

No. 878,019.

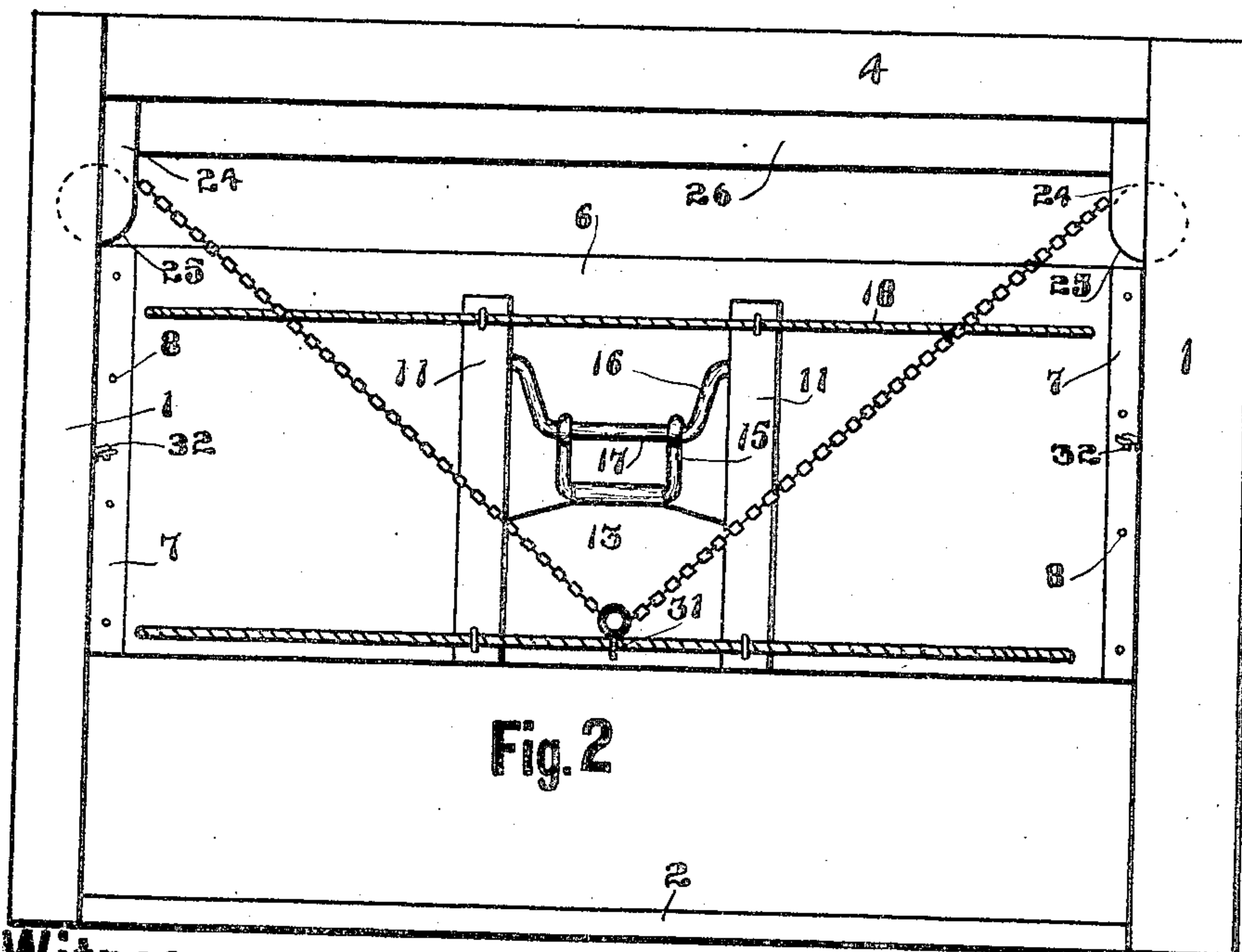
