No. 732,666. PATENTED JUNE 30, 1903.

S. A. VICKERS.

GRAIN CAR DOOR.

APPLICATION FILED NOV. 13, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

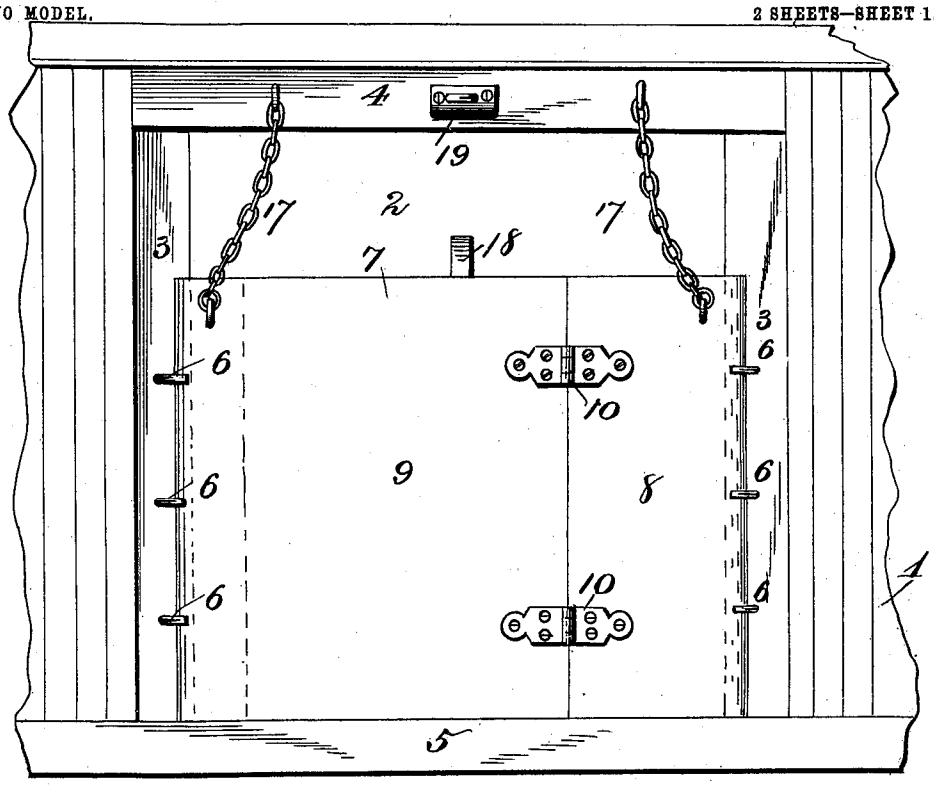
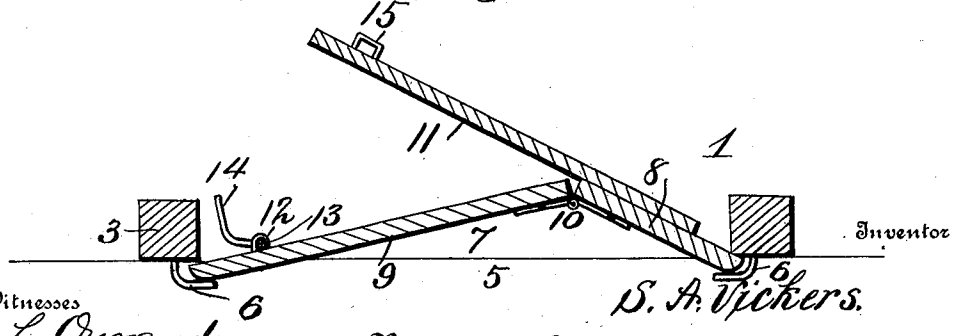


Fig. 1.

Fig. 3.



