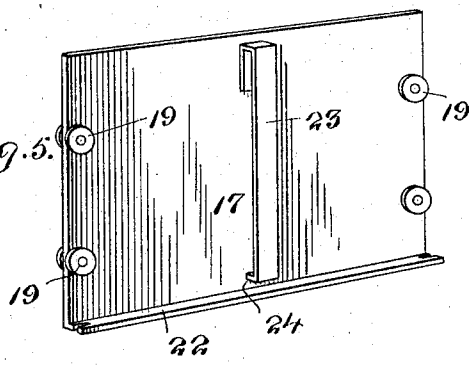
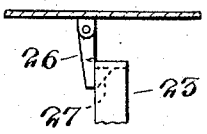


Fig. 7.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

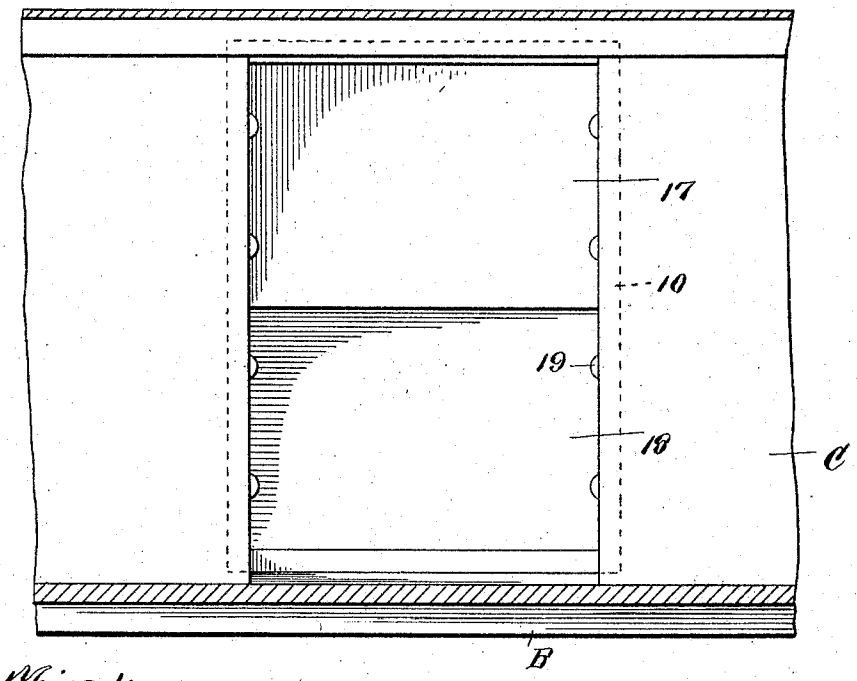


Fig. 4.

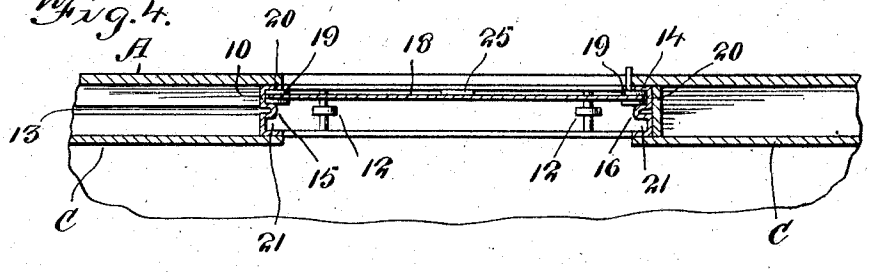
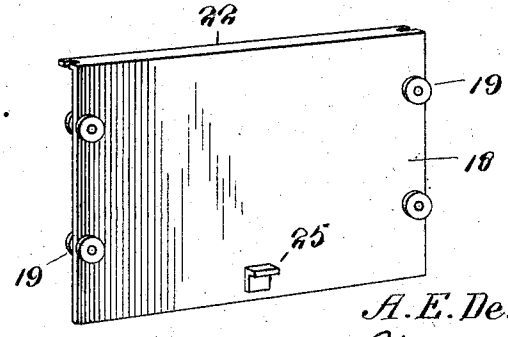


Fig. 6.



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UNITED STATES PATENT OFFICE.

ALFRED E. DERBYSHIRE, OF LANSING, KANSAS.

BOX-CAR DOOR.

1,300,130. Specification of Letters Patent. Patented Apr. 8, 1919.

Application filed April 3, 1917. Serial No. 159,539.

To all whom it may concern:

Be it known that I, ALFRED E. DERBYSHIRE, a citizen of the United States, residing at Lansing, in the county of Leavenworth and State of Kansas, have invented new and useful Improvements in Box-Car Doors, of which the following is a specification.