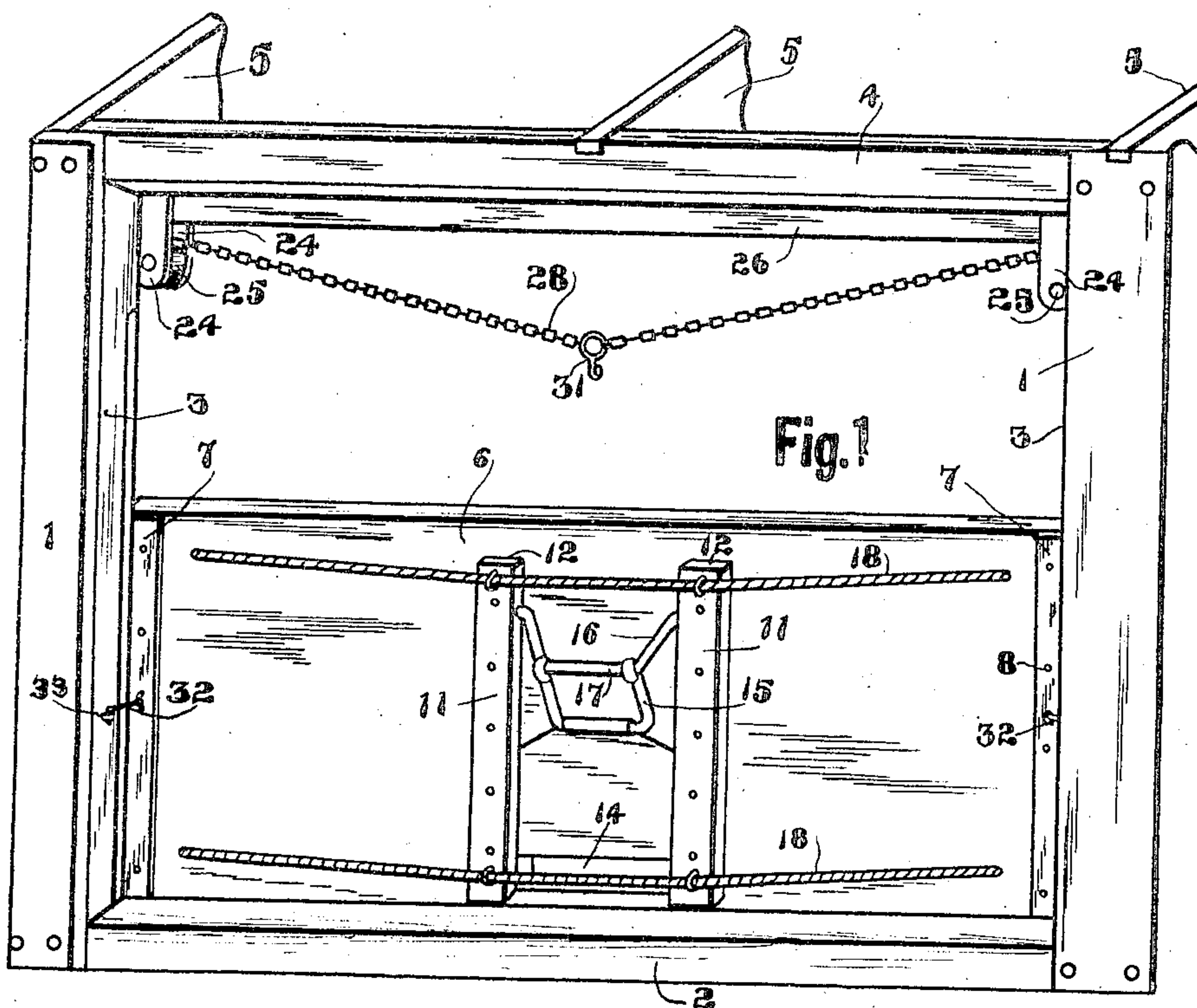
PATENTED FEB. 4, 1908.

