J. DAMM.

CAR DOOR.

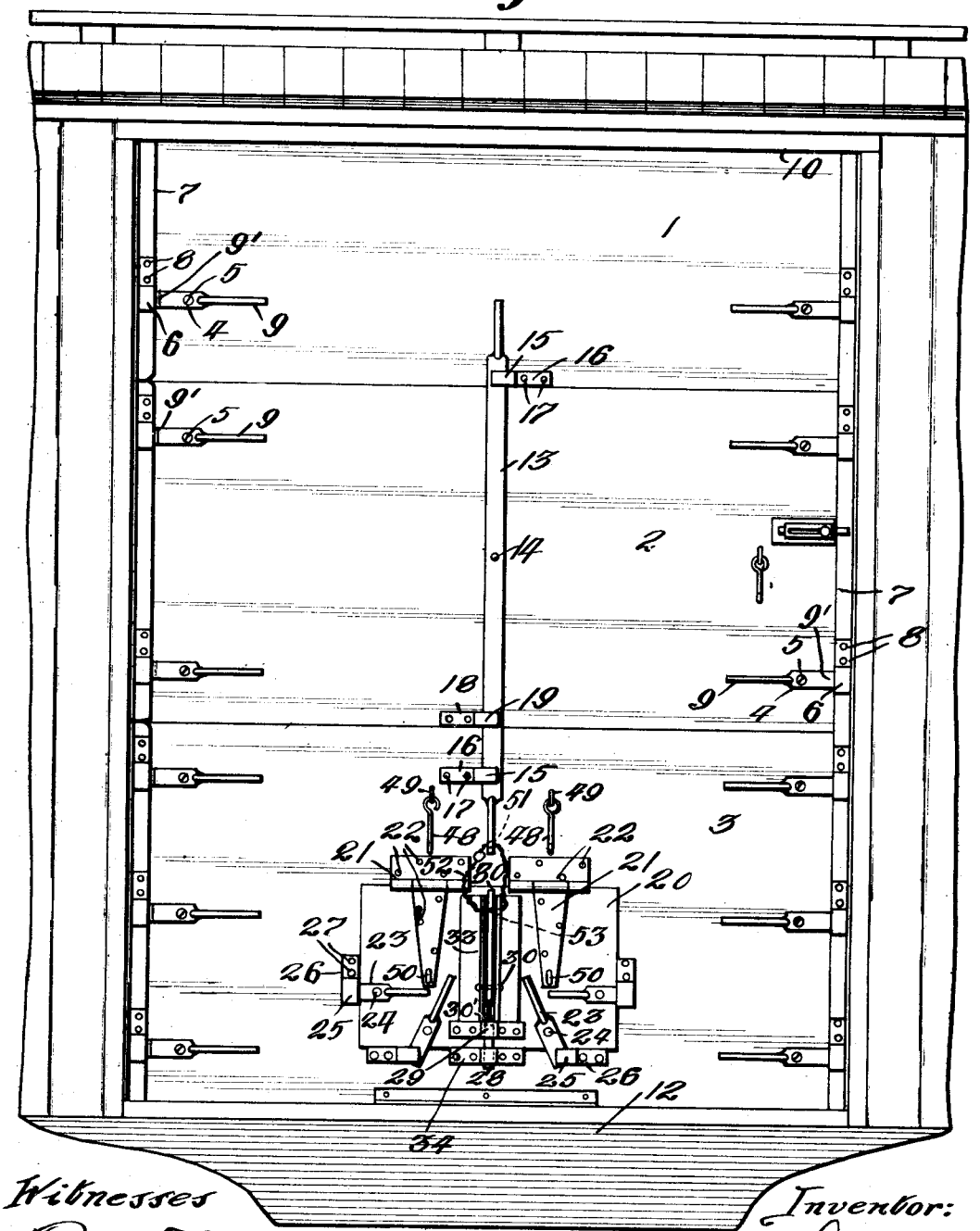
APPLICATION FILED NOV. 23, 1911.

1,050,109.

