

No. 817,983.

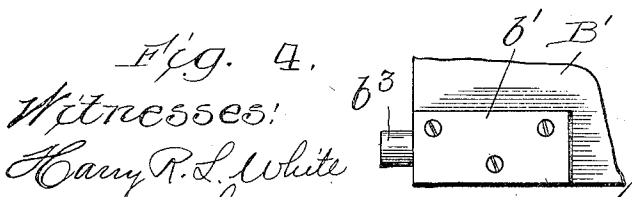
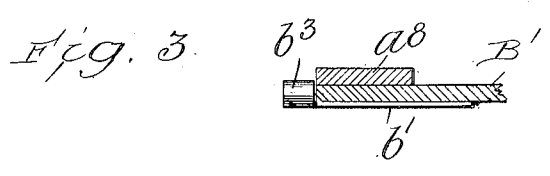
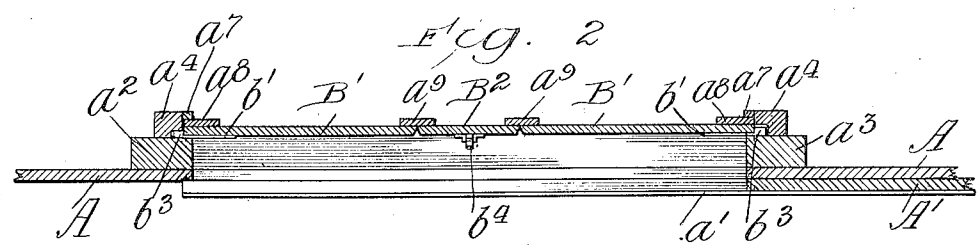
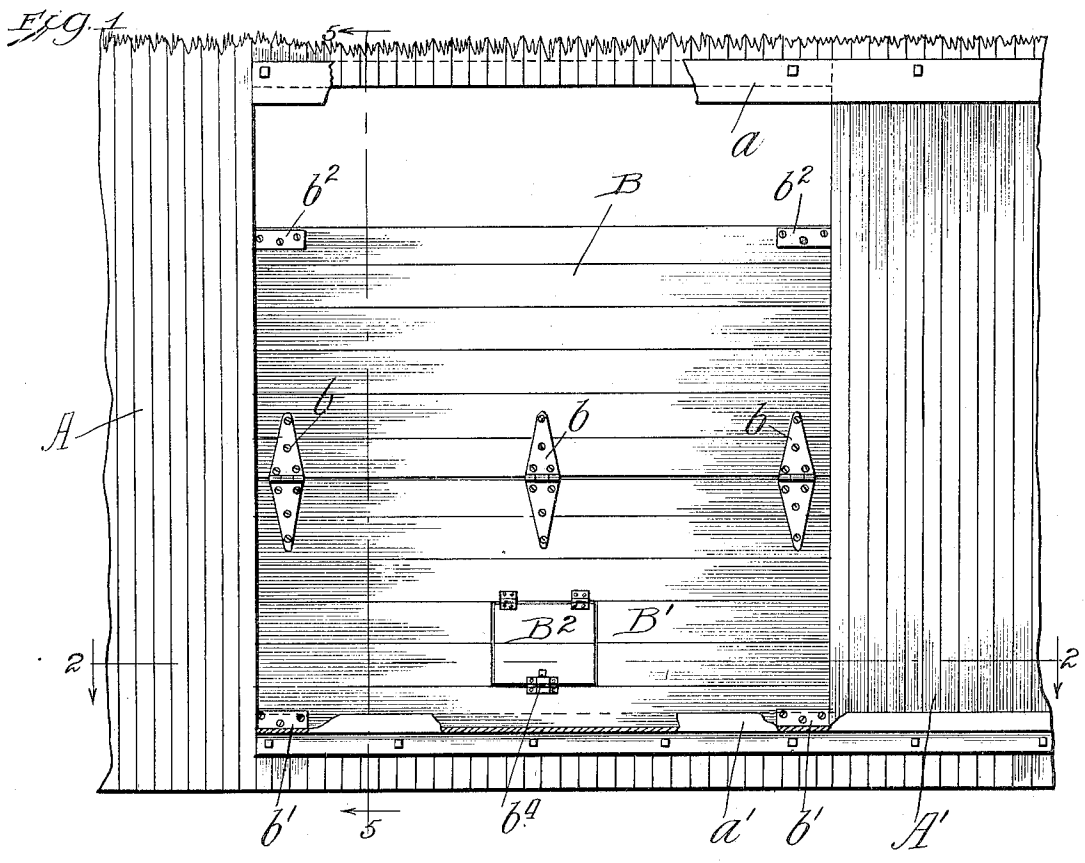
PATENTED APR. 17, 1906.