M. REID.

GRAIN CAR DOOR.

APPLICATION FILED MAY 29, 1907.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

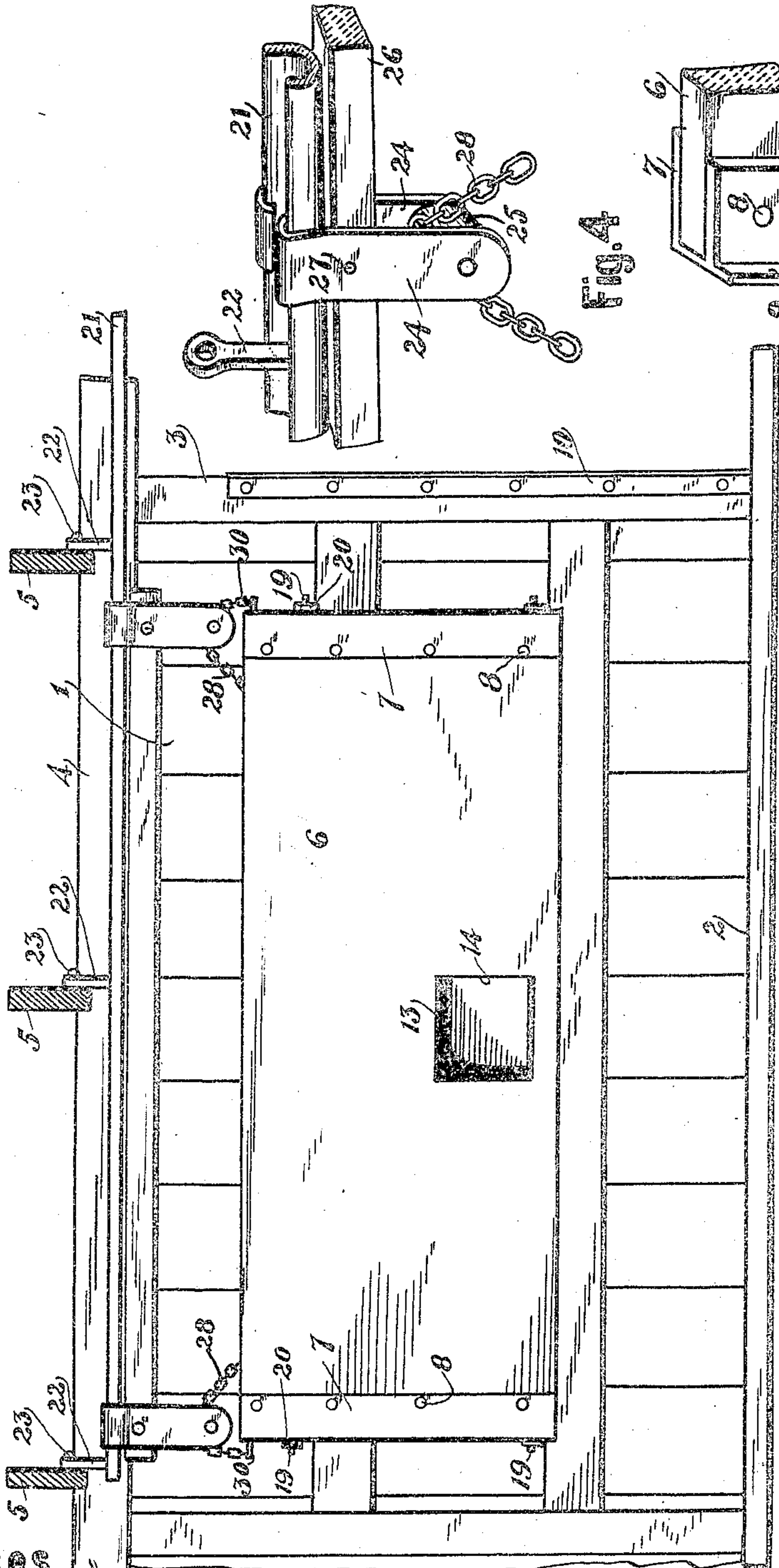


Fig. 3

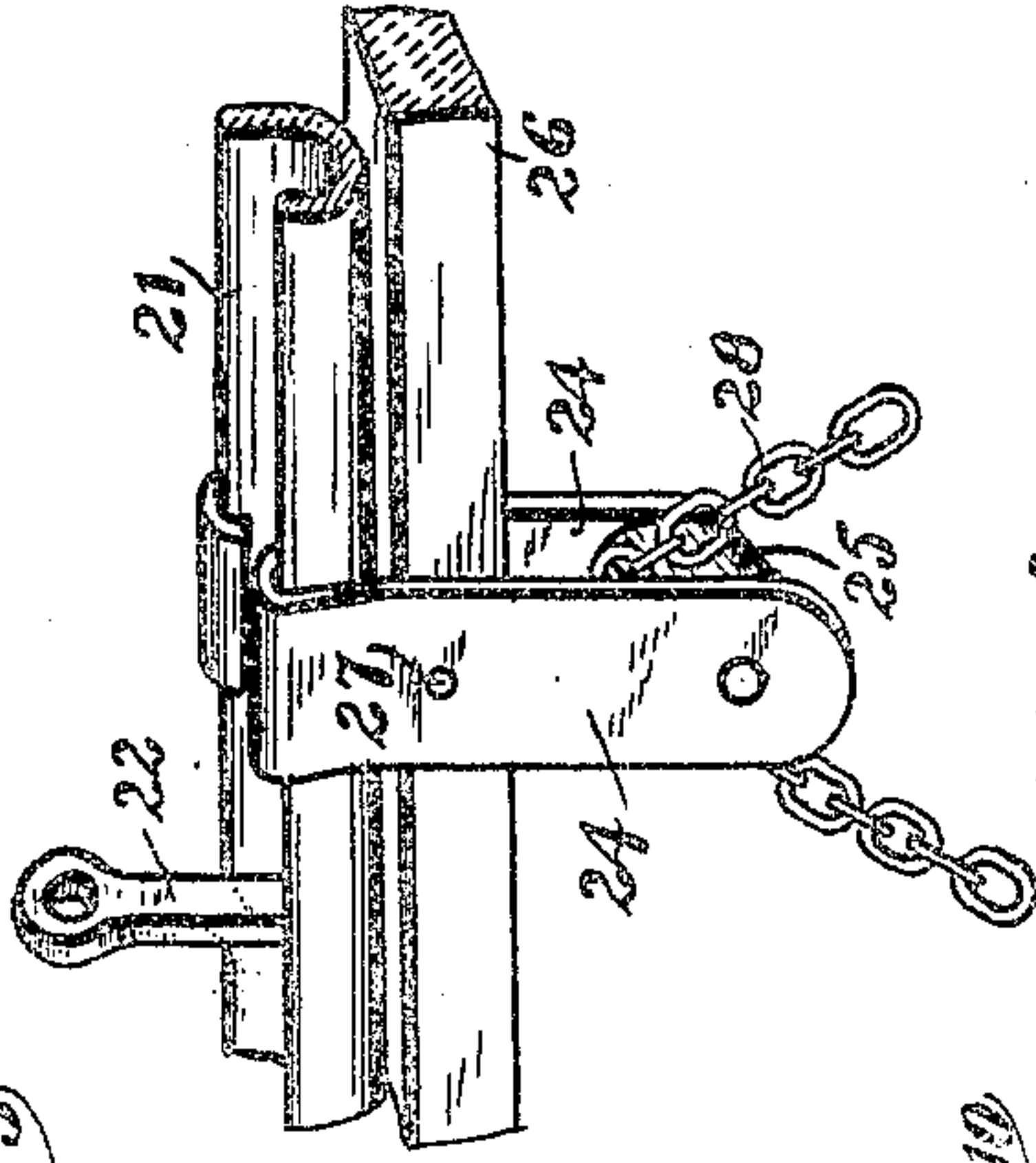


Fig. 4

