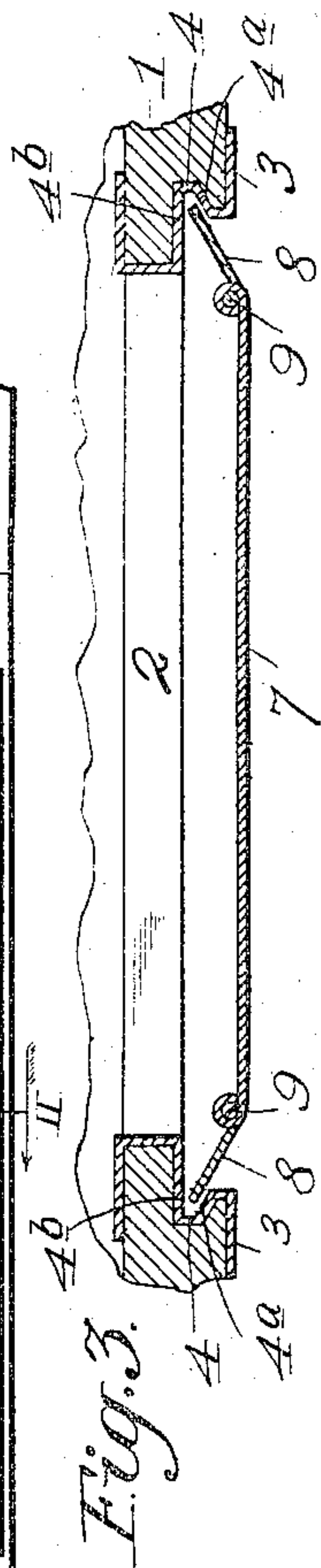
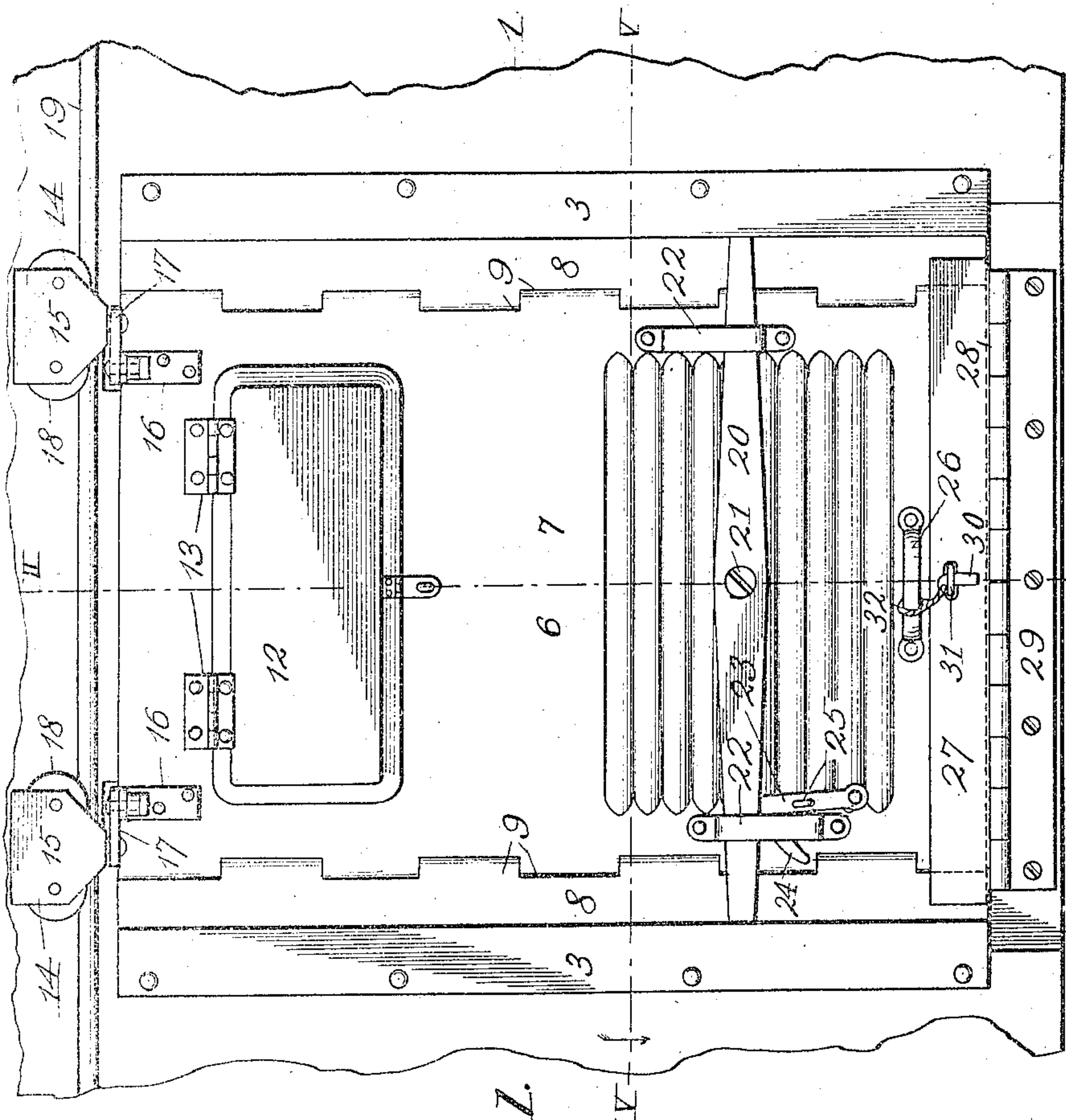