E. J. NOBLETT.

GRAIN DOOR FOR RAILWAY CARS.

APPLICATION FILED MAR. 25, 1905.

3 SHEETS--SHEET 1.



Witnesses:
Harry R. L. White
Ray White.

Inventor
Edward J. Noblett
By Charles H. Hill, Atty.

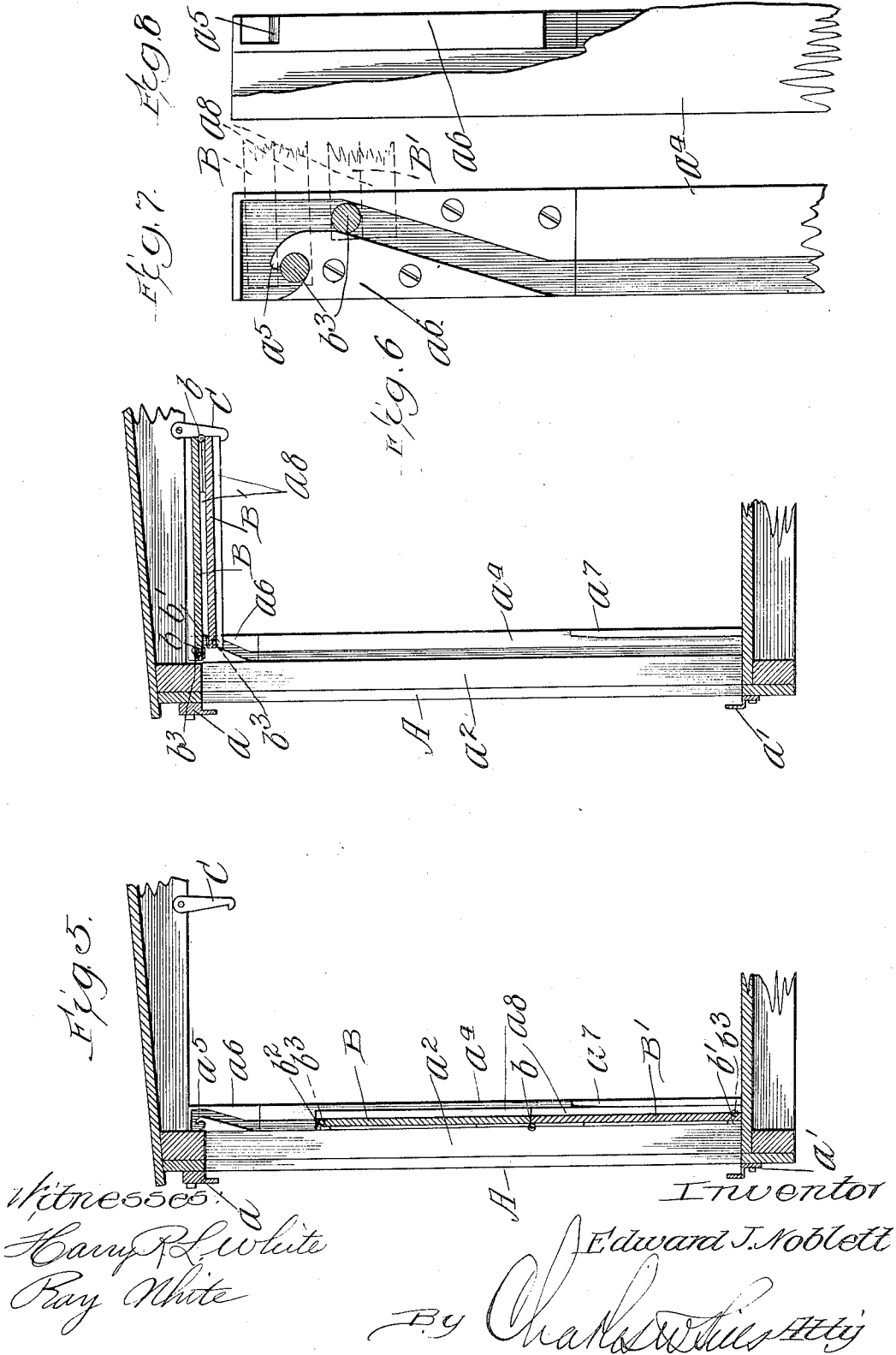
No. 817,983.

