

(No Model.)

3 Sheets—Sheet 1.

J. D. GRABILL.  
COMBINED STOCK AND BOX CAR.

No. 553,193.

Patented Jan. 14, 1896.

FIG. 1.

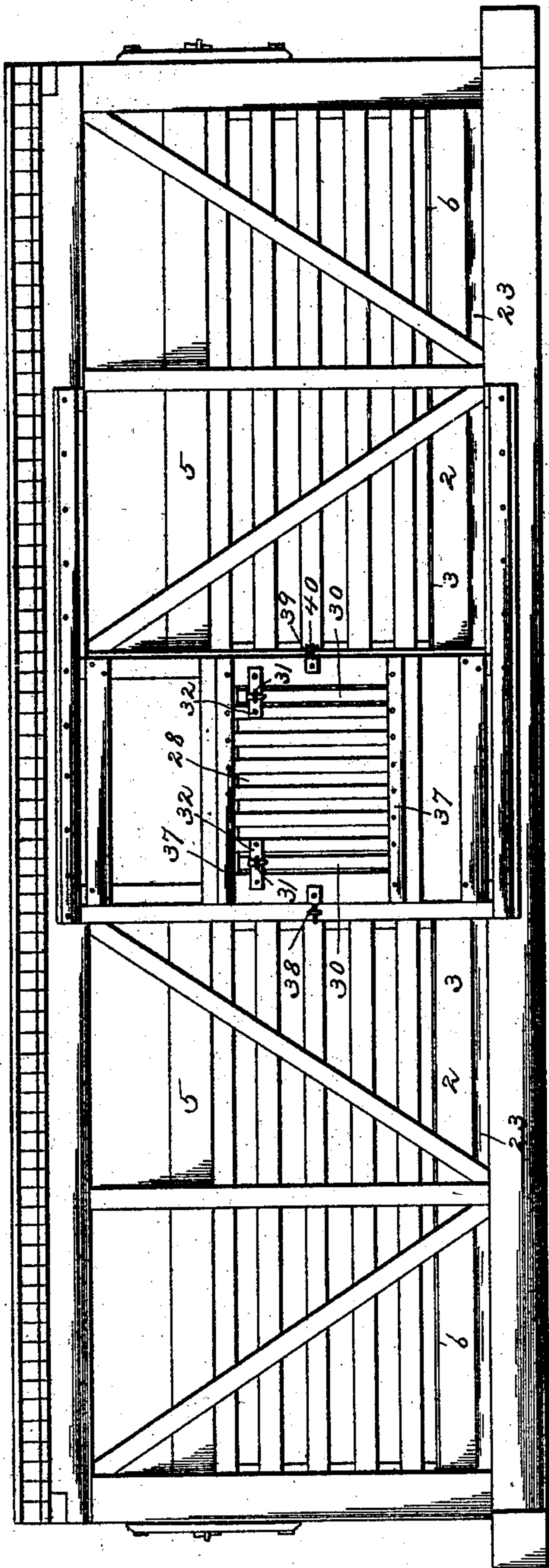
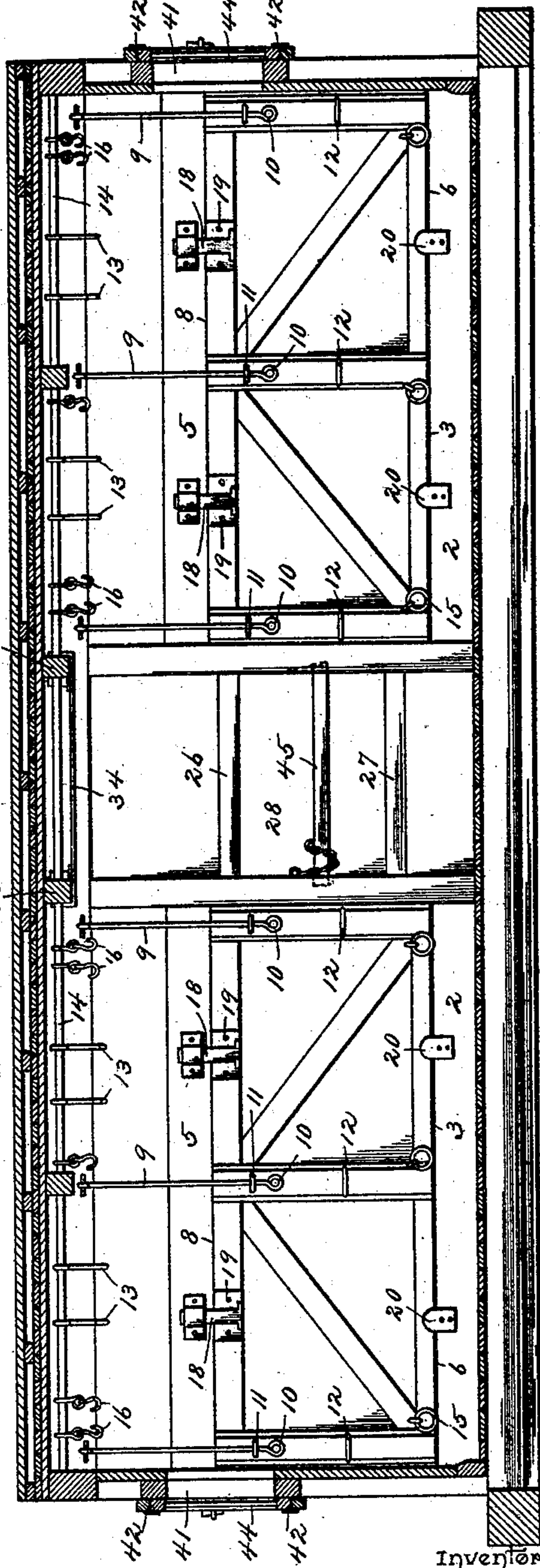