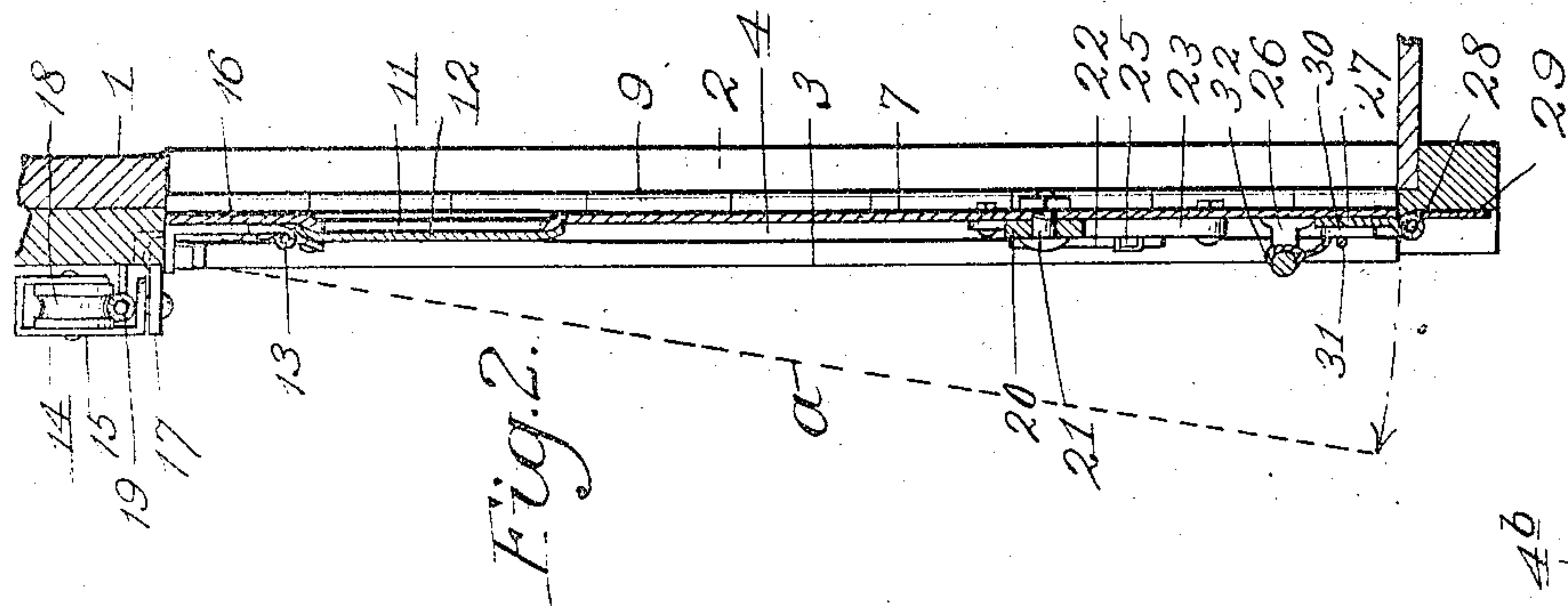