This invention relates to doors for freight or box cars and is so constructed as to permit of its use by cars handling grain or other freight, the door being constructed in a manner to permit of its being entirely moved to one side after the manner of the ordinary sliding doors of freight cars.

The primary object of the invention is the construction of a door as above set forth which will prevent the loss of the same by being blown from the car, or from side swiping or any other accidental or unauthorized removal.

A further object of the invention is to provide a door which will resist the pressure of grain or other freight or commodities being handled, the door also being constructed in a manner to render it water proof.

A still further object of the invention is the provision of a door in which the sections will be automatically opened and held in either open or closed position, thereby facilitating the handling of freight and obviating the annoyances incident to sections accidentally falling from their adjusted positions.

The construction above described will eliminate the necessity of temporary wooden grain doors such as now in general use and when applied in sections to the side of the car may be used for the purpose of a convertible door for the handling of general freight.

With the above and other objects in view the invention consists of the following novel combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings; in which—

Figure 1 is an outside elevation of a portion of a freight car having the improved door applied thereto;

Fig. 2 is an inside elevation of the same;

Fig. 3 is a vertical central sectional view through the door;

Fig. 4 is a horizontal sectional view through the upper section, the sliding frame and the door frame;

Fig. 5 is a detailed perspective view of the upper section removed;

Fig. 6 is a similar view of the lower section; and

Fig. 7 is a detailed view illustrating the manner of holding the upper section in position when the lower section is raised.

Referring to the drawings in detail the side of the car is designated at A, and the bottom at B. The car herein shown is of the metal type and consists of an outer casing and an inner sealing or lining C.

The improved door includes the sliding frame 10, which is adapted to operate within a groove 11 provided over the upper portion of the door opening. The lower part of this frame is provided with rollers 12, which are adapted to operate in a groove 13 formed in the sill or threshold of the door. The grooves 11 and 13 extend within the pocket formed by the side of the car A and the lining C, in order that the frame 10 may be moved entirely to one side of the door opening. The edge of the door opening opposite the pocket is formed with a groove 14 to receive the front edge of the sliding frame in order to effect the tight juncture with the frame of the car when the same is closed.

The sliding frame 10 is provided with vertical side parting beads 15 and 16, for the purpose of separating upper and lower sections 17 and 18 respectively. These sections are provided with rollers 19 to provide for the easy operation thereof.

The sections 17 and 18 are adapted to enter grooves 20 and 21 formed upon each side of the beads 15 and 16 of the frame 10, the said sections being provided with inturned edges 22 which act with the grooves 20 and 21 to serve to prevent the entrance of the weather within the car. The upper section 17 is provided with a spring arm 23, the said arm being slightly offset from the base section and having its free end formed with an inturned portion 24, which is adapted to engage the upper edge 22 of the section 18 and act to hold the said section in its lower or closed position. The said section 18 carries a lug 25, which when the section is raised is adapted to engage the portion 24 of the spring arm 23 and hold the section in its raised or open position. For the purpose of holding the section 17 raised when the section 18 is also raised, the top of the frame 10 is provided with a

grooved latch 26, the said latch being located in the path of the spring arm 23 and being provided with a beveled head 27, so that when engaged by the arm 23 it will be forced to one side to permit the passage of the same. After the arm 23 has passed a sufficient distance the latch 26 will swing into the path of the arm and hold the section 17 up.

The frame 10 is provided with a handle 28 by means of which it is moved to open or close the door, the said handle also acting as a stop to the outward movement of the said door. The lug 25 also provides a convenient means for prying the door open should the force of the grain or other material within the car resist such opening. The sill or threshold of the door, in which is formed the groove 13, is beveled as shown to facilitate the loading and unloading of the car.

From the foregoing description when taken in connection with the accompanying drawings, it will be seen that the invention provides a convenient and easily operated weather proof door, which may be used either for the hadling of grain or ordinary freight. It will also be seen that the construction of the door is of a simple character, thereby, insuring its easy and positive operation.

Any suitable means may be provided for sealing the door.

Having described the invention, what I claim is:

A car door comprising a horizontally sliding frame, a door mounted for vertical sliding movement therein, said door including upper and lower sections, a vertically disposed spring arm having one end secured near the upper edge of the upper section and its lower end formed with an inturned extremity for engagement with the upper edge of the lower section when the latter is closed and a lug carried by the lower section and adapted to engage the inturned extremity of the spring arm to hold the lower section open.

In testimony whereof I affix my signature.

ALFRED E. DERBYSHIRE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."