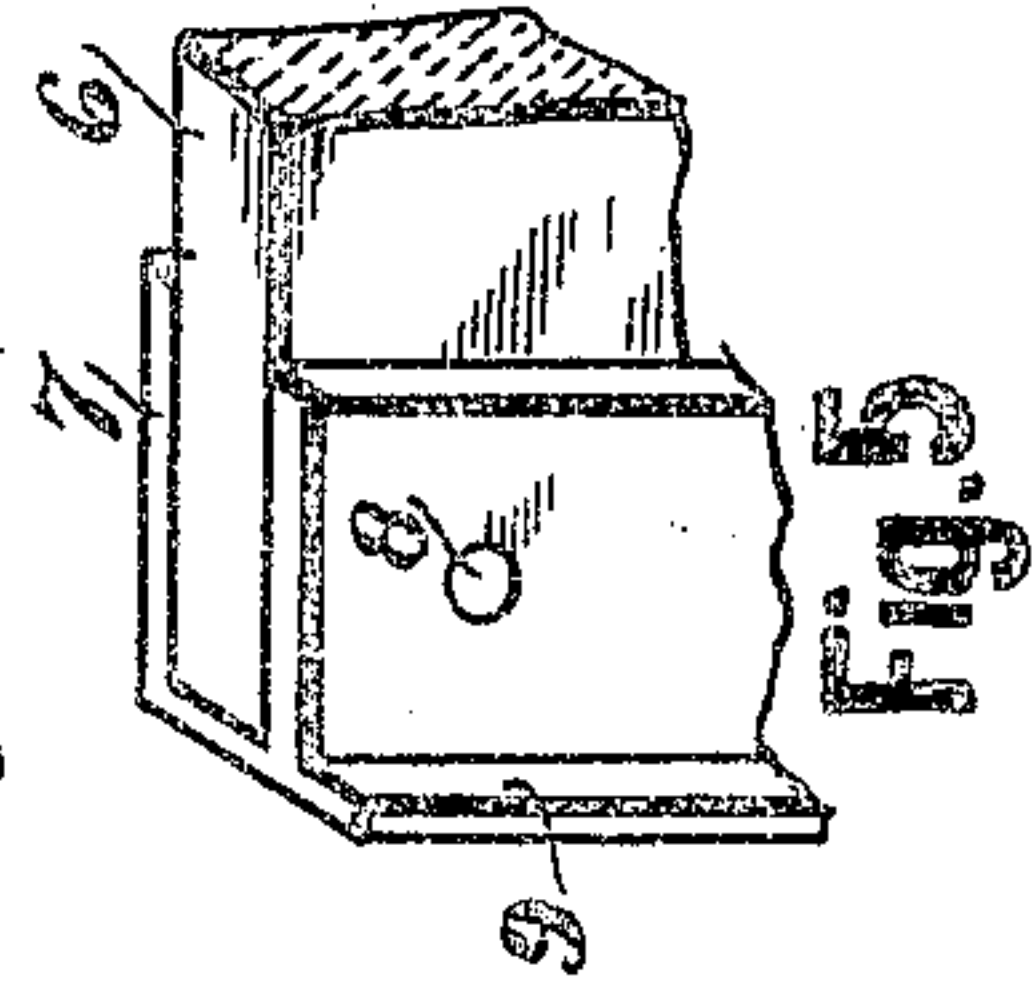


Fig. 5

Witnesses.
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3 SHEETS—SHEET 3.

