

E. POSSON.
GRAIN DOOR.

APPLICATION FILED OCT. 25, 1907.

969,405.

Patented Sept. 6, 1910.

2 SHEETS—SHEET 1.

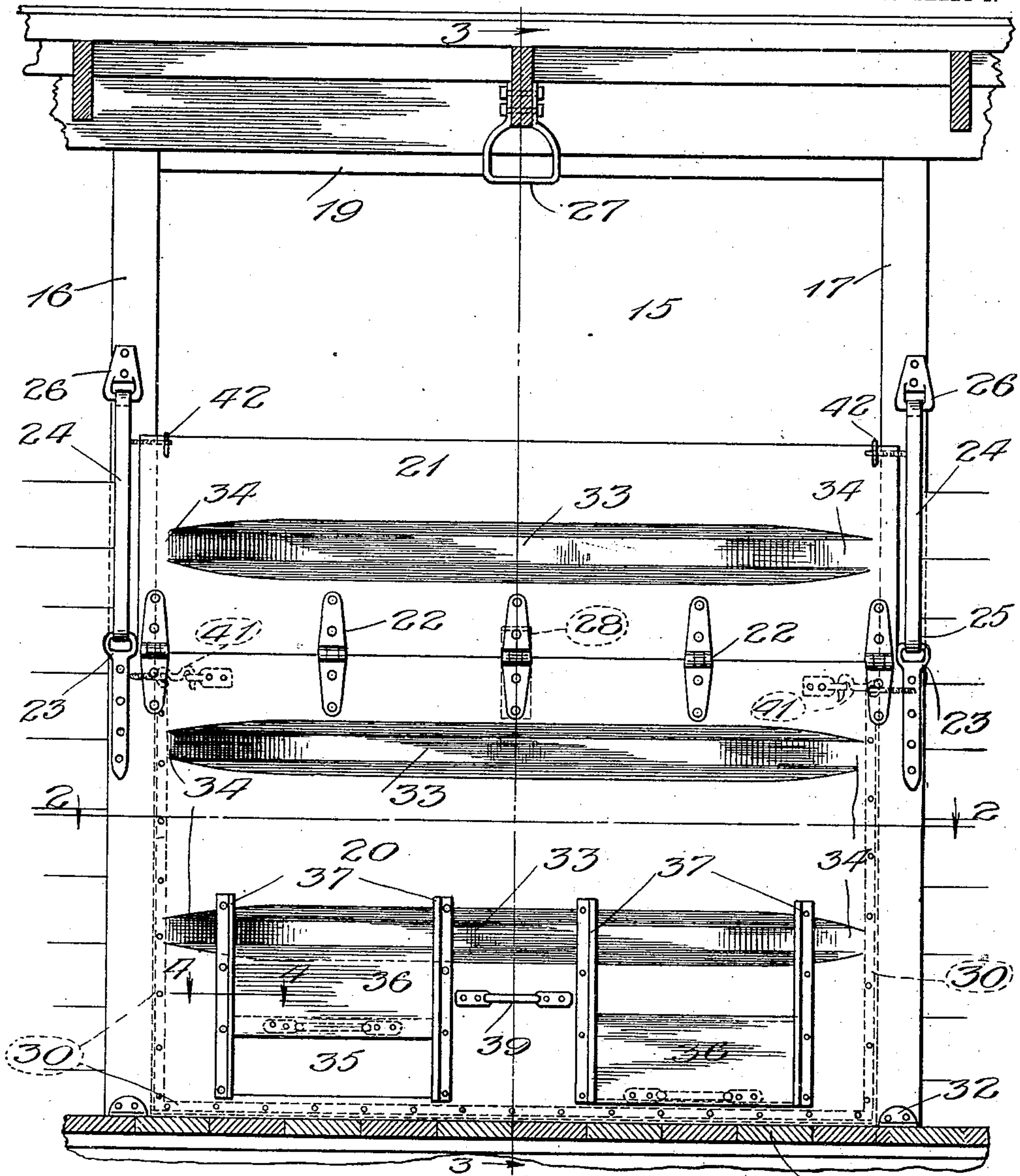


Fig. 1

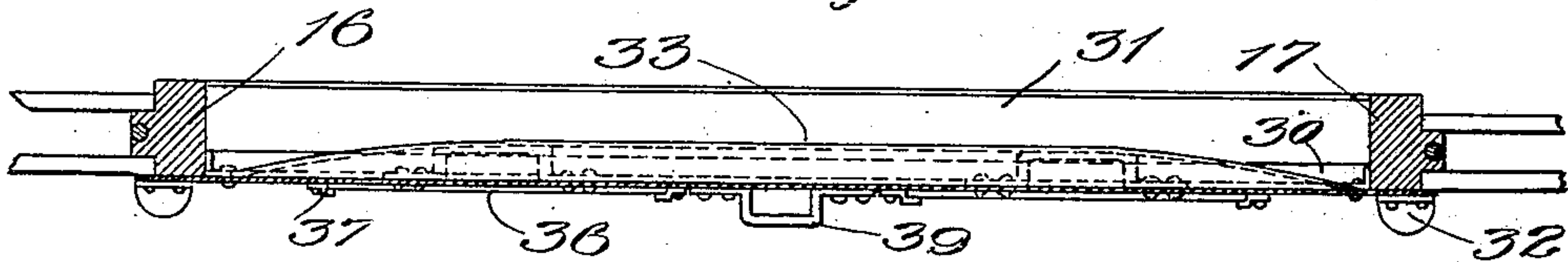


Fig. 2

Witnesses:
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Inventor:
Edward Posson.
By
Sheridan and Wilkinson Attys

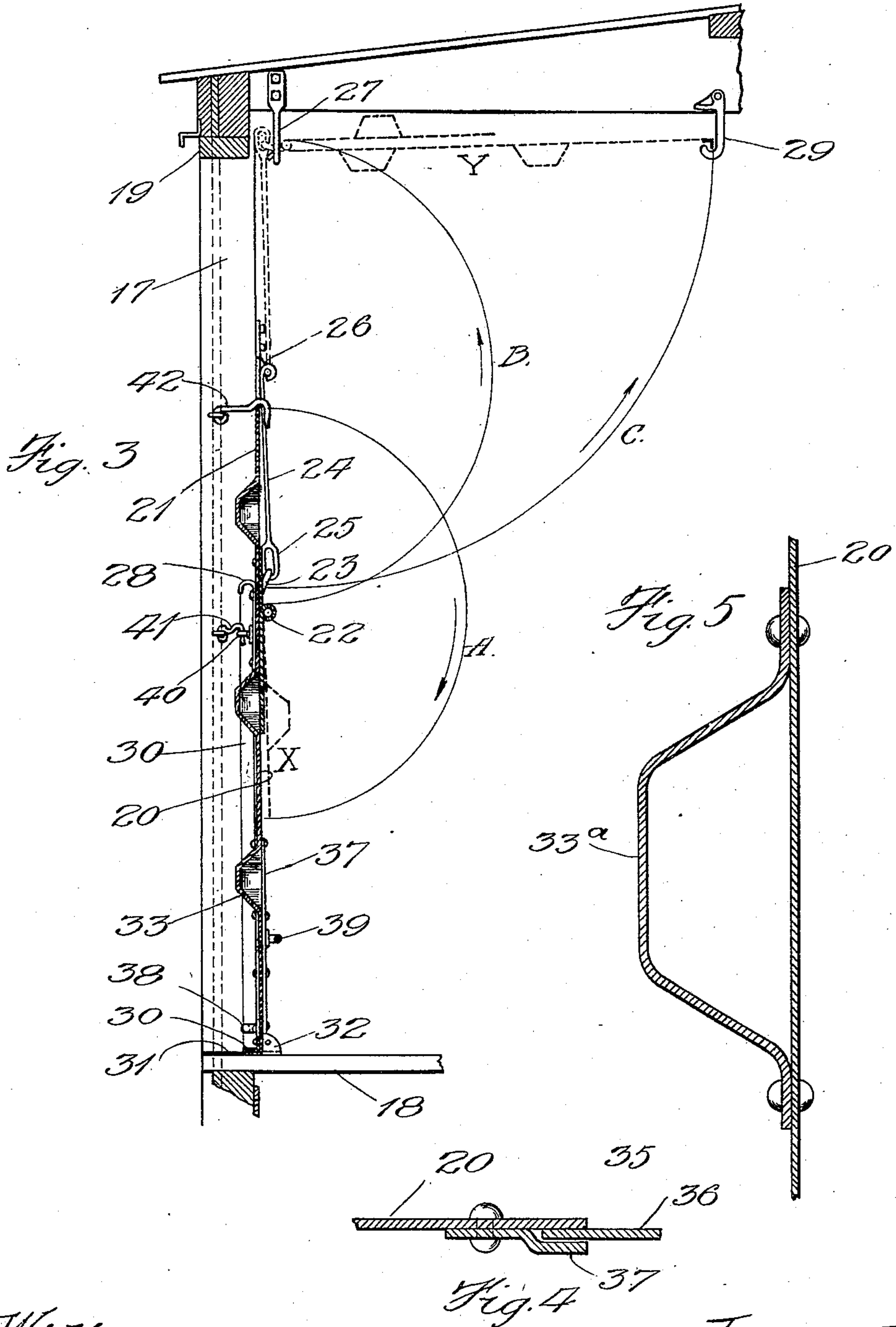
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Lillian Kirby.

Inventor:
Edward Posson.
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UNITED STATES PATENT OFFICE.