FIG. 3.



Inventor

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Witnesses

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FIG. 2.

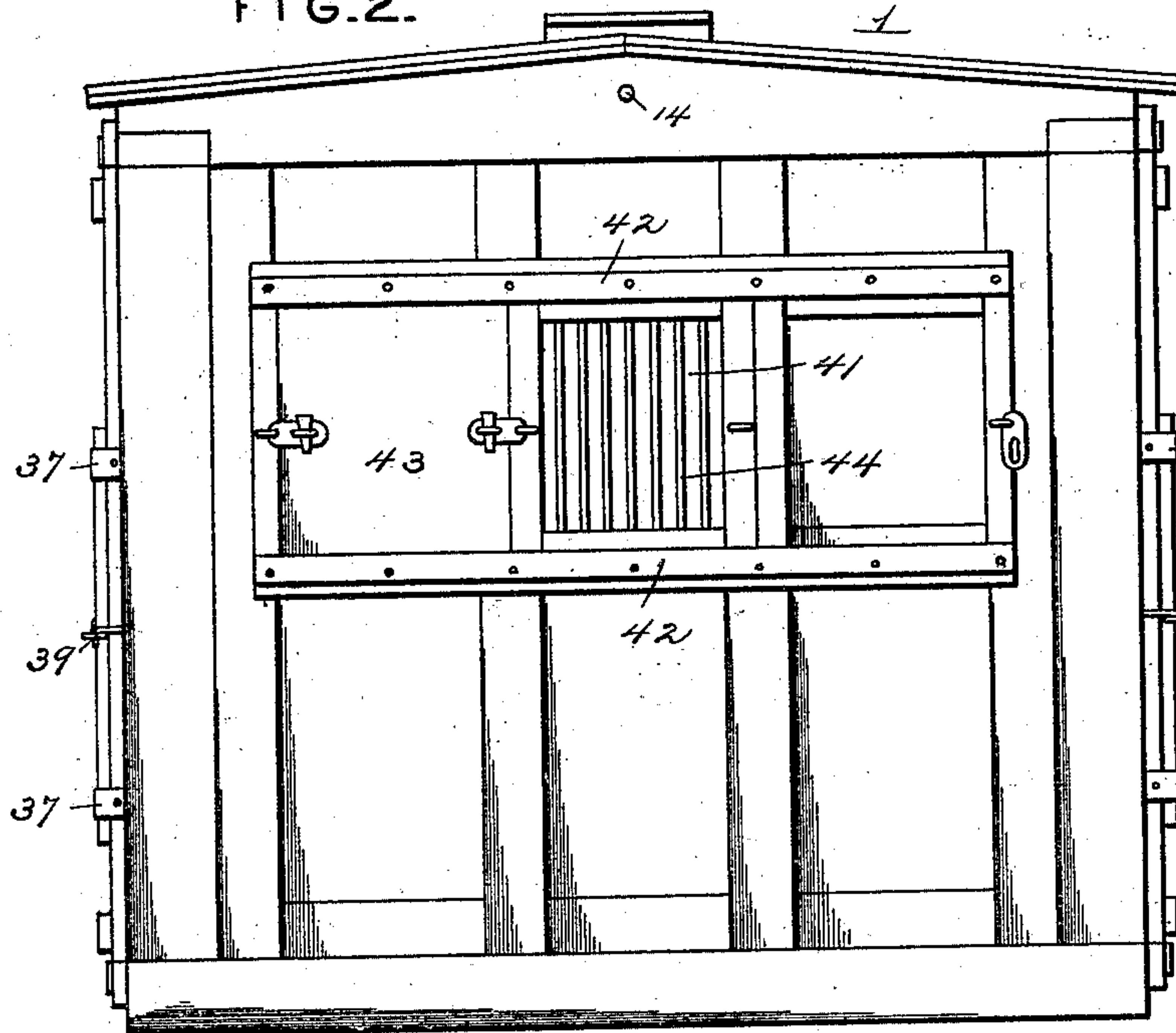


FIG. 7.