Witnesses
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[illegible]

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

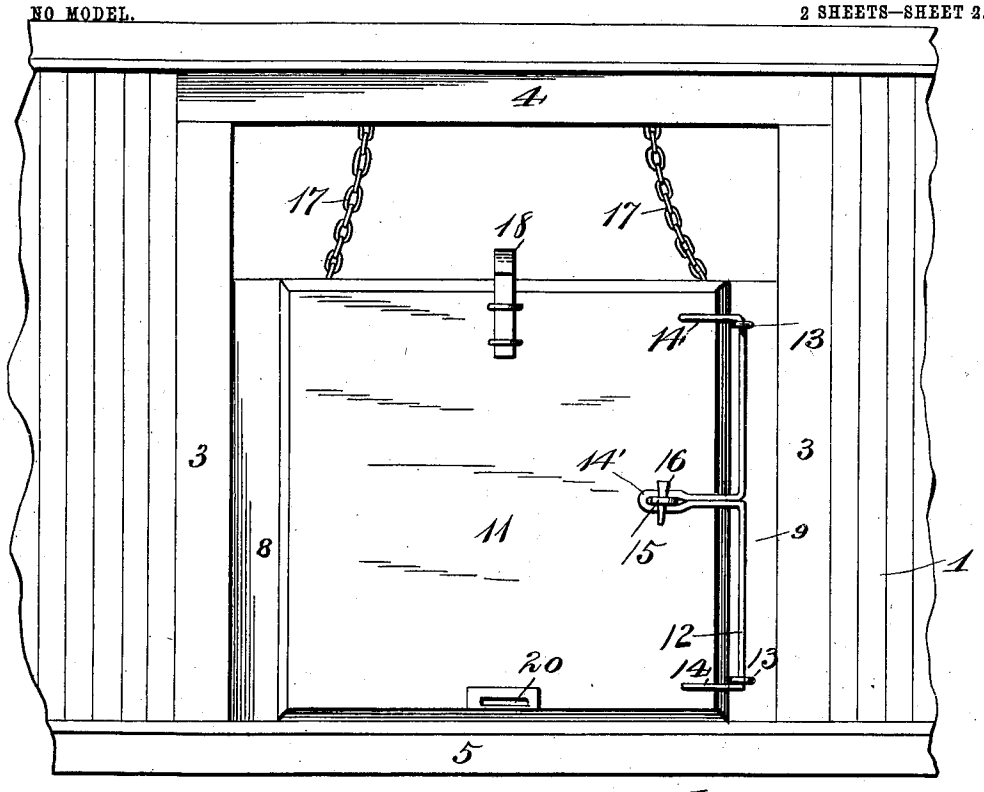
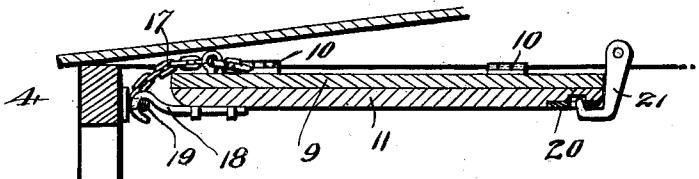


Fig. 2.



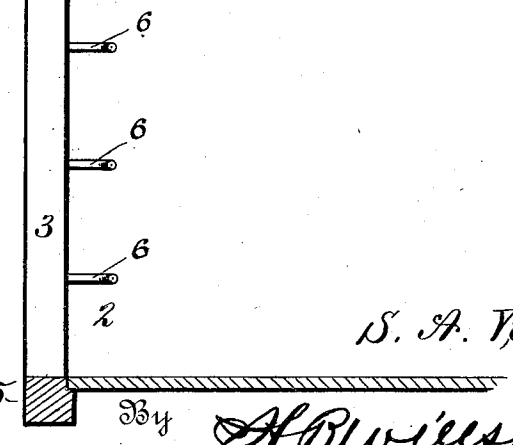


Fig. 4.

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No. 732,666. Patented June 30, 1903.

UNITED STATES PATENT OFFICE.

SAMUEL A. VICKERS, OF CHICAGO, ILLINOIS.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 732,666, dated June 30, 1903.

Application filed November 13, 1902. Serial No. 131,239. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL A. VICKERS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Grain-Car Doors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in grain-car doors.

The object is to provide a grain-car door which is simple of construction, strong, and durable, and is adapted to be controlled in such manner as to obviate the necessity of prying the door open, and which, further, embodies improved fastening means for holding it open and closed.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of the door as seen from the inside of the car. Fig. 2 is a similar view of the door as seen from the outside of the car. Fig. 3 is a horizontal section illustrating the manner in which the door opens. Fig. 4 is a vertical cross-section showing the door swung upward and inward to fully open the doorway.