Patented Jan. 14, 1913.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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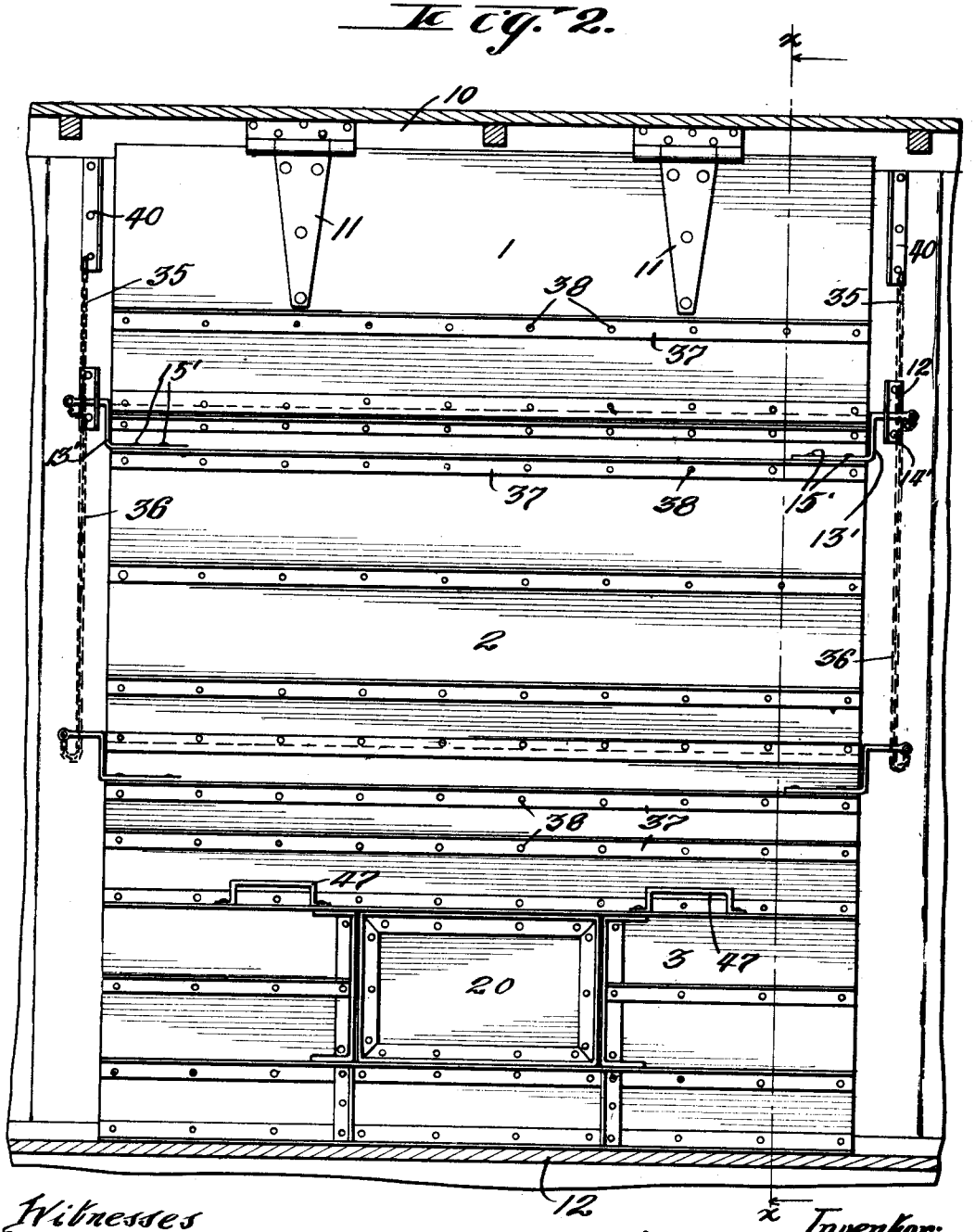
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3

Fig. 3.