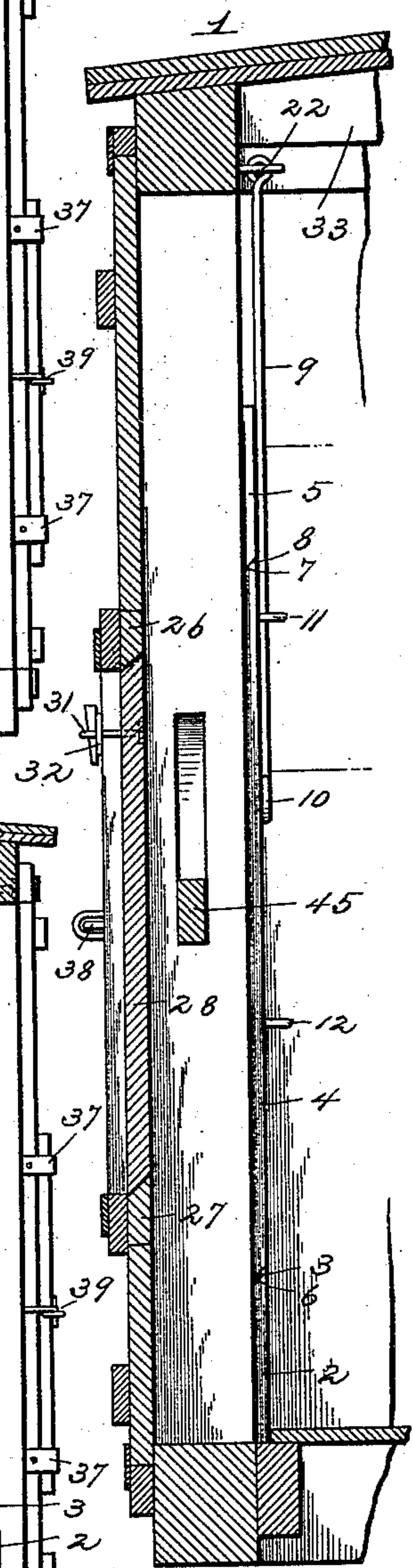
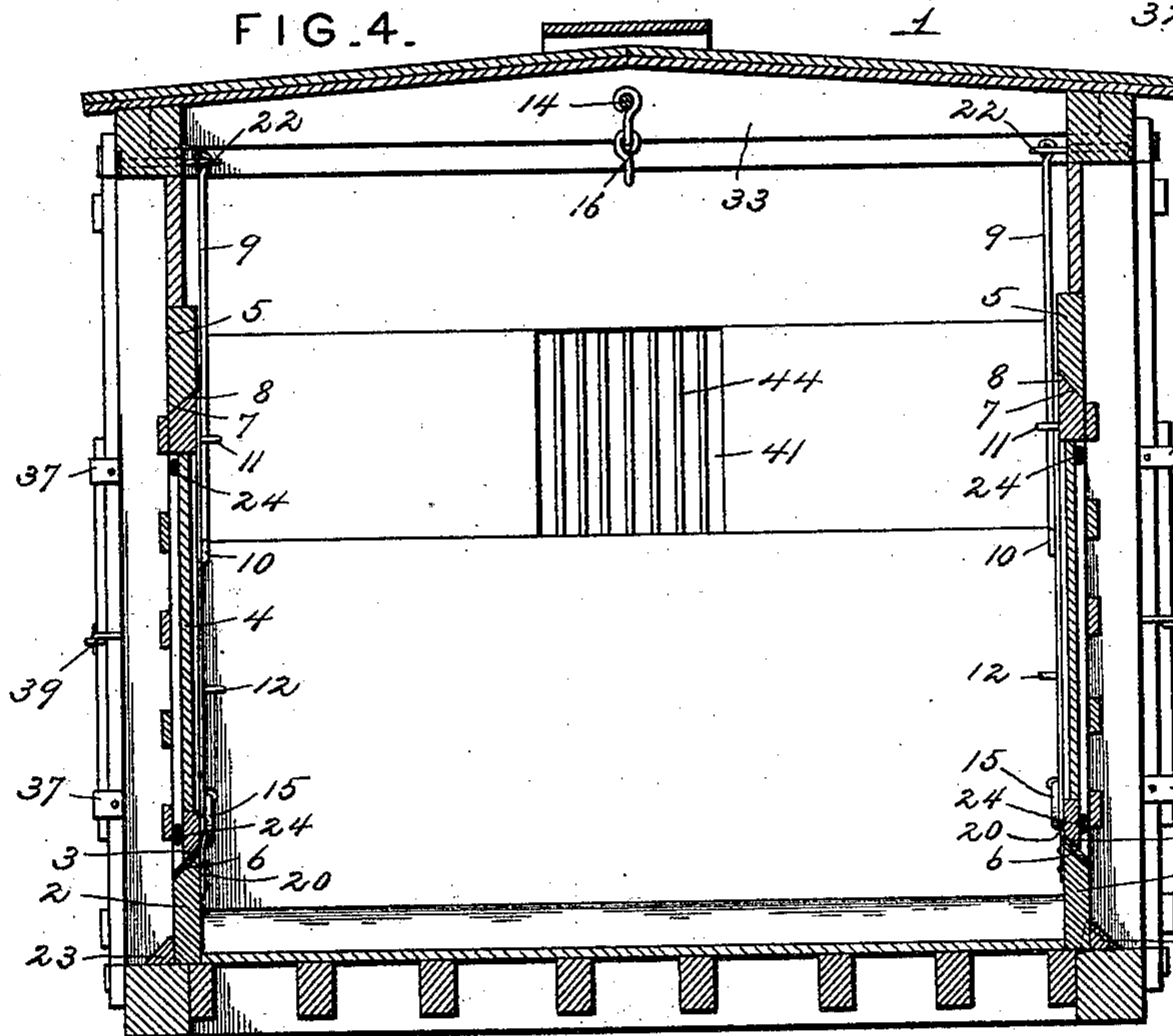


