T. C. CHAMBERS.

DOOR FOR GRAIN CARS.

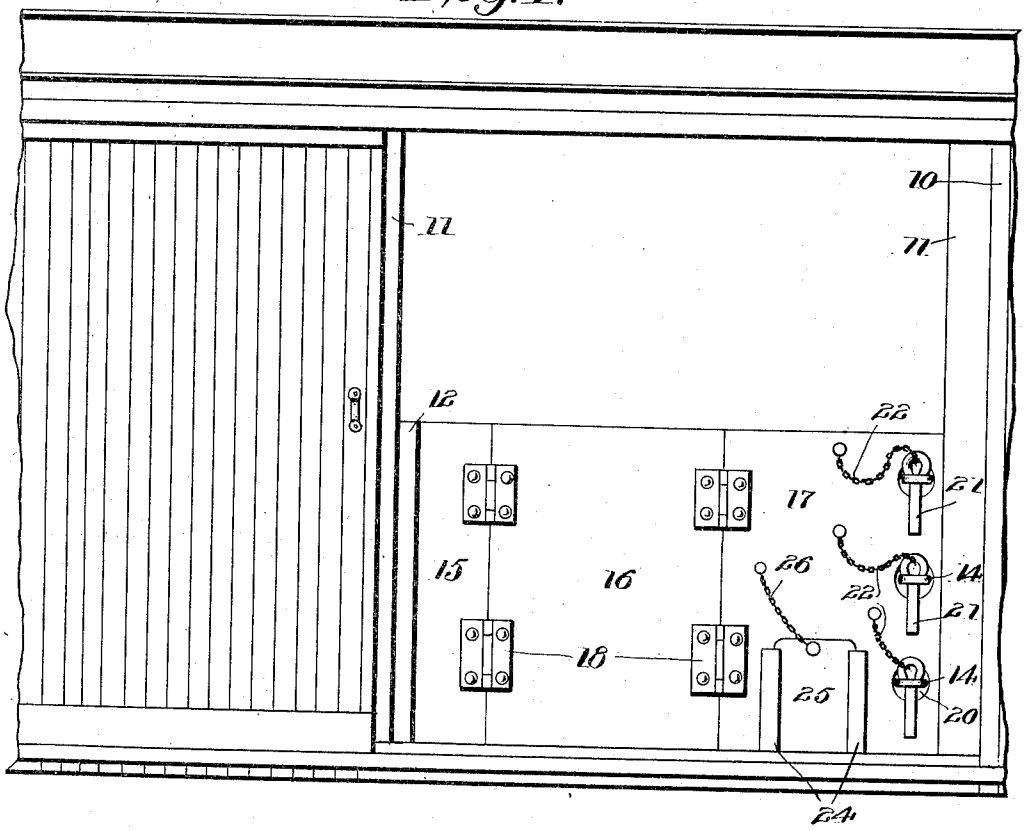
APPLICATION FILED DEC. 2, 1911.

1,042,891.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



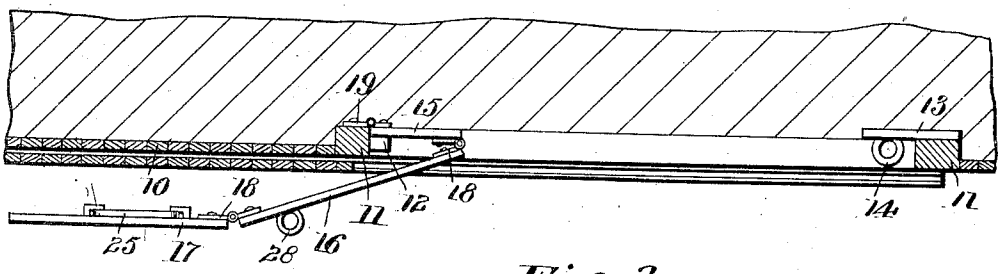


Fig. 2.

WITNESSES

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Fig. 3.