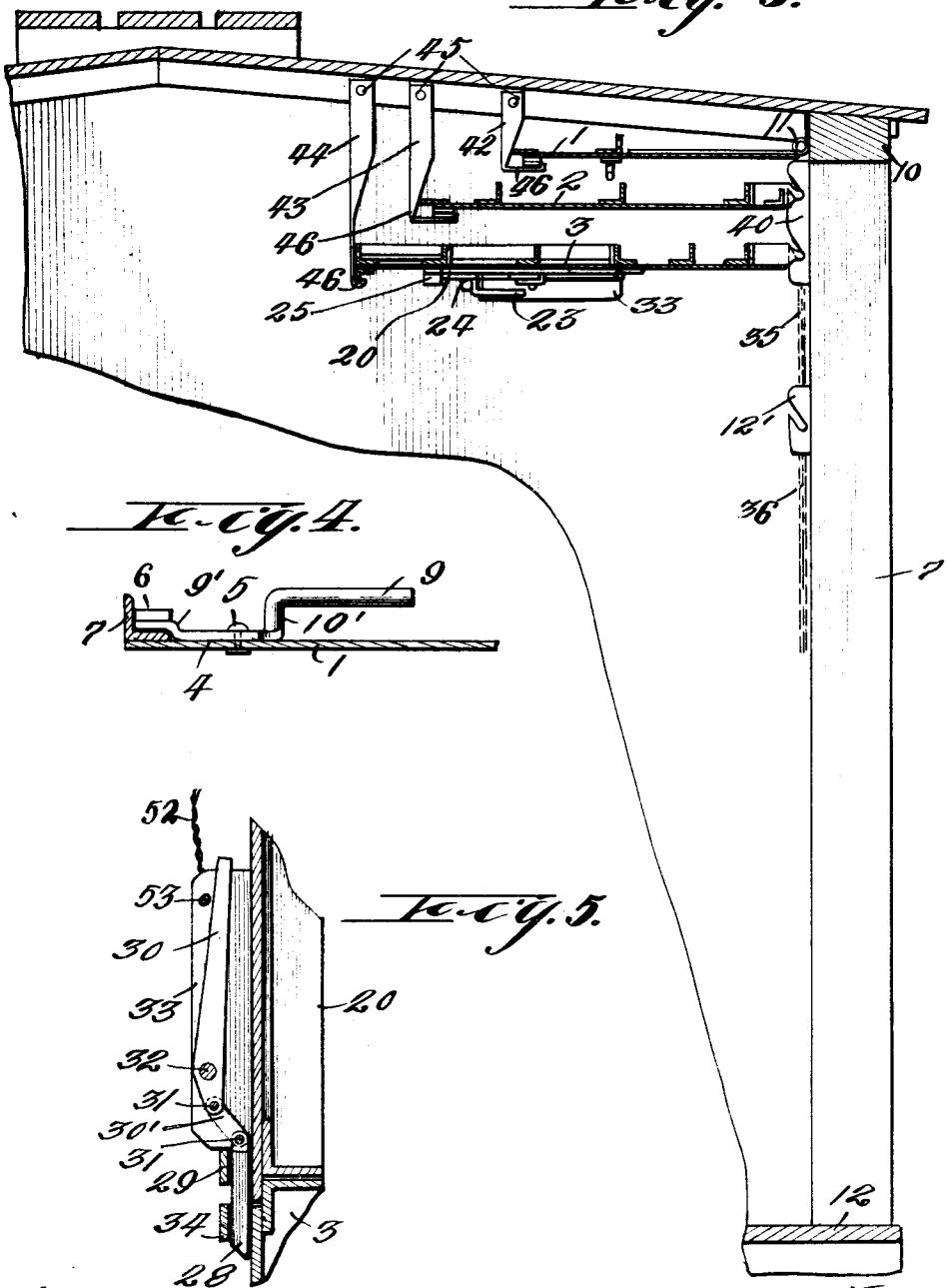

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES DAMM, OF MANITOWOC, WISCONSIN.

CAR-DOOR.

1,050,109. Specification of Letters Patent. Patented Jan. 14, 1913.

Application filed November 23, 1911. Serial No. 661,878.

To all whom it may concern:

Be it known that I, JAMES DAMM, a citizen of the United States, residing at Manitowoc, county of Manitowoc, and State of Wisconsin, have invented new and useful Improvements in Car-Doors, of which the following is a specification.

My invention relates to improvements in sectional doors for railway cars, and it pertains to the construction of the several sections of the doors and the means for supporting said sections in both their closed and open position.

My invention is further explained by reference to the accompanying drawings, in which—

Figure 1 represents a front view of the door in its closed position, showing the several sections interlocked together. Fig. 2 represents a rear or interior view of the door in its closed position. Fig. 3 represents a vertical section of the car, showing the several sections of the door in their open position suspended from near the top of the car, and Figs. 4 and 5 are details of the fastening mechanism.

Like parts are identified by the same reference numerals throughout the several views.

1 represents the upper section, 2 the middle section, and 3 the lower section of the door. The several sections are respectively provided with locking levers 4 which are secured to the sections by pivotal bolts 5 around which they are adapted to turn a partial revolution as they are brought beneath the retaining lugs 6. The lugs 6 are secured to the side of the door frame 7 by a plurality of bolts 8. The locking levers 4 are respectively provided with handles 9 by which they are turned when the engaging members 9′ as the locking levers are being brought into and out of engagement with said lugs 6. The upper section 1 is suspended from the horizontal member 10 on the door frame by the hinges 11, the lower door section 3 is adapted to rest upon the lower side 12 of such frame, when the intermediate section 2 is suspended from the door frame by the brackets 12′ and angular members 13′. The brackets 12′ are rigidly secured to the sides of the door frame by the bolts 14′. The angular members 13′ are rigidly secured to the section 2 by a plurality of bolts 15′.