FIG. 4.



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FIG. 5.

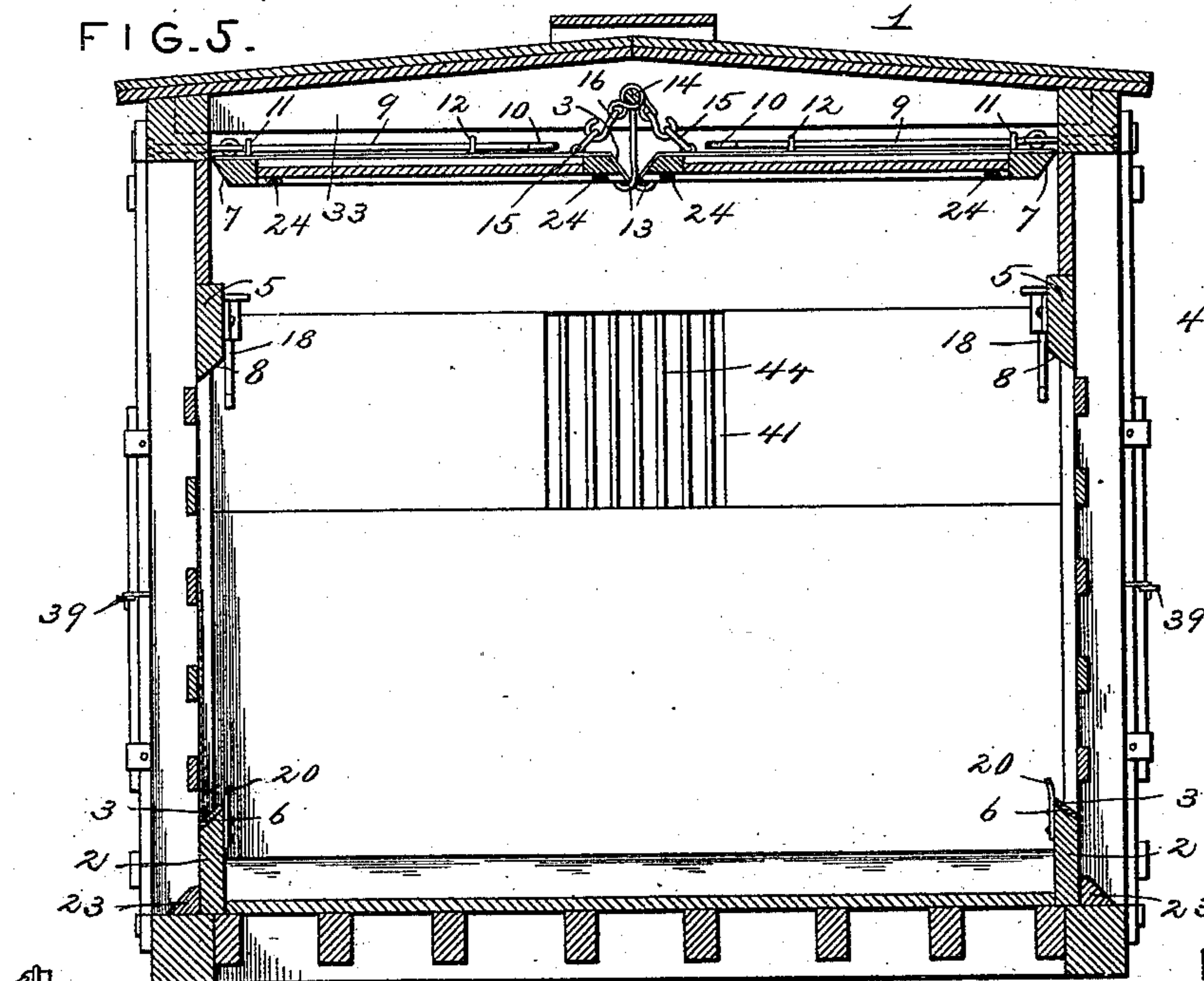


FIG. 8.