PATENTED APR. 17, 1906.

E. J. NOBLETT.
GRAIN DOOR FOR RAILWAY CARS.

APPLICATION FILED MAR. 25, 1905.

3 SHEETS—SHEET 2



No. 817,983.

PATENTED APR. 17, 1906.

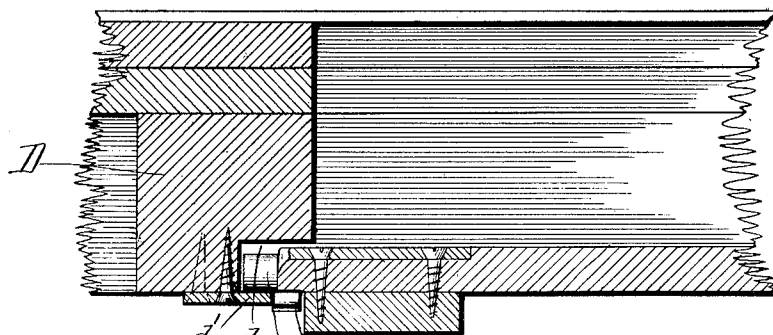
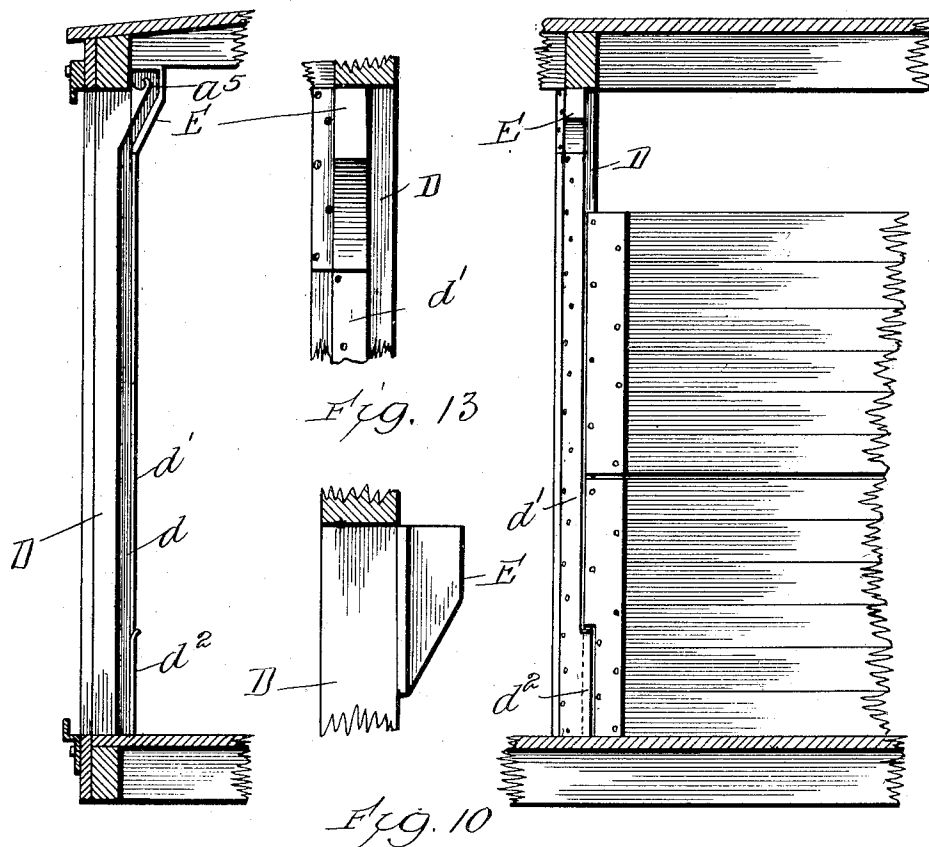
E. J. NOBLETT.
GRAIN DOOR FOR RAILWAY CARS.