J. S. BENDER.
COMBINED GRAIN DOOR AND CAR DOOR.
APPLICATION FILED SEPT. 24, 1907.

922,380.

Patented May 18, 1909.

2 SHEETS—SHEET 1.



Witnesses:

E. Cahill.
R. Hamilton.

Fig. 1.

Inventor,

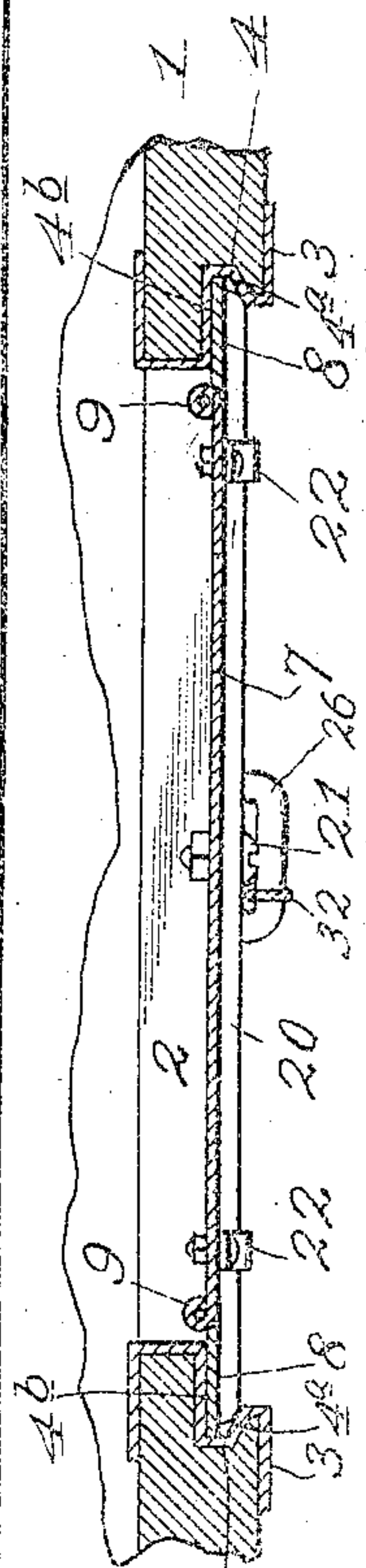
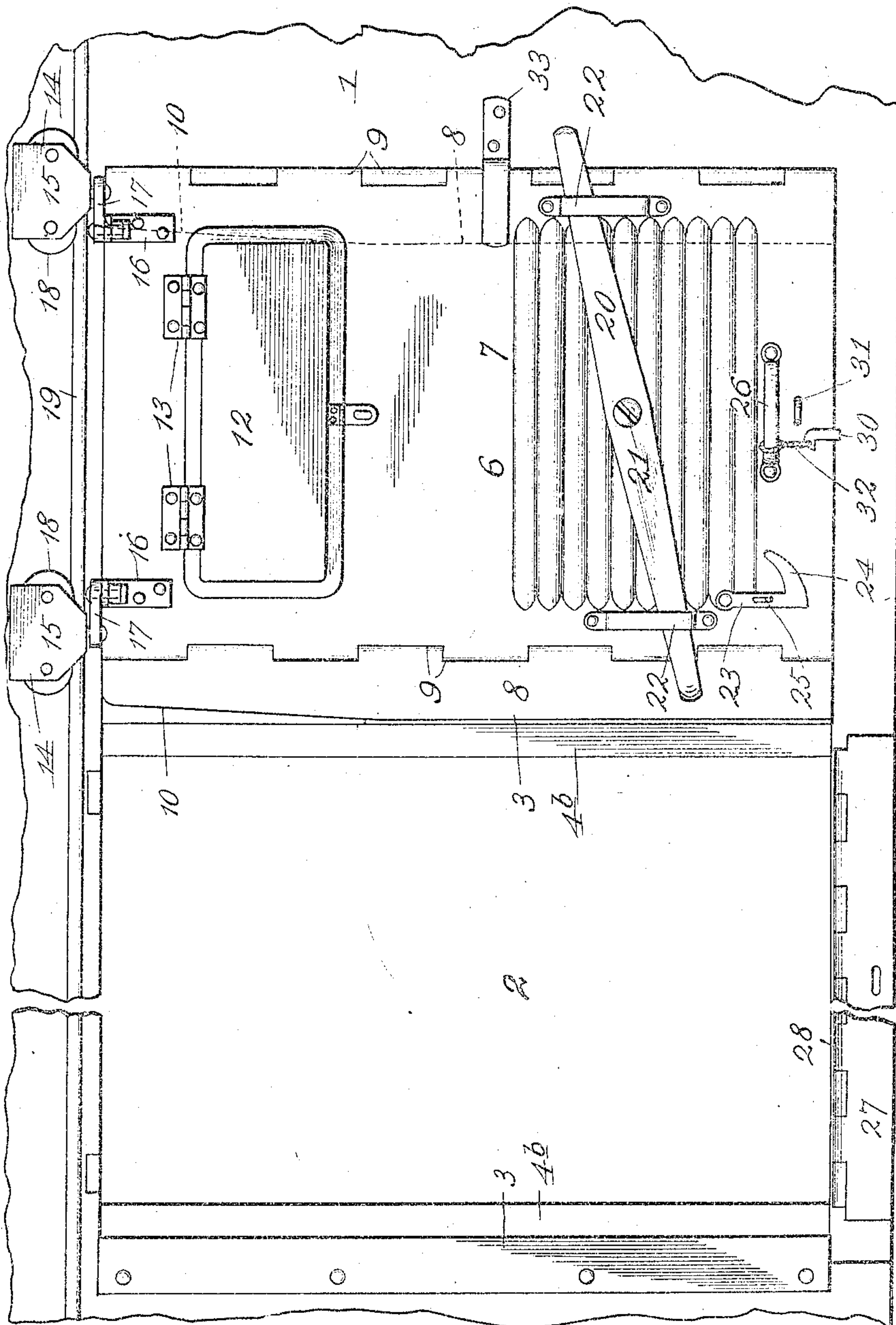
Jacob S. Bender