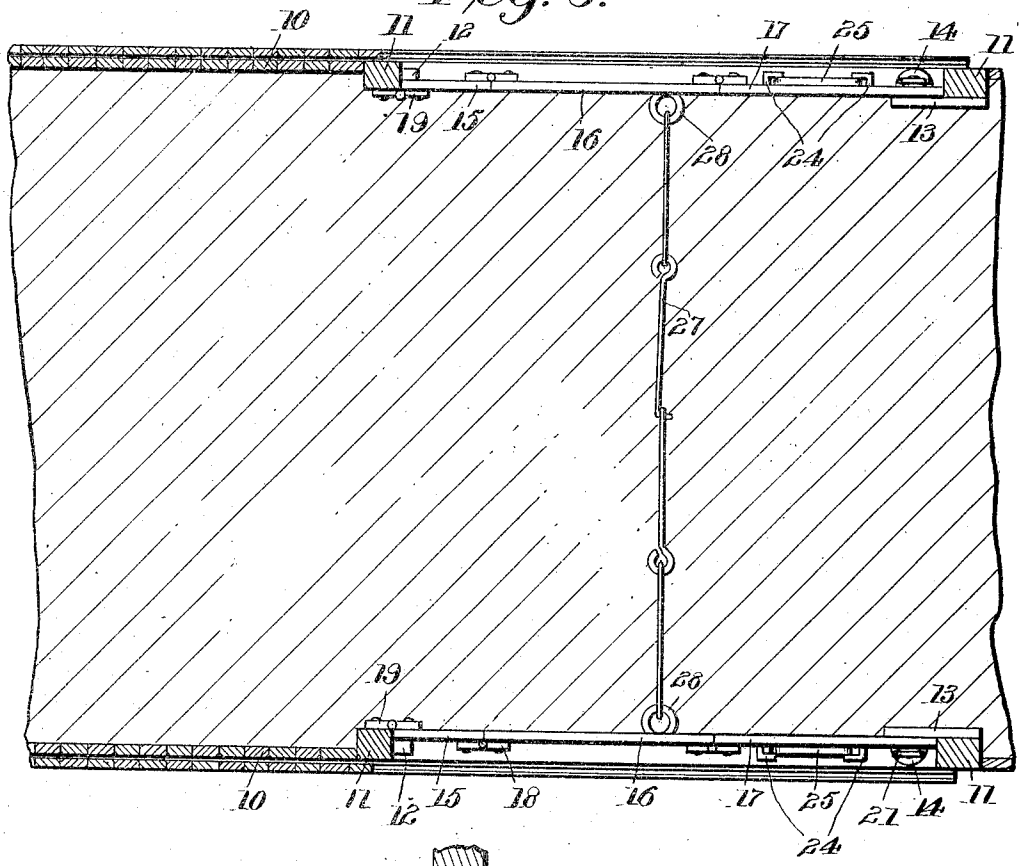
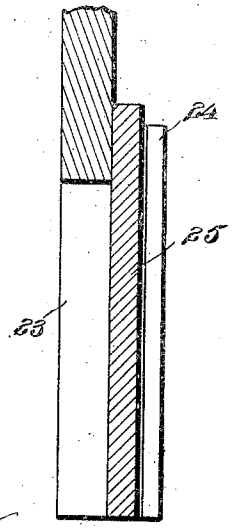


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS C. CHAMBERS, OF MANGUM, OKLAHOMA.

DOOR FOR GRAIN-CARS.

1,042,891. Specification of Letters Patent. Patented Oct. 29, 1912.

Application filed December 2, 1911. Serial No. 663,638.

To all whom it may concern:

Be it known that I, THOMAS C. CHAMBERS, citizen of the United States, residing at Mangum, in the county of Greer and State of Oklahoma, have invented certain new and useful Improvements in Doors for Grain-Cars, of which the following is a specification.

This invention relates to doors for grain cars.

One object is to provide a folding door for grain cars arranged so that it may be folded into the car when the car is empty and so that it may be folded outward against the outside of the car when it is desired to remove grain or other commodity from the car, the door being formed preferably of sections hinged together so that the opening of the door outwardly will not be interfered with by the elevator which carries the grain from the car.

Another object is to provide a door for grain cars embodying sections hingedly connected together so that the door may be opened and fitted into a small space between the outside of the car and the elevator with one of the sections provided with a gate adapted to be opened to relieve undue pressure from within the car on the door.

A still further object is to provide a grain car with doors, which may be folded inwardly or outwardly of the car and which when closing the door opening of the car may be connected together to sustain the pressure on the inside of the doors incident to the weight or quantity of the grain within the car.

With the above and other objects, in view, the present invention consists in the combination and arrangement of parts hereinafter more fully described, particularly pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that changes may be made in the form, proportion, size and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a side elevation of the invention with the door closed. Fig. 2 is a horizontal sectional view of one side of the car showing the door open. Fig. 3 is a horizontal sectional view through a portion of the car showing the doors closed and connected together. Fig. 4 is a sectional view taken vertically through the relief gate.

Referring now more particularly to the accompanying drawings, the reference character 10 indicates the sides of the car, each provided with a door frame 11, to provide door openings. Secured to opposite sides of the door frame 11 are door jambs 12 and 13, the door jamb 12 being secured within the edges of the frame of the door opening with the jamb 13 secured to the inner side of the corresponding door frame and extending inwardly of the door opening and provided with locking keepers 14 for a purpose presently explained.

