

No. 879,976.

PATENTED FEB. 25, 1908.

C. MOORE.
GRAIN CAR DOOR.

APPLICATION FILED NOV. 26, 1906.

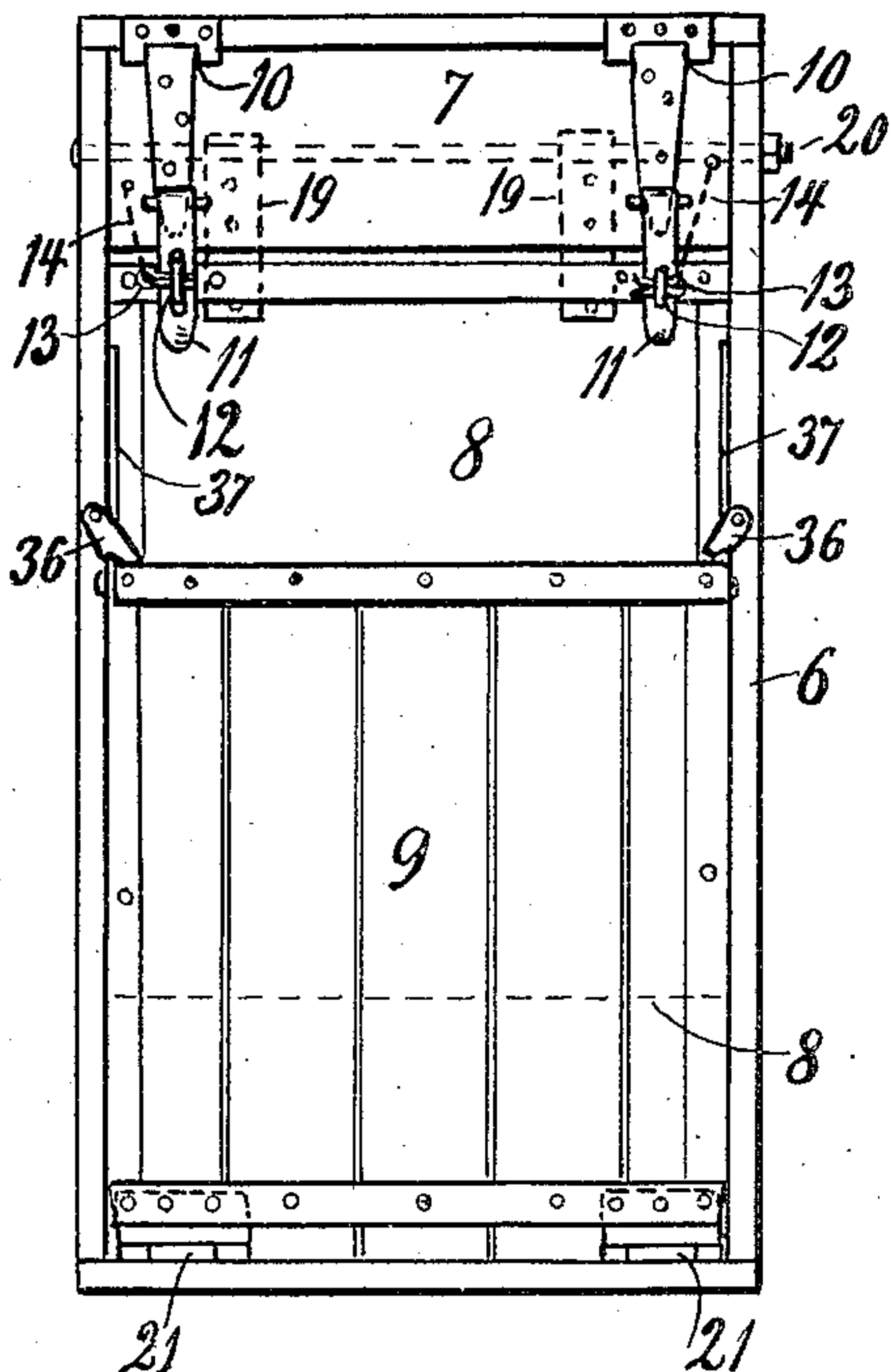


FIG. 1.