Referring now more particularly to the drawings, the numeral 1 represents a grain-car having a door-opening 2 with posts or jambs 3 at opposite sides thereof, a cross-bar or lintel 4 above and a sill 5 below the same. Upon the inner faces of the side posts or jambs are arranged hooked guides 6, which are adapted to receive and engage the beveled side edges of the door 7.

The door comprises in its construction inner sections 8 and 9, the section 9 being preferably about twice the width of the section 8 and united thereto by hinges 10, so that in opening the door may break joint and move outwardly, as indicated in Fig. 3, to release the beveled edges thereof from the hooked guides 6, and so that a reverse inward movement of the said door-sections on said hinges will bring the sections 8 and 9 in alinement and again force the beveled edges of the door into engagement with the said hooked guides.

The door is reinforced upon its outer side by a board or section 11, which is rigidly attached at one side to the section 8 and extends over upon the section 9, so as to close the joint between said sections 8 and 9 and prevent the escape of grain from the car. The sections 8 and 9 are adapted to be held in alinement to maintain the door in closed position by a spring latch or fastening consisting of a rod 12, mounted to oscillate in bearings 13 on the outer side of the free end of the section 9 and provided with hooked end projections 14 to engage the outer or free end of the section 11 and with a hasp 14′, adapted to engage a staple 15 on said section 11. When the said fastening is engaged with the section 11, a pin 16 applied to the latter is inserted in the staple to hold the hasp against displacement, and thus prevent the door from opening on its hinges.

The door is suspended from the lintel or cross-bar of the door-frame by chains 17, which are of such length as to permit the door to rest squarely on the sill 5 and serve to prevent the door from falling when open and the load is being discharged, and also to prevent the door from being displaced and falling from the car at any time. The upper edge of the door is provided with a hook 18 to engage the staple 19 on the lintel of the door-frame, whereby the door may be hung suspended when not in use.

The section 11 of the door carries or is provided with a socket 20, adapted to engage a gravity-latch 21 on the ceiling or top of the car, so as to enable the door to be swung inward and suspended in the manner shown in Fig. 4 to fully open or clear the doorway to allow the free discharge of the grain.

In operation when the car is loaded and the door closed said door is held from upward movement by its own weight and from outward movement by the posts or jambs 3 and from sidewise movement by the hooked guides, which will, however, permit it to be adjusted vertically to bring the hook 18 upon the section 11 into engagement with the staple 19 on the lintel of the door-frame to hold the door suspended and part way open to per-

mit access through the lower portion of the doorway to the car. When it is desired to discharge the grain, the fastening-pin 16 is disengaged from the staple 15 on the section 11 and the fastening 14 thrown back, so as to discharge the section 9 from the section 11, whereupon the pressure of the grain upon the sections 8 and 9 will cause said sections to break joint and swing outwardly on their hinges, allowing a portion of the grain to discharge, when the door is swung up and out of the way of the shovel-ropes and held suspended by engaging the socket 20 with the gravity-latch 21.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of the invention will be readily understood, and it will be seen that a construction of door is provided which is simple, strong, and durable and is adapted to be readily opened without the necessity of exerting a prying action. Hence breakage of the door, so common where a pinch-bar or prying-tool is employed, is thereby obviated. It will further be observed that by constructing the door in sections in the manner shown and described an exceedingly strong and durable structure is provided and leakage at the joint between the hinged sections of the door prevented, as well as binding caused by the access of grain to the joint. The form of fastening for connecting the hinged sections to the outer section of the door prevents the latter from bulging and maintains the edges of the door in firm engagement with the guide-hooks.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

In a grain-car door, the combination with a car having a doorway provided with guides upon the opposite sides thereof, of a door comprising inner sections hinged to break joint and swing outwardly, and an outer section secured to one of said inner sections, and overlapping the other inner section, and a fastening comprising a rod journaled upon the free end of the latter-named inner section, and provided with hooks to engage the free end of the outer section, and means for locking said fastening to the outer section to hold the hooks in engaging position, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SAMUEL A. VICKERS.

Witnesses:
REES L. PHELPS,
J. F. TULLY.