APPLICATION FILED MAR. 25, 1905.

3 SHEETS—SHEET 3.

Fig. 11 . Fig. 12

Fig. 9



Witnesses: d d
Harry R. White b³ d²
Ray White.

Inventor.

Edward J. Noblett.

By Charles H. Hill, Atty.

UNITED STATES PATENT OFFICE.

EDWARD J. NOBLETT, OF CHICAGO, ILLINOIS.

GRAIN-DOOR FOR RAILWAY-CARS.

No. 817,983.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed March 25, 1905. Serial No. 251,957.

To all whom it may concern:

Be it known that I, EDWARD J. NOBLETT, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Grain-Doors for Railway-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to interior grain-doors for railway-cars. Heretofore it has frequently been found difficult to operate grain-doors after the loaded car has reached its destination, owing to the grain jamming or settling about the door by the constant vibration of the car when in motion. In consequence such doors are usually short-lived, rarely serving for more than two or three trips before destroyed from the efforts of operators to open the same.

The object of this invention is to afford a cheap, simple, and durable grain-door of the class described so constructed as not likely to jam and adapted when not in use to be folded up against the roof of the car out of the way of freight of any other kind it may be desired to ship.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a fragmentary side elevation of a car, showing the grain-door closed. Fig. 2 is a section taken on line 2-2 of Fig. 1. Fig. 3 is an enlarged fragmentary horizontal section in detail, illustrating the guide-pins for the door. Fig. 4 is an inner face view of the same. Fig. 5 is a section taken on line 5-5 of Fig. 1. Fig. 6 is a similar view showing the door open. Fig. 7 is an enlarged inner face view of the guides. Fig. 8 is an edge view of the same. Figs. 9 and 10 are respectively a fragmentary inner face view and an enlarged horizontal section of a construction embodying my invention. Figs. 11, 12, and 13 are fragmentary details of the same.

As shown in the drawings, A indicates a box-car having in the side thereof the usual door-opening, having horizontal ways a a' above and below the same, respectively, on the outer side, in which slides the horizontally-movable door A' on the outside of the car, as is usual. Within the car and rigidly

secured on the inner face of the jambs a^3 and a^3 and set back slightly from the inner edge of the same, as shown in Fig. 2, are vertical guides a^4 , each of which comprises a strip of suitable thickness rabbeted on its inner edge to afford a guideway, the outer side of which is afforded by the inner edges of the door-jamb, to near the top of the door, at which point the guideway inclines inwardly and upwardly and at the top of the doorway extends outwardly to or near the jamb, affording a chamber. Extending upwardly into said upper extension or chamber of the guide-groove is a reversely-curved hook or finger a^5 , affording a seat behind the same, as shown in Fig. 7. For convenience of construction a metallic casting a^6 may be set into the face of the guide at its upper end, in which the inclined guide-groove and upper chamber are provided. Said casting may be secured upon the guide in any suitable manner.