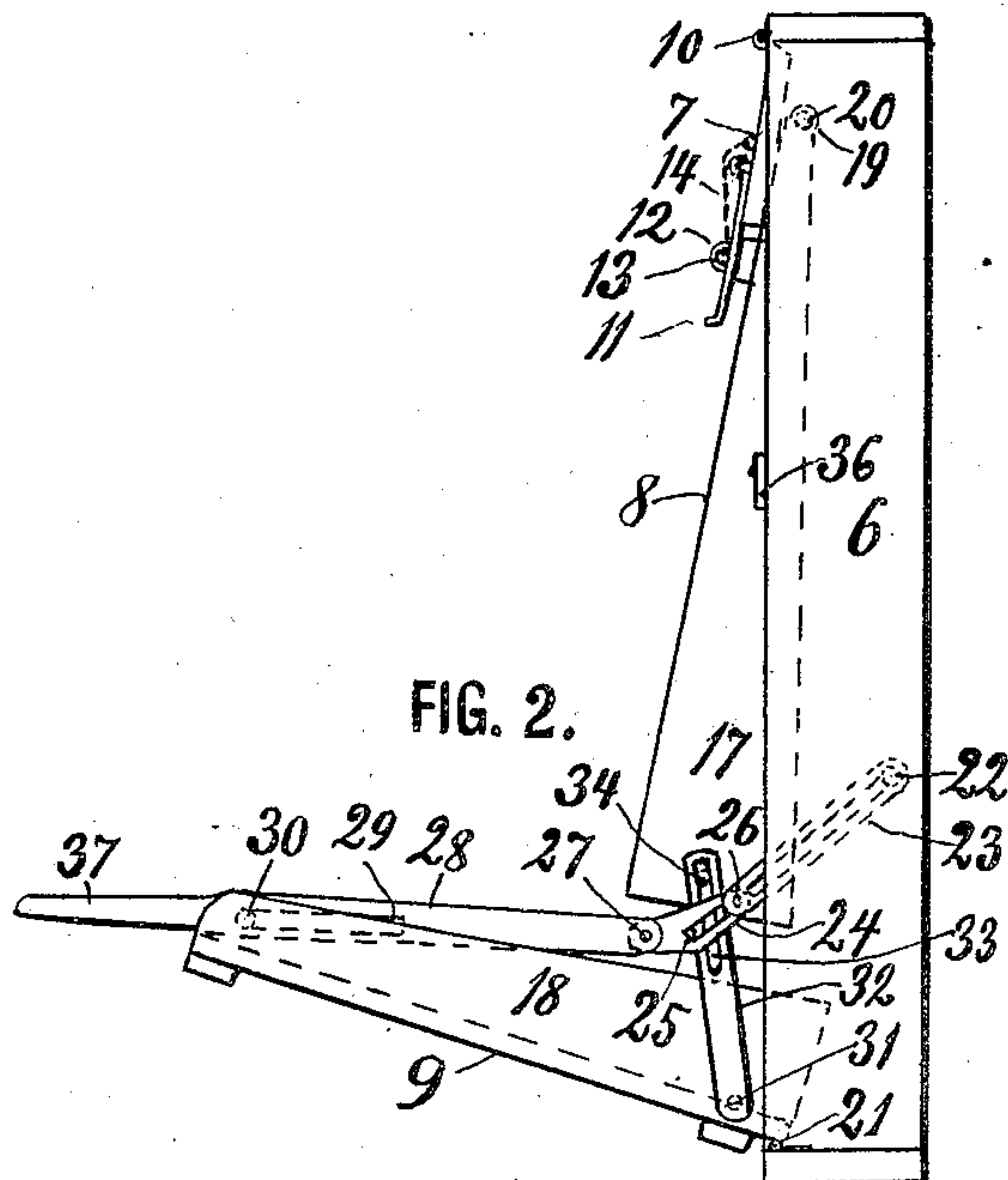


FIG. 2.