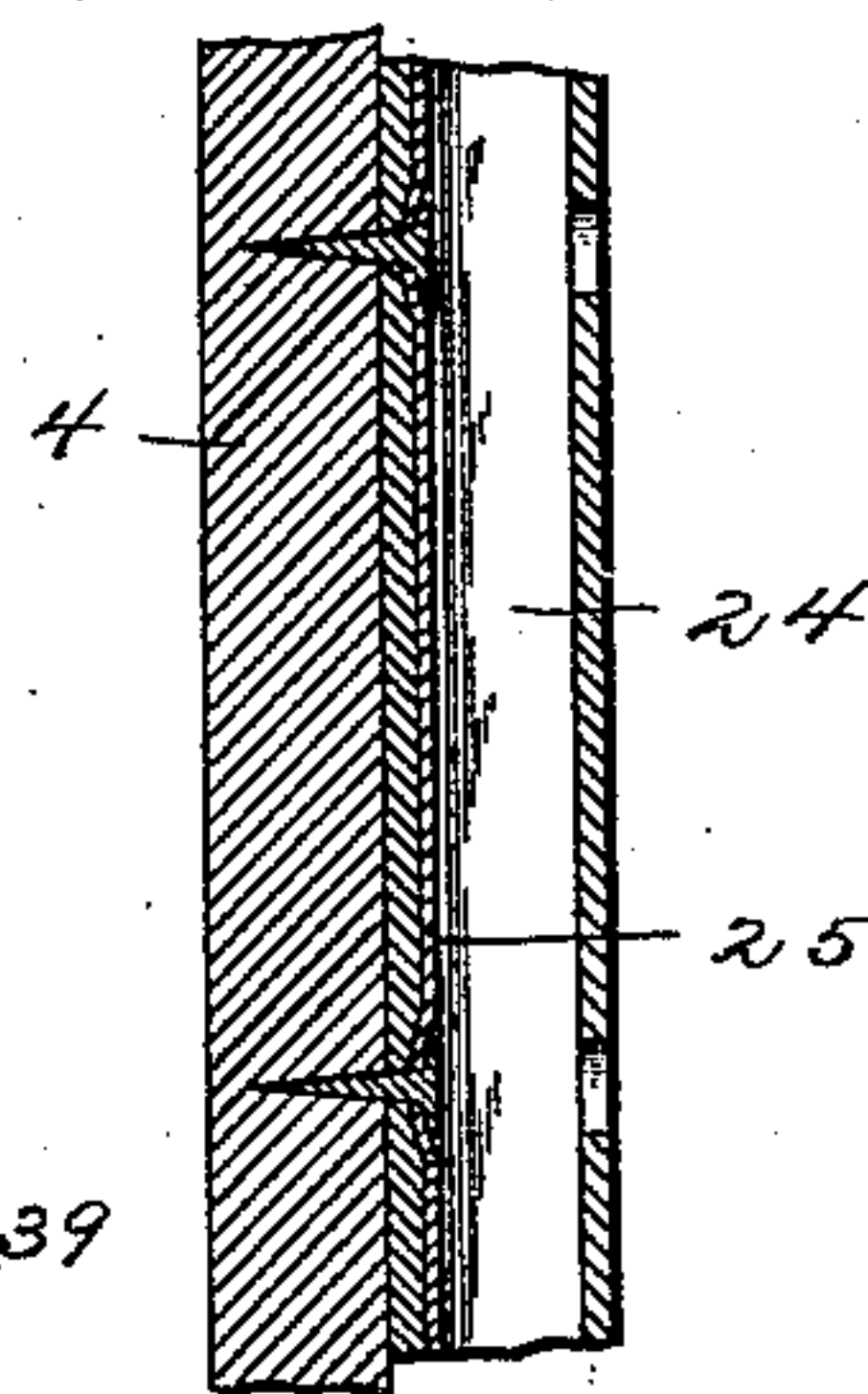


FIG. 9.