By F. G. Fischer
Atty.

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Fig. 4.

Inventor,

Jacob S. Bender

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UNITED STATES PATENT OFFICE.

JACOB S. BENDER, OF KANSAS CITY, MISSOURI.

COMBINED GRAIN-DOOR AND CAR-DOOR.

No. 922,380.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed September 24, 1907. Serial No. 394,288.

To all whom it may concern:

Be it known that I, JACOB S. BENDER, citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Combined Grain-Doors and Car-Doors, of which the following is a specification.

My invention relates to a combined grain and car door; and one of my objects is to provide a door which will perform the double function of a grain-door and an ordinary car-door, so that each side of a car need only be provided with one door instead of two as is customary when the car is equipped for hauling grain.

Other objects of the invention will hereinafter appear, and in order that it may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 represents a broken side elevation of a box-car equipped with my improved door, the latter being in a closed position. Fig. 2 is a vertical central section on line II--II of Fig. 1. Fig. 3 is a detail cross section of the door-jambs of the car and my improved door, the latter being partly disengaged from the former preparatory to opening the door. Fig. 4 is a broken side elevation of the car with my improved door in an open position. Fig. 5 is a cross section on line V--V of Fig. 1.

1 designates a box-car provided at its sides with doorways 2.

3 designates a pair of door-jambs at opposite sides of each doorway. Said door-jambs are made of sheet-metal having vertical pockets 4 pressed therein to receive the vertical edges of the door, as shown in Fig. 5.

6 designates my improved door, which consists of a main section 7 and a pair of flaps 8, which latter are secured to the vertical sides of the main section by hinges 9 and adapted to swing inwardly as shown in Figs. 3 and 4 to permit the door to open. The free edges of flaps 8 are tapered at their upper portions 10 so that said edges may be more readily inserted in pockets 4 when closing the door.

Section 7 of the door is provided at its upper portion with an opening 11, which is normally closed by a wicket 12 secured by hinges 13 to the upper side of said opening, through which latter the car may be filled

with grain when the door is in a closed position.

Door 6 is suspended from a pair of hangers 14, each of which consists of a hood 15, a bracket 16 secured to the upper portion of section 7, and a link 17 pivotally connected at its ends to the underside of hood 15 and the upper side of bracket 16 so that section 7 may swing outward to the position shown in Fig. 3, preparatory to opening the door.