Positioned within the car and slidable vertically in said guide-grooves is the door, comprising, as shown, two horizontal and approximately equal sections B and B', which may be constructed of any suitable material and in any desired manner, but the inner or adjacent edges of which are hinged together by means of the strap-hinges b , upon the outer side thereof, to permit said door to fold or break inwardly. The outer face of said door-sections slides against the inner edges of the jamb, and on the said outer face, near the lower edge of the lower section and near the upper edge of the upper section, are rigidly secured metallic plates b^1 and b^2 , on the outer ends of each of which and projecting beyond and in alinement with the end of the door are the cylindric guide-pins b^3 , which, as shown, are shorter than the depth of the rabbet and serve to hold the bottom and the top of the door to the guides. On the inner edge of each of the guide-strips a^4 , near the bottom of the same, is provided a guide or cleat a^7 , the upper end of which extends to a point below the hinges connecting the door-sections when the door is closed and which, as shown, engages over the transverse batten a^8 at each end of the lower door-section. As shown, said lower door-section is provided near its middle, on the inner side thereof, with battens a^9 , and hinged at its upper edge in a complemental aperture in bottom of said lower door-section is a small chute-door B², provided with a suitable latch b^4 at its lower

edge, which acts to hold the same normally closed.

The operation is as follows: The doors are of course closed before the car is filled with grain and occupy the position shown in Fig. 1, with the outer face of the door at its ends engaged against the inner face of the jamb and with the door B² in the lower section closed. Inasmuch as the door fits closely between the guides a⁴ there is little opportunity to jam in the guide-groove, and should grain find its way therein it would be of slight importance, owing to the fact that the guide-pins b³ are smaller in size than the guide-grooves and of less length than the depth of said grooves. Thus when the door is forced upwardly the grain therein passes readily below said guide-pins, presenting no obstruction. When the car-door A' is unsealed and opened, the grain-chute is connected with the aperture through the lower section and the door B² is opened, permitting the grain in the central part of the car to flow outwardly through said chute-door until the middle part of the car is nearly empty. After sufficient amount of grain has been removed from the middle of the car to avoid waste in opening the grain-door the operators push the door-sections B and B' upwardly until the guide-pins b³ at the upper edge of the upper door-section reach the upper end of the guide-grooves, at which point the door breaks inwardly at its middle, as shown in Fig. 6, and as the lower section is pushed upwardly to its highest point the guide-pins of the upper sections move inwardly and engage over the fingers or hooks a⁵, as shown in Figs. 6 and 7. One or more latches C are supported in the roof of the car in position to engage the joint of the door-sections, as shown in Fig. 6, when the door is fully opened, and engaging beneath said joint the door is held supported in its fully-open position by the joint action of the rigid fingers or hooks a⁵ and said latches, which may be provided also, if preferred, in position to engage beneath each end of the lower door-section near the guides.

In the construction illustrated in Figs. 9 to 13, inclusive, the jambs D are each rabbeted on the inner side, as shown at d, and a strap d' of metal or other suitable material is screwed or otherwise rigidly secured on the face of said jamb, projecting over said rabbet, and affords the inner wall of a guide-groove, in which slide the guide pins or projections b³, as before described. At the top of the jamb, on the inner face thereof, is secured a bracket or casting E, which projects into the car and is screwed or bolted in place and affords a groove continuous with the groove in the jamb and at the top of which is provided an upwardly-directed curved finger a⁶ for the purpose before described. As shown, the strap d' is made wider at the bottom and pro-

jects farther into the groove and affords a guide d² for the door to prevent the joint breaking too soon when the door is operated. This construction is important, as it in no manner reduces the space available in the car for freight.