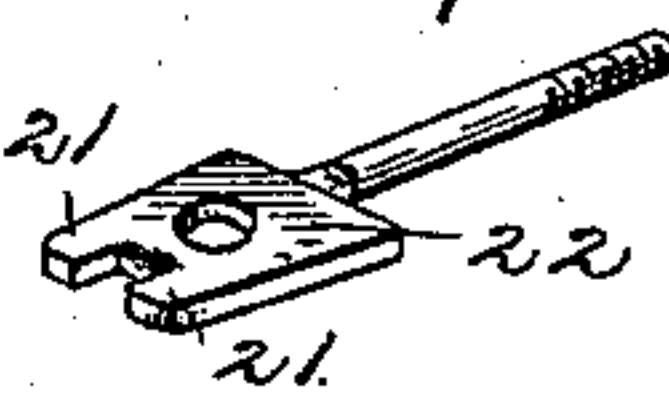
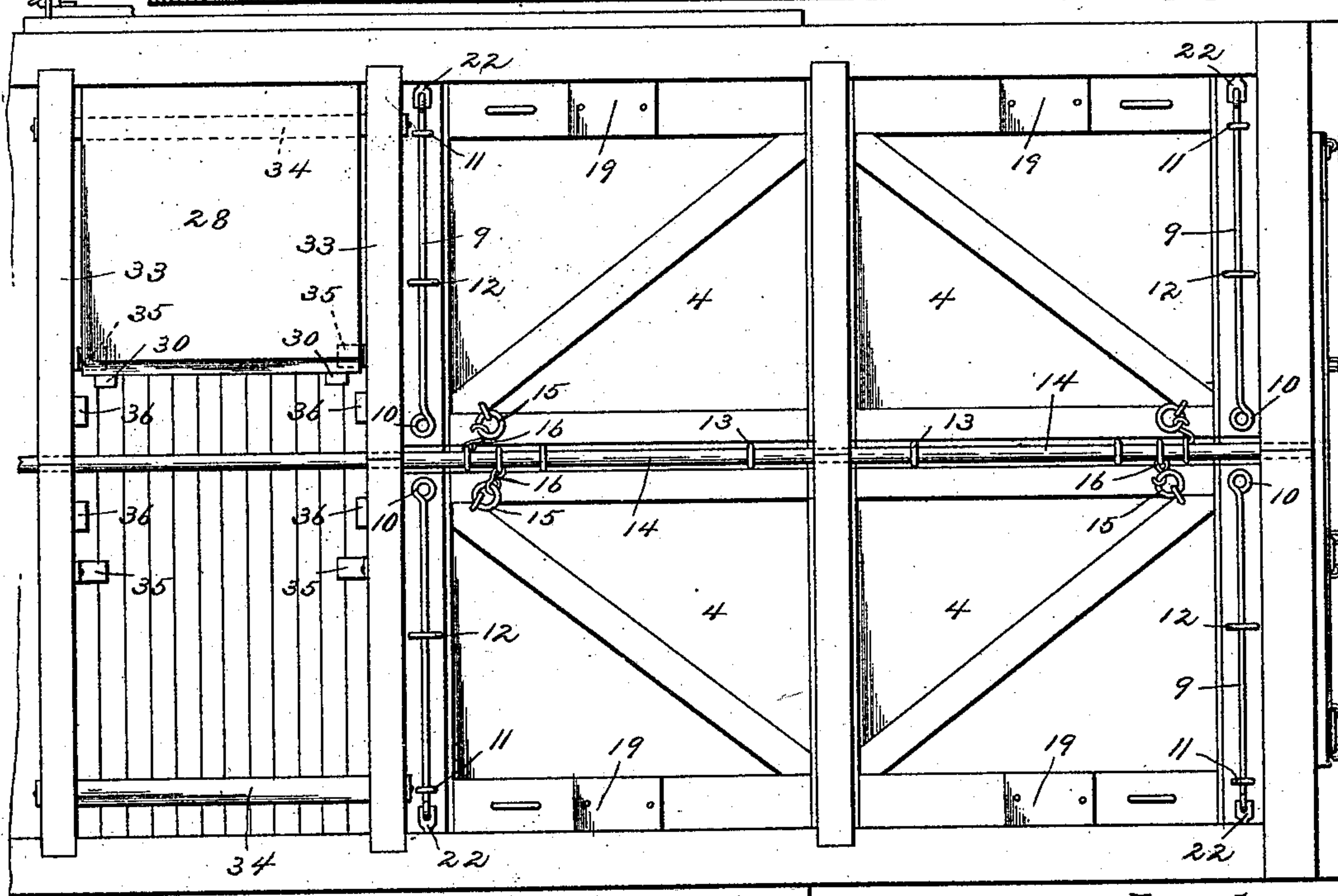


FIG. 6.



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# UNITED STATES PATENT OFFICE.

JOHN D. GRABILL, OF ROANOKE, VIRGINIA, ASSIGNOR OF ONE-FOURTH TO  
MARK C. PRICE, OF SAME PLACE.

## COMBINED STOCK AND BOX CAR.

SPECIFICATION forming part of Letters Patent No. 553,193, dated January 14, 1896.

Application filed April 20, 1895. Serial No. 546,500. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN D. GRABILL, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented a new and useful Combined Stock and Box Car, of which the following is a specification.

The invention relates to improvements in combined stock and box cars.

10 The object of the present invention is to improve the construction of freight-cars and to enable a stock-car to be readily converted into a box-car and to provide convenient means for compactly storing the false sides necessary for closing the open-work sides of a stock-car.

20 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

30 In the drawings, Figure 1 is a side elevation of a freight-car constructed in accordance with this invention and shown arranged to form a box-car. Fig. 2 is an end elevation of the same. Fig. 3 is a central longitudinal sectional view. Fig. 4 is a transverse sectional view, the parts being arranged as shown in the preceding figures. Fig. 5 is a similar view, the false sides being folded against the top of the car. Fig. 6 is a plan view of the same, the top of the car being removed. Fig. 7 is a vertical sectional view of one of the sliding doors. Fig. 8 is a detail sectional view of the tubular weather-strip. Fig. 9 is a detail view of one of the fastening devices for hinging the link-rods to the car-body.