Hood 15 is provided with a pair of grooved rollers 18 arranged to travel upon a track 19 suitably secured to the upper portion of the car. Said track is circular in cross-section so that the grooved rollers may rock laterally thereon and permit the lower portion of the door to swing outward as indicated by the dotted lines *a*. By suspending the door in this manner, it is evident that the instant it is unlocked it will be immediately forced outwardly by the grain within the car, hence there will be no necessity to employ a crowbar or other implement apt to injure the door in opening the same.

The door is locked in a closed position by a transverse bar 20 engaging pockets 4 and pivotally secured at its central portion to section 7 by a bolt 21. The ends of the bar are rounded so that when they engage the beveled sides 4^a of the pockets, said bar together with the door will be forced inward and press flaps 8 tightly against the inner sides 4^b of the pockets to prevent leakage of grain at these points.

The pivotal movement of bar 20 is limited by a pair of loops 22 secured to section 7 and when it is desired to lock the car, said bar is held in a horizontal position, see Fig. 1, by a latch 23 pivoted to the door and provided with a curved upper end 24 adapted to pass through one of the loops and engage the under side of the bar. This latch is provided with a staple 25, so that when desired the wire of a seal may be passed there-through and around the adjacent loop 22, as will be readily understood.

26 designates a handle secured to the lower portion of section 7 to offer a convenient grip when opening or closing the door.

27 designates a retaining-strip secured by a hinge 28 to a strip 29 for the purpose of forming a grain-tight joint between the lower edge of the door and the threshold of the doorway. Said retaining-strip may be

held against the lower portion of door 6 by any suitable fastening device, a pin 30 passing through a staple 31, being shown. Pin 30 is secured from loss by a small cable 32 attached to handle 26. Staple 31 is secured to the lower portion of the door and extends through an opening in the retaining-strip, as shown in Fig. 1.

When it is desired to open the door, pin 31 is removed from the staple and the retaining-strip 27 is lowered to the position shown in Fig. 1. Latch 23 is then swung out of engagement with the lower end of bar 20 so that the latter may swing on its pivot to disengage its extremities from the pockets 4. If the car be loaded with grain the pressure thereof will force the door to swing outward at its lower end, as hereinbefore described, but if it be loaded with merchandise the door can be pulled outward bodily to clear the door-jambs and the side of the car. When the door is pulled out in this manner links 17 turn on their pivots so that the door may be slid backward to uncover the doorway without interfering with the side of the car, the foremost flap being previously folded back against the inner side of sections 7 as indicated by dotted lines, Fig. 4, to reduce the distance at which the door need be pushed backward to fully uncover the doorway 2. The backward movement of the door is limited by a stop 33 secured to the side of the car.

Having thus described my invention, what I claim is:—

1. A car-door consisting of a main section and a pair of flaps hinged to the vertical edges thereof, metallic door-jambs at the sides of the car door-way having pockets to receive the free edges of the flaps, said pockets having beveled sides, and means for locking the door in a closed position, the

extremities of said means being arranged to enter the pockets and engage the beveled sides thereof.

2. A car-door consisting of a main section and a pair of flaps hinged to the vertical edges thereof, door-jambs at the sides of the car-doorway having pockets to receive the free edges of said flaps, said pockets having beveled sides, and a bar pivoted to the main section of the door adapted to engage the beveled sides of the pockets, substantially as described.

3. A car-door consisting of a main section and a pair of flaps hinged to the vertical edges thereof, door-jambs at the sides of the car-doorway having pockets to receive the free edges of said flaps, said pockets having beveled sides, a bar pivoted to the main section of the door adapted to engage the beveled sides of the pockets, and a latch pivoted to the door for securing said bar in a locked position.

4. A car-door consisting of a main section and a pair of flaps hinged to the vertical edges thereof, door-jambs at the sides of the car-doorway having pockets to receive the free edges of the flaps, said pockets having beveled sides, means for locking the door in a closed position, the extremities of said means being arranged to enter said pockets and engage the beveled sides thereof, members for carrying the door, and means pivoted to the door and said members whereby the door may swing outward bodily to disengage its flaps from the pockets.

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

JACOB S. BENDER.

Witnesses:

F. G. FISCHER,
M. Cox.