Each door is composed of sections 15, 16 and 17, said sections being connected together on their outer faces by means of suitable hinges 18 with the section 15 hingedly connected by means of hinges 19 to the inner side edge of the door frame and with the section 15 of the door disposed normally against the jamb 12, when the door is closed. The section 17 of each door is provided with a plurality of openings 20 to aline with the keepers 14 so that the keepers 14 may pass through the openings 20 and receive the locking bolts 21, which are secured by means of chains or other suitable elements 22 to the section 17 of the door and through the instrumentality of which locking elements 22, the doors may be held against outward movement incident to pressure against the car.

To relieve undue or unnecessary pressure of grain against the doors, I provide one of the sections with an opening 23, and this opening is preferably formed in the section 17, of each door. On opposite sides of the opening 23, I preferably dispose suitable guide-ways 24 in which may slide a gate 25 which has secured to it a chain or other suitable element 26 secured to the section 17 so as to prevent displacement of the gate 25 when the latter is withdrawn from the guide-ways 24. By raising this gate 25, grain may fall from the car to the desired amount and for any desired purpose but preferably to relieve undue pressure of grain against the doors.

It will be clear from the accompanying drawings, how the doors are closed and fastened and when the doors are closed and it is desired to open the same it is simply necessary to remove the locking bolts 21 from engagement with the keepers 14.

The sections 16 and 17 may be maintained in alinement and both swung together on

the hinges 18 which connect the sections 15 and 16 together and after being swung open, these sections 16 and 17 of the doors may be thrown out of alinement so that the section 17 may be disposed parallel with the side of the car as indicated in Fig. 2. Obviously, as the sections 16 and 17 are swung on the hinges 18 which connect the sections 15 and 16, they may be folded, first folding the sections 17 toward the section 16. In any event and in view of the elevator (not shown) usually employed for conveying the grain from the cars, being rather close to the cars, it is preferred to fold the sections 16 and 17 with relation to each other and to shift them on the hinges 18 which connect the sections 16 and 17 in such a way that the doors as they are swung open may be caused to occupy very little space, for sometimes the space between the elevators and the cars is very small and this has been one serious objection to doors adapted to swing open toward the elevators. When the cars are emptied, the doors may be swung inwardly to occupy very small space by folding the sections 17 on the sections 16 and then swinging the sections 15 of each door on the hinges 19 so that the folded sections 16 and 17 may lie against the inside of the car against the side thereof.

Sometimes the pressure within the cars, due to the quantity of grain therein, induces considerable pressure, and if desired, I may connect opposite doors by means of suitable stays 27, preferably in the form of links and connected to eyes 28 secured to the inner faces of the doors, as will be apparent by reference to Fig. 3. Obviously more than one of these door-connection stays 27 may be used if desired.

It will thus be seen that I provide a comparatively simple, inexpensive, durable and efficient grain car door and one that may be readily folded inwardly or outwardly of the car to occupy very little space either inside or outside of the car.

What is claimed is:—

1. The combination of a car provided with a door opening, a door composed of sections hingedly connected together, means for hingedly connecting the sectional door at one side only, of the door opening, means whereby the opposite side of the sectional door may be fastened to the opposite side of the door frame opening, the section of the door adjacent the hinged connection with the door frame opening being narrower than the remaining sections with the remaining sections being of substantially the same width and hingedly connected so that the outermost of said remaining sections may be swung outwardly on the adjacent section and the said latter sections swung on the narrower section and, whereby the door may be swung from one side only of the door frame opening either inwardly of the car or outwardly along the outside of the car and occupy small space on the outside of the car.

2. The combination of a car provided with a door opening, door jambs secured to opposite sides of the door opening, a door which is composed of three sections, two of which are substantially the same width and hingedly connected together, the remaining section being comparatively narrow and hingedly connected at one side of the door opening adjacent one of said jambs and also hingedly connected to the innermost of said other two sections, the outermost one of said two sections having openings along its outer edge, elements secured adjacent the jamb opposite the one to which said narrow door section is hinged for projection through said openings, means carried by the outermost of said two sections for engagement with said elements to lock the door, the hinged connection between said two sections permitting the outermost section to be swung upon the innermost of said two sections with the hinged connection between the innermost of said two sections and with the narrow section permitting the door to be swung back outwardly of the car along the outer side of the latter with the hinged connection between said narrow section and the door frame opening permitting swinging movement of the door inwardly of the car.

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

THOMAS C. CHAMBERS.

Witnesses:

O. L. GIBBON,

CLYDE CHAMBERS.