I claim as my invention—

1. A grain-door comprising door-sections hinged horizontally to fold inwardly, guide-pins at opposite edges of adjacent sections, extending longitudinally beyond the ends of the door, a vertical guide-strip adapted to receive said pins at each side the door and catches at the top of the opening one located at the guide-strip and the other secured to engage the fold of the door and support the door in its open position.

2. A grain-door comprising two centrally and horizontally hinged sections adapted to break inwardly, cylindric guide projections at the top of the upper and the bottom of the lower sections extending in alinement with and beyond the ends of the sections, vertically-grooved guides at each end of the opening in which said guide projections engage, an upwardly and outwardly curved finger at the upper end of each guide adapted to engage the guide projections of the upper sections and a catch or latch adapted to engage below the lower sections holding the door folded horizontally and fully opened.

3. The combination with a car and the door-jambs thereof, of a vertically-sliding door bearing at its ends against the inner faces of said jambs and hinged longitudinally near its middle to break inwardly, a grooved guide-strip secured on the inner face of each jamb, projections on each door-section remote from the hinges engaging in the guides, one or more latches at the top of the car and an upwardly and outwardly curved finger at the top of the guide-strip adapted to engage the guide projection of the upper door-section simultaneously with the engagement of said latch or latches beneath the folds of the lower section.

4. A device of the class described comprising a strip having a rabbeted edge, adapted to afford together with the door-jambs of the car, a guide-groove, a metallic casting fitted to the upper end of said strip and provided with an inwardly and upwardly inclined groove registering at its lower end with the groove in said strip and enlarged at its upper end transversely, an inwardly and upwardly directed finger projecting into the groove in said casting and affording a rigid catch, a horizontally-folding door adapted to slide in said groove, a guide-pin at the upper corner of said door adapted to engage said finger, a guide-pin at the lower corner of the door adapted to engage in said groove and a hook supported at the top of the car adapted to engage door at its joint when folded and support it in a horizontal position.

5. A grain-door comprising two horizontal sections hinged along their meeting edges to break inwardly, a door, opening centrally through the lower section near its bottom and hinged at its upper edge thereto, a latch-holding said door normally closed, cylindric pins projecting longitudinally beyond and in alignment with the lower edge of the lower section and the upper edge of the upper section, a grooved guide engaging said projection and a rigid outwardly and upwardly curved catch at the upper end of the grooved guide adapted to engage the pins of the upper door-section, a latch adapted to engage beneath the folded sections and together with the catch acting to support said door-sections in a horizontal position at the top of the door-opening and a vertical cleat on the inner face of each guide at the bottom thereof adapted to hold the door in a vertical position when closed.

6. The combination with a car, of a grain-door comprising sections hinged horizontally to break inwardly, pins projecting from the end of each section from the top of the upper and the bottom of the lower and adapted to engage in a grooved jamb, a plate on the jamb between which and the jamb the bottom of the door is held and means at the top of the car adapted to hold the door in its open position.

7. The combination with a car having rabbeted door-jambs, of a vertically-slidable door therein comprising horizontally-hinged sections, pins at the ends of the sections projecting into the rabbet, a hook at the top of the groove in each jamb adapted to engage the pins on the upper section and a latch in the car-roof adapted to support the fold of the door in horizontal position.

8. The combination with a car having side doors of jambs therefor rabbeted on the inner edge, a plate secured on the inner side of each jamb projecting by the edge thereof and forming with the rabbet a wall of a guide-groove, a vertically-sliding grain-door comprising a plurality of horizontally and inwardly folding hinged sections, pins on each end of the door-sections projecting into the grooves, a bracket at the top of each jamb, a finger thereon adapted to engage the pin on the top door-section and means on the car-roof adapted to support the door horizontally when open.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

EDWARD J. NOBLETT.

Witnesses:

W. W. WITHEBURY,

H. S. RUDD.