EDWARD POSSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO GRAIN BELT CAR SPECIALTY COMPANY, A CORPORATION OF MAINE.

GRAIN-DOOR.

969,405.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed October 25, 1907. Serial No. 399,211.

To all whom it may concern:

Be it known that I, EDWARD POSSON, 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-Doors, of which the following is a specification.

The object of my invention is to provide an improved door for grain cars.

Further objects are to provide a grain door of sheet metal that shall have adequate strength, and to make a door that can readily be folded out of the way when desired.

All these objects as well as others will be made apparent in the following specification and claim.

Referring to the drawings—Figure 1 is a side elevation of my improved grain door, looking from inside of the car. Fig. 2 is a section on the line 2 of Fig. 1, looking in the direction of the arrow. Fig. 3 is a vertical section taken on the line 3 of Fig. 1, looking in the direction of the arrow. Fig. 4 is a sectional view of a detail on an enlarged scale, the section being taken on the line 4 in Fig. 1, looking in the direction of the arrow. Fig. 5 illustrates a modification of a detail.

The door opening 15 is bounded by the side posts 16 and 17, the floor 18 and the top 19.

The door consists of two sheet metal sections 20 and 21 hinged together along a horizontal axis by means of the hinges 22. The lower section 20 is a little wider than the upper section 21 and on the upper projecting corners of the lower section 20 hinge members 23 are riveted. Each of these hinge members 23 is engaged by the lower end of a hanger or link 24, the eye 25 at the lower end of the link being elongated. The upper end of the link is pivotally attached to one of the side posts 16, 17, as indicated by the reference numeral 26.

Near the middle of the top of the door opening hangs a stirrup 27 which is adapted to engage the hooks 28 on the door section 20 when the latter is swung up on the link 24. The elongation of the eye 25 permits the hook 28 to engage and disengage the stirrup 27. Near the center of the car roof is a hook 29 adapted to hook under the angle iron 30 on the bottom edge of the door section 20, when the said door section may be swung up from the supporting stirrup 27.

The reference numeral 31 indicates a sheet metal door sill. Clips 32 are attached to the floor just within each of the posts 16, 17 to hold the lower edge of the door against said posts. Transverse horizontal strengthening ribs are struck outwardly in the metal of each of the door sections 20 and 21. These ribs taper at either end and vanish just within the edges of the door sections. They project outwardly, as shown, and form pockets that fill with grain when the car is filled with grain. The space between the grain door and the outside door of the car affords room for these ribs.

In the lower part of the door section 20 are two rectangular openings 35 each covered by a slide 36 which is held by vertical guides 37. These slides 36 are provided with handles 38 by which they may be moved to cover the openings 35 or uncover them. Between the two openings 35 a handle 39 is attached to the door section 20. Near the upper corners of the lower door section 20 are attached eyes 40 which are adapted to be engaged by hooks 41 attached to the side posts 16 and 17. Other hooks 42 are provided higher up on the side posts 16 and 17 and these are adapted to hook over the top edge of the door section 21.

The strengthening ribs 33 may be formed of separate pieces of sheet metal and be riveted to the door sections 20 and 21, instead of being struck up in the sheet metal door sections themselves. This modification is illustrated in Fig. 5.

The full lines in Fig. 3 illustrate the position of the parts when the grain door is closed. The car being filled with grain, if it is desired to open the door, the slides 36 are first raised and thus the grain that lies against the door all discharges through the openings 35. Then the operator raises the hooks 42 and turns the upper door section 21 down into the position shown by the dotted lines X. This movement is indicated by the arrow A. The operator next raises the lower door section 20, the upper edge thereof swinging on the links 24 about the center 26. This movement is indicated by the arrow B. At the end of this movement the hook 28 is caught into the stirrup 27, this being facilitated by the elongation of the eye 25. At this stage the door section 20 hangs approximately vertical from the stirrup 27. Its lower edge is then

swung about the stirrup 27 as a center, as indicated by the arrow C, and is finally held up by the hook 29 catching under the angle iron 30 on the lower edge of the door section 20. When it is desired to take the door down these movements are all reversed. The position of the door when finally opened is indicated by the dotted lines Y.

It will be seen that I have provided a door of adequate height that can readily be folded away in the top of the car where it will be entirely out of the way. The ribs 33 constitute a simple expedient for giving the door the necessary strength to resist the pressure of the grain against it.

I claim:

In combination, a side wall having a door opening therein, a door section across the

lower part of said opening, rigid hangers pivotally connected at their lower ends to the upper corners of the door section and at their upper ends to points on the sides of the door opening, said points being intermediate between the top of the door section and the top of the door opening, a hook on the upper edge of the door and a catch directly above the door opening adapted to be engaged by said hook, said links being loosely connected at an end of each so as to permit the said hook to engage and disengage said catch.

EDWARD POSSON.

Witnesses:

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