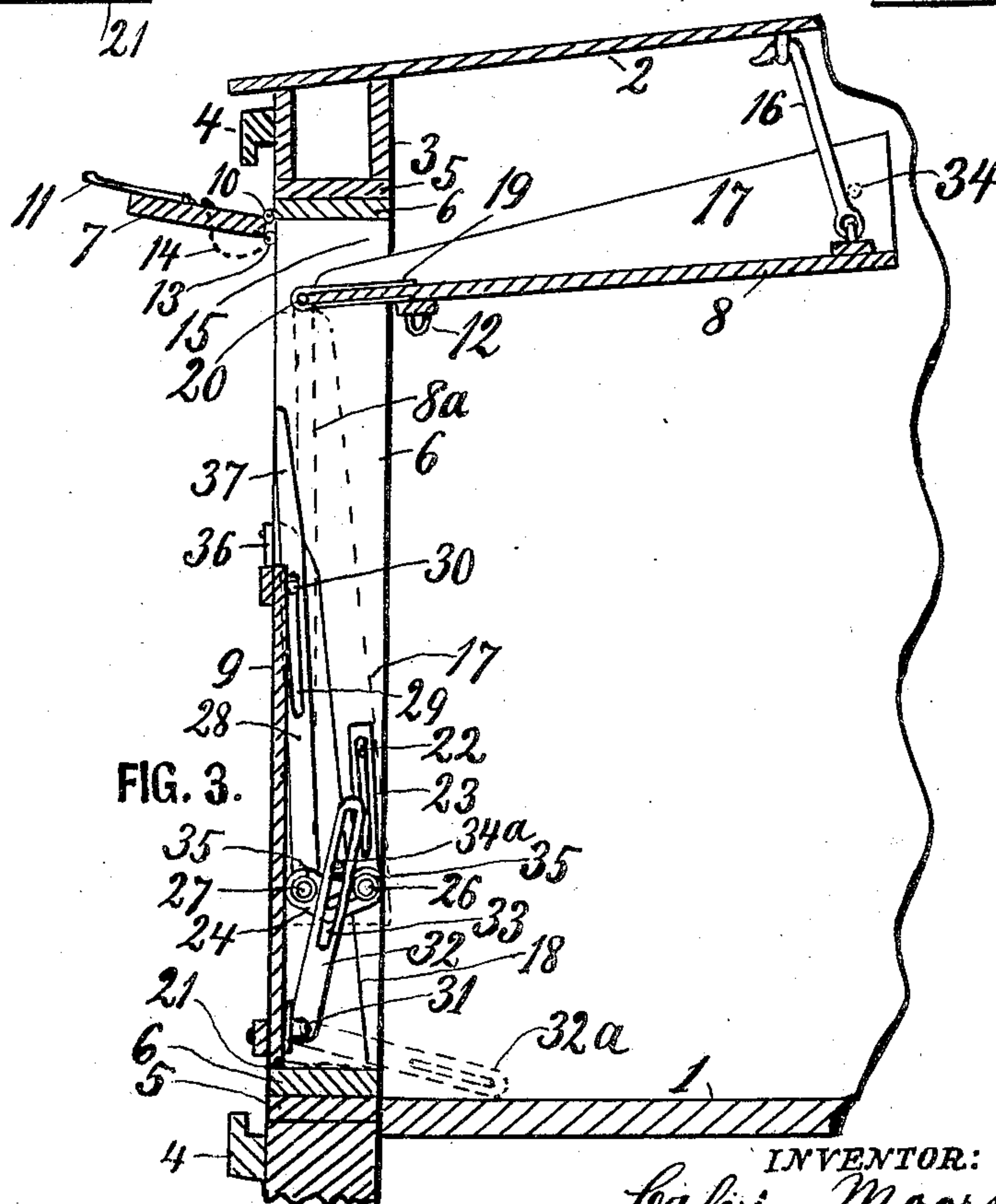


FIG. 3.

WITNESSES:

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CALVIN MOORE, OF BECKER, MINNESOTA.

GRAIN-CAR DOOR.

No. 879,976.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed November 26, 1906. Serial No. 345,002.