40 Like numerals of reference indicate corresponding parts in all the figures of the drawings.

50 1 designates a stock-car body having open-work sides of the ordinary construction and provided at the bottom of the sides with horizontal base-boards 2, the upper edges of which are beveled toward the outer faces of the base-boards, and are adapted to interlock with similar beveled lower edges 3 of false sides 4. When the sides 4 are in operative position, as illustrated in Figs. 1 to 4, inclusive, they are arranged between the base-boards 2 and horizontal cleats or bars 5, and

the upper edges 6 of the base-boards are covered by metallic strips, which protect them from wear. The upper edge 7 of the false side and the lower edge 8 of the horizontal cleat or bar 5, are beveled downward from the inner faces of those parts to the outer faces thereof, whereby an effective joint is provided to prevent water from percolating through the cracks at the top and bottom of the false sides, and the beveling at the bottom of the false sides forces the false sides tightly against the sides of the body.

60 The false sides may be constructed of any suitable material and are suitably braced, and are connected at their ends and at an intermediate point with the top of the car-body by link-rods 9 hinged at their upper ends at the top of the car-body at the sides thereof and slidingly connected with the false side. The upper terminals of the link-rods 9 are provided with eyes which are linked into staples or other suitable fastening devices of the car-body, and they are arranged to swing upward and downward. The lower ends of the link-rods are provided with heads 10, preferably formed by bending the rod on itself in the shape of an eye, and the link-rods are arranged in upper and lower staples or guides 11 and 12. The upper guide, 11, is of less width than the head 10 and prevents the link-rod from becoming disengaged from the false side, and the lower guide is of greater size than the head 10 and permits the latter to pass freely through it, in order that the false sides may be arranged in their operative and folded positions. When the false side 4 is folded, in order that the car-body may be used for stock, it is swung upward and slides on the link-rods until its upper or outer edge 7 is close to the adjacent side of the car-body and the bottom or inner edge 3 is automatically engaged by supporting-hooks 13 depending from a longitudinal rod 14. The rod 14 extends along the center of the top of the car and projects through the ends thereof, and its terminals are threaded and provided with nuts, located on the outer faces of the ends of the car-body. The hooks 13 are provided at their upper ends with eyes to receive the longitudinal rod, and have sufficient weight to hang steadily in a vertical position, and



when the bottom edges of the false sides swing upward they push the hooks laterally out of a perpendicular and the hooks swing back automatically and engage the false bottoms.

The false sides are provided at their bottoms with rings 15, which are engaged by hooks of short chains 16 depending from the longitudinal rod 14 and forming safety devices to prevent any liability of the false sides accidentally becoming disengaged from the supporting-hooks and swinging downward. The rings 15 also serve as convenient handles for facilitating the manipulation of the false sides.

The false sides are locked against the sides of the car-body by sliding bolts 18, mounted for vertical movement on the horizontal bars or cleats 5, and engaging the upper edges of the false sides, which are provided with wear-plates 19, and which also have strips of metal arranged adjacent to the link-bars to prevent any liability of the false sides being unnecessarily or prematurely worn or disfigured by the link-rods.

The base-boards 2 are provided at their inner faces with plates 20, projecting upward from the upper edges of the base-boards and forming stops to prevent the lower edges of the false sides from becoming disengaged from the beveled edges of the base-boards.

The upper or outer ends of the link-rods are held against lateral swinging by lugs 21, projecting from the eyes of the fastening devices 22. These fastening devices consist of shanks provided at their outer ends with eyes to receive the eye of the link-rods and the said lugs 21 projecting from the eye or opening of the shank and located at each side of the link-rod.

The car-body is provided at the lower edges of the base-boards with beveled weather-strips 23, located at the outer sides of the base-boards, and the false sides are provided on their outer faces with rubber tubes 24, located at the top, bottom and ends of each false side, and secured to the same by metal strips 25 arranged within the tubes and attached to the false side by suitable fastening devices. This construction provides an elastic compressible weather-strip, which is interposed between the false side and the car-body, thereby making a complete air-tight joint.

The car-body is provided at opposite sides with the usual sliding doors, having a lower slatted portion and provided at the top and bottom of the same with beveled cleats 26 and 27, and the open ventilating or slatted portion of the door is closed by a solid removable section 28, having its upper and lower edges beveled similar to those of the false sides, and interlocking with the bottom strip or cleat 27 and fitting snugly against the upper one, 26. The solid removable section 28 is provided on its outer face with vertical bars 30, fitting between the adjacent bars of the slatted portion of the sliding door and projecting below the

lower edge of the removable section 28 and interlocking with the bottom cleat 27 and preventing the section 28 from being disengaged at the bottom. At the top, near the upper edge, the removable section 28 is provided with outward-extending staples 31, which project through openings of hasps 32, mounted on the sliding door, and the section 28 may be secured by pins or any suitable fastening devices located on the outer faces of the hasps and passing through the projecting portions of the staples 31.