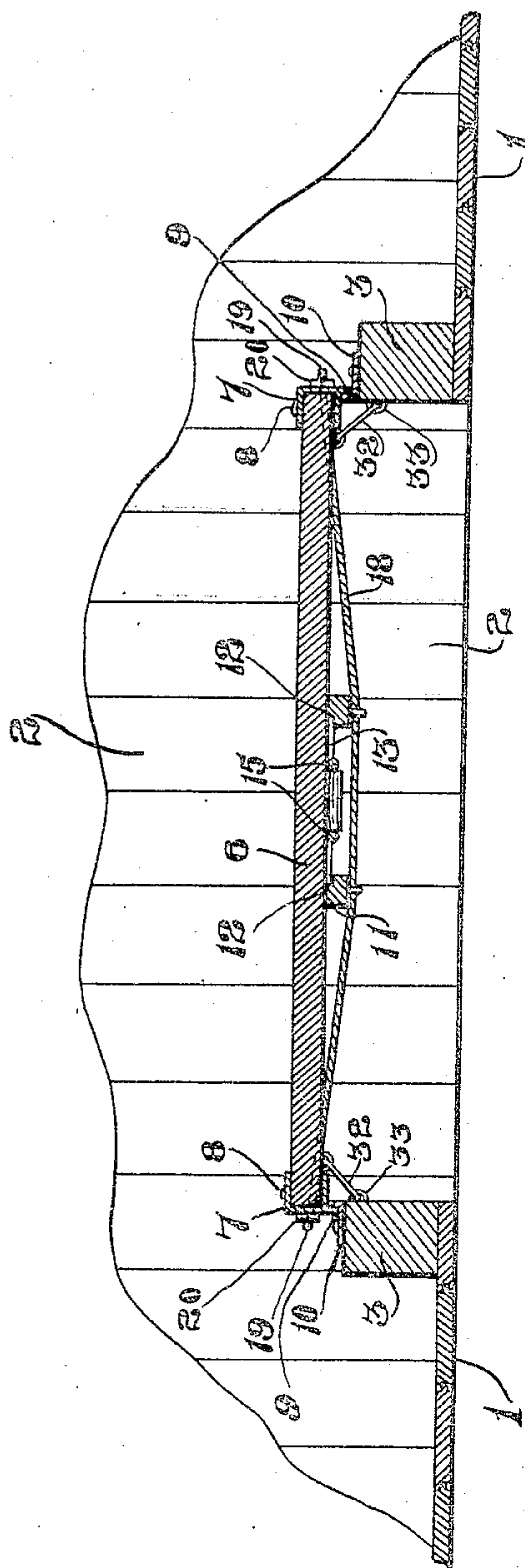


Fig. 6

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UNITED STATES PATENT OFFICE.

MATTHEW REID, OF SOMERSET, MANITOBA, CANADA.

GRAIN-CAR DOOR.

No. 878,019.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed May 29, 1907. Serial No. 376,226.

To all whom it may concern:

Be it known that I, MATTHEW REID, of the village of Somerset, in the Province of Manitoba, Canada, grain-buyer, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is the specification.

My invention relates to grain car doors and the objects of the invention are firstly, to provide a strongly reinforced closely fitting door of cheap construction, secondly, to provide a simple and easily operated gate whereby the side pressure on the inner face of the door may be relieved previous to opening, thirdly, to provide means whereby the door may be conveniently raised, held in such raised position and run to the side, and lastly, to provide a track at the side of the car door on which the grain door operates when being lifted, the track being so constructed that it forms with the ends of the car door a close joint, the parts being arranged and constructed as hereinafter more particularly described.

Figure 1 is a perspective view of the car door in the lower position, the central gate being partially open. Fig. 2 is a front elevation of the car door in the upper position, the central gate being shut. Fig. 3 is a rear elevation of the grain door, the position of the door being to the side of the entrance to the car. Fig. 4 is an enlarged detailed perspective view of the means employed for supporting the grain door. Fig. 5 is a detailed perspective view showing the form of plate secured at the end of the grain door. Fig. 6 is a horizontal section.

In the drawings like characters of reference indicate corresponding parts in each figure.

1 are the face or out boards and 2 is the floor of the car.

3 3 are the side posts of the car door frame, and 4 is the longitudinal beam forming the upper side of the door frame.

5 are cross members forming supports for the roof of the car.

6 is the grain door of a width slightly greater than between the side posts and of the ordinary height used in doors of this class.

7 are plates at the end of the door passing completely across the width, the said plates being held to the door by bolts and having an outwardly extending guide 9 formed at the

outer corner, the guide being at right angles to the outer face of the door.

10 are angle bar tracks bolted to the inner face of the side posts 3 3, the tracks having one of the arms of the angle turned directly inwardly. The guides 9 overlap on the inwardly extending arm, the complete door operating in its upward and downward motion on the angle bars. It will readily be seen that with this form of track for the grain door there is little tendency for any grain to leak out at the sides.

11 are vertical face strips passing parallelly across the door 6 and have grooves 12 cut in their inner faces, forming a vertical guide for the gate 13.

The grain door is provided with an opening 14 located centrally and towards its lower edge, such opening allowing when the gate is open for passage of the grain from the inside of the car.