To all whom it may concern:

Be it known that I, CALVIN MOORE, a citizen of the United States, residing at Becker, in the county of Sherburne and State of Minnesota, 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in grain-doors for railway cars, and the object is to provide a very efficient inner door for cars hauling grain, and to make such door removable and also convertible into use for loading and unloading stock. These and other purposes, hereinafter more fully set forth, I attain by the novel construction and arrangement of parts illustrated in the accompanying drawing, in which,—

Figure 1 is a side elevation of my complete grain-door and its frame, whether the frame is a special one or the one built with the car makes no difference in said view. Fig. 2 is a right-hand edge view of Fig. 1 with the sections of the door in partly open position. Fig. 3, is a transverse sectional elevation of a car intersected near the middle of a door opening provided with my improved door, the latter being shown with its sections in different positions.

Referring to the drawings by reference numerals, 1 designates the floor, 2 the roof and 3 the side of a grain car which may have guides 4 or other means for holding the regular outer door (not shown).

In the door opening of the car I provide my improved door, mounted either directly in the regular door frame 5, or as the circumstances may favor, in a special frame 6, which is then detachably secured to the frame 5 by bolts or other suitable means (not shown). The door comprises an upper section 7, a middle section 8, and a bottom section 9. The top section is hinged at 10 to the upper end of the frame and provided with hasps 11 adapted to hold the section closed by receiving staples 12 fixed in the middle section and having pins 13 put through them. Said pins are secured to the top section by chains 14, and may be used also to support the top section in a horizontal position by placing

them between the frame and the hinged edge of the section as shown in Fig. 3 while grain is being poured from an elevator into the car through the opening 15 below the top section, while the middle section and lowest section are closed in the position 8^a and 9 in Fig. 3. In said view it will also be seen that the middle section 9 may be swung inward and suspended by hooks 16. This may be done either while unloading the last part of a load of grain or in passing stock through the door opening; in either case the bottom section 9 is folded outward as in Fig. 2 to an almost horizontal position to serve either as a cattle chute or as a pan from which to shovel away the grain. 17 and 18 are thin sheet metal guards on the middle and bottom section respectively to prevent escape of the grain sidewise when the sections are in the position shown in Fig. 2.

The middle section of the door is suspended by hanging straps 19 and a pintle rod 20 in a position to be partly overlapped by the top section, and the bottom section is hinged with its lower end at 21 to fold upward and partly overlap the middle section. The two latter sections are held in the positions shown in Fig. 2 and also in their locked position by the following means:

In each side post of the door frame is a pivot 22 on which swings and slides a link 23 having a slotted hole on said pin and to its other end pivoted a short link 24, having a slot 25 for the pivot 26 to slide in. To the outer end of the short link is pivoted at 27 a lever 28, having a slot 29 riding on a pin 30 fixed near the upper corner of the middle section, while near the lower corner is pivoted at 31 a lever or link 32 having a slot 33 riding on a stud 34 fixed near the lower corner of the middle section. When the latter section is to be raised as in Fig. 3 the levers 32 are first sprung out of engagement with said pins and thrown into the idle position 32^a in Fig. 3. But when said lever is in its normal position it forms a guide between two lugs or projections 35 of the short link 24, so that when the lever 28 is swung with its handle part 37 into folded position and there retained by a latch 36, the said latch and the pin 30 tend to pull the short link 24 and lever 32 outward, and as the pin 34 is then in the position 34^a it follows that the bottom section and the middle section of the door are by said mechanism held firmly together until the latches 36 are disengaged from the levers

or arms and the sections are unfolded, when the links serve to hold the sections in the positions shown in Fig. 2. The ends 37 serve as handles in manipulating the links
5 to assist them into the raised and lowered positions.

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

10 The combination with a car body having a door opening, of a frame in the door opening, a door hung in the frame and comprising two partly over lapping sections, one section being hinged in the upper part of the frame, the
15 other to the bottom of the frame means for holding said sections in closed position and in more or less open position, said means being provided at each vertical edge of the door and consisting of the link bars 23 and 28 piv-

oted by sliding joints, one to the frame and 20 the other near the top of the bottom section of the door, a short link connecting said two links and having two projections, a lever 32 engaged between said projections and having its lower end pivoted to the lower door sec- 25 tion and its upper part provided with a slot, a pin near the lower corner of the upper section and engaging said slot in a detachable manner, and latches on the frame for holding the link bars or levers 28 in folded position, 30 for the purposes set forth.

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

CALVIN MOORE.

Witnesses:

A. A. SNOW,
T. M. SNOW.