When the car-body is arranged to serve as a stock-car and the false sides are folded, the sections 28 are removed and are stored at the top of the car between the central carlings or cross-pieces 33, and are supported adjacent to the sides of the cars by metal bars or strips 34, and at the center of the car by pivoted hooks 35. In placing the sections 28 in the supports or racks formed by the bars 34 and the hooks 35 the latter are swung inward out of the way to permit the sections 28 to be placed in position, and the hooks are then turned down in position to support the inner ends of the sections. The sections are prevented from moving inward too far and from becoming disengaged from the supporting-bars 34 by blocks 36, mounted on the opposite faces of the parts 33 and located adjacent to the central longitudinal rod 14.

Each sliding door of the car-body is provided at the top and bottom of its slatted portion with metal bracing-strips 37, and it is provided at its front edge with a rigid plate or hasp 38, adapted to project through a staple and to receive a suitable lock or seal and provided with a perforation for the reception of the same. The rear edge of the door is provided with a plate or fastening device 39 and is adapted to be connected with a link 40, hinged to the car-body in rear of the ways of the sliding door.

The car-body is provided at each end with a ventilating-opening 41 and is provided at the top and bottom thereof with ways 42, extending transversely of the car-body, and receiving a pair of sliding doors 43 and 44. The door 43 is a solid one and is adapted to cover the opening when the car is arranged to serve as a box-car, and the other door 43 is provided with a grating and is employed when the car-body is used as a stock-car. The doors 43 and 44 are provided at their outer edges with hasps adapted to engage staples at the sides of the car-body, and the door 44 is provided at its inner edge with a hasp to engage a staple at the inner edge of the other door 43. The doors are locked together, and by locking one or the other to one side or the other of the car-body either door may be secured in front of the opening 41.

When the car is used for stock, a bar 45 is mounted horizontally in each door-opening, and is connected with the adjacent side of the car-body by a chain. One of the door-posts is provided intermediate of its ends



with a rectangular socket to receive one end of the bar 45, and the other door-post has a recess to receive the other end of the bar. The recess forms a shoulder at its bottom, and is open at the top, whereby the bar 45 may be readily mounted in position by first inserting one end in the rectangular socket, when it is in an inclined position, and then lowering the other end into the recess. The horizontal bar is adapted to prevent stock from pressing against the car-door and forcing the same outward and injuring it.

It will be seen that the freight-car may be readily transformed into a stock or box car, that the false sides may be compactly stored when not in use, and that water-tight and air-tight joints are formed when the false sides are mounted in position for forming a box-car.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. The combination with a stock car body having sides with open-work lower portions and solid upper portions, link rods arranged at the sides of the body and depending from the top thereof and hinged at their upper ends to the body, the false sides detachably mounted on the lower portions of the inner faces of the sides of the car body, to close the open work thereof, and loosely connected at their upper edges with the link rods and adapted to slide upward thereon the entire length thereof, whereby the false sides are adapted to be swung upward against the top of the car body, and a device for supporting the free edges of the false sides when folded, substantially as described.

2. The combination with a stock car body having sides with open-work lower portions and solid upper portions, link rods hinged at their upper ends within the car body at the top thereof and capable of a swinging movement only and arranged at the sides of the car body, the false sides interlocked at their lower edges with the sides of the car body, for closing the open-work portions thereof,

and provided on their inner faces with guides loosely receiving the said link rods and adapted to slide thereon the entire length thereof, whereby the false sides are adapted to slide upward on the link rods to the top of the car and to be swung upward against the same, and supporting hooks centrally arranged at the top of the car body and adapted to engage the free or bottom edges of the false sides, substantially as described.

3. The combination of a stock car body having sides with open-work lower portions and solid upper portions, the base boards arranged at the bottom of the sides and having outwardly and downwardly beveled upper edges, the horizontal cleats located at the top of the open-work and the sides of the body and having beveled lower edges, the link rods hinged at their upper ends to the car body at the top thereof and located at the sides of the same, the false sides loosely connected with the link rods and adapted to slide thereon the entire length thereof, said false sides having beveled upper and lower edges and interlocked with the base boards, fastening devices for detachably securing the upper edges of the false sides to the said cleats, and means for supporting the free edges of the false sides when folded, substantially as described.

4. The combination of a stock car body having open-work at the lower portions of its sides, the longitudinal rod mounted in the car and located at the top thereof, adjustable hooks depending from the rod, the link rods hinged at their upper ends within the car body at the tops thereof adjacent to the sides of the same, the false sides loosely connected with the link rods and arranged to slide thereon the entire length thereof, rings located at the bottoms of the false sides, and safety devices for engaging the rings when the sides are folded and in engagement with the said hooks, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN D. GRABILL.

Witnesses:

MARK C. PRICE,  
L. BEIN, Jr.