15 is a U-shaped arm swung from the upper edge of the gate and 16 is a second U-shaped arm pivoted at its ends in the inner face of the strips 11 and to which the extending ends of the U-shaped arm 15 are attached. By catching the arm at 17 and pulling outwardly, the gate is raised, and the reverse operation closes it.

18 are cables or iron stay rods passing longitudinally across the grain door, over the cross strips 11, and terminating in screw ends 19 on which operate nuts 20 to increase the tension by screwing up.

21 is a U-shaped track from which extends arms 22, supported by means of bolts 23, from the cross beams 5. It is to be understood that the track passes above the door frame and extends considerably to the side of the frame, and further, that on account of its suspension it is free to swing.

24 are hangers having their upper ends riding on the track 21 and 25 is a pulley pivoted between the hangers.

26 is a beam directly below the track to which the hangers are secured by bolts 27.

28 is a chain or such like fastened at its extremities 30 to the ends of the grain door at the upper edge and passing over the pulleys 25 having centrally a hook 31 adapted to engage with the rod or cable 18.

32 are hooks on the outer face of the grain door adapted to engage with eyes 33 carried by the side posts and also with eyes carried on the inner wall of the car, the former to

hold the door tightly closed, and the latter to hold it close against the car wall when not in use.

The operation of my grain door is as follows:—Assuming the car filled, the door would be in the position shown in Fig. 1 and the gate would be closed. When it is desired to unload the gate is gradually opened until the side pressure is decreased sufficiently to allow raising of the door. The hooks 32 being unfastened the door is lifted by pulling down the chain 28, it being locked when the door is in the upper position, as clearly shown in Fig. 2. In this position the door is run sidewise until it is completely behind the face board of the car, and then secured as above described to the inner side of the car.

The pivotal suspension of the track 21 and the use of the chain 28 allow a great freeness in the movement of the door which is an important point.

Although I have shown the hangers simply swung from the track it will be understood that these may be supplanted with sets of wheels without in the slightest departing from the spirit of my invention.

If it be found that the angle bar guides 10 are objectionable in such cases as where cattle are loaded in the car on its return trip, they can be removed, and instead a groove cut in the side posts of the car frame to receive the guides 9 of the plate 7.

Where oats are to be shipped in the car a width can be added to the door by hinging a flap to the top to turn inwardly back against the top when not in use, such flap would have hooks and eyes as those 32 33 now in use.

What I claim as my invention is:

1. In a device of the class described the combination with the side posts of the door frame and the grain door sliding vertically on the side posts, of a chain secured at its ends to the ends of the grain door, a pair of overhung pulleys over which the chain passes and a hook on the central part of the chain adapted to engage with a part of the door when the door is raised to hold said door in raised position as and for the purpose specified.

2. In a device of the class described the

combination with the car door frame and a grain door adapted to slide vertically on the frame, of hangers above the door and capable of lateral movement, and a chain passing over pulleys carried by the hangers and with its ends fastened to the door, as and for the purpose specified.

3. In a device of the class described the combination with the frame of the car door and the grain door adapted to slide vertically on tracks carried by the side members of the frame, of a set of hangers slidable on a track longitudinally within the car and above the door, pulleys carried by the hangers, a chain having its extending ends fastened to the grain door and passing upwardly through the pulleys, and a hook carried by the chain adapted to engage with a receiving member on the grain door, as and for the purpose specified.

4. In a device of the class described the combination with the frame of the car door, the grain door adapted to slide vertically on the side members of the frame, of a U-shaped track swung from the cross supports of the car, hangers adapted to operate on the track and carrying pulleys at their lower ends the said hangers being spaced apart by means of an inter-connecting beam, a chain passing over the pulleys and having its extending ends connected to the grain door, and a hook carried by the chain adapted to engage with a receiving member carried towards the lower edge of the grain door, as and for the purpose specified.

5. In a device of the class described, a U-shaped track suspended to have a lateral swinging movement from the top of the car, hangers having a portion engaging each side of the track, a spacing bar below the track to which the hangers are secured, a door and a chain connecting the door to the hangers.

Signed at Winnipeg this 3rd day of May, 1907.

MATTHEW REID.

Witnesses:

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GERALD S. ROXBURGH.