The several sections of the door are interlocked together, when in place, by the lever 13, and the lever 13 is pivotally supported at or near the center of the central section 2 on the pivotal bolt 14, and is adapted to simultaneously engage at its respective ends beneath the lugs 15 of the brackets 16, and said brackets 16 are respectively secured to the upper and lower sections 1 and 3 by the bolts 17, whereby all three of said sections, when in place, are locked together and mutually reinforce and support each other. The central section 2 is provided with an additional bracket 18 which is provided with an off-set 19, which also engages one side of the lever 13. The bracket 18 is secured in place by the bolts 19. The lower section 3 is preferably provided with a smaller door 20, which is secured at its upper side to said section 3 by the hinges 21 and fastening bolts 22, and is adapted to be locked in place, when closed, by a plurality of locking levers 23. The locking levers 23 are pivotally connected with said door 20 by the bolts 24, and said levers are adapted, when the door is closed, to engage beneath the lugs 25 of the retaining brackets 26. The brackets 26 are secured to the door section 3 by a plurality of bolts 27. As an additional means of securing the door 20 in its closed position, I preferably provide the same with a sliding bolt 28, which is connected with said door by the retaining bracket 29. The upper end of said bolt 28 is connected with an operating lever 30 by the link 30′ and pivotal pins 31, and said lever is connected with said door 20 by the pivotal bolt 32 and supporting flanges 33, whereby as said lever is turned down on its pivotal bolt 32, said sliding bolt 28 will be withdrawn from the keeper 34, which keeper 34 is rigidly connected with the door section 3. The door sections 2 and 3 are adapted, when disengaged from the brackets 12′, to be suspended from the door frame by the flexible members 35 and 36, said flexible members 35 and 36 being connected at one end with the door frame, and at their opposite end with said sections through the angular members 13′, as shown in Fig. 2. The several door sections 1 to 3 inclusive, are reinforced with a plurality of longitudinal angle bars 37, which bars are secured to said sections by a plurality of rivets or bolts 38. The engaging members 9′ of the locking levers are adapted to bear against the flat opposing surface of the sections, while the handles 9, (see Fig. 4),

are connected therewith by the intermediate member 10′, which is formed at right angles to said handle, whereby the handle is supported at a slight distance from the door sections, and may be more readily grasped by the hand of the operator.

When the several door sections 1 to 3 inclusive, are not in use, the upper edges of the two lower sections are suspended from the bracket 40, while the upper edge of section 1 is connected with the door frame through the hinges 11, while the opposite sides of said door sections are suspended from the top of the car through the swinging hooks 42, 43 and 44, said hooks being pivotally connected to the top of the car through the pivotal bolts 45, while their lower ends 46 are adapted to engage beneath the edges of the door sections, as shown in Fig. 3. The lower section 3 is preferably provided on its rear side with handles 47, when the same may be more conveniently handled as it is being raised and lowered. 48, 48 are hooks, which are connected with the door section 3 by staples 49, 49, and are adapted, when the door 20 is open, to engage the staples 50, 50, which are connected with said door, whereby the latter is retained in its open position.

While I have shown and described a door 20 formed in the lower door section 3, I wish it to be understood that a similar door may, if desired, be in like manner connected with the upper section 1, and the same provided with similar fastening mechanism for securing it in its closed position. The lever 13 is provided at one or both of its ends with an aperture 51 for the reception of the sealing ring 52 and the flanges 33 are also provided with an aperture 53 for the reception of the opposite side of said sealing ring, whereby when said sealing ring 52 is inserted through the apertures 51 and 53, said lever 13 and the lever 30 will be securely retained in place by said sealing ring 52, whereby it will become impossible to open either the small door 20 or any of the door sections without destroying said sealing ring.

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

In a car door of the class described, the combination of a plurality of separate door sections arranged one above another in a vertical series, means for temporarily securing the respective ends of said door sections to the respective sides of the door inclosing frame, a lever pivotally connected near its center to the central door section and provided at one end with an aperture for the reception of a sealing ring, said lever being adapted when in a vertical position, to engage at its respective ends the off-set brackets affixed to the two next adjacent door sections, a relief opening formed in the lower door section, a door for closing said opening, a slidable bolt connected with said door, an operating lever pivotally connected at one end to said slidable bolt and at an intermediate point between its respective ends with said door, a sealing ring, and means for connecting said ring with both of said levers, said sealing ring being adapted, when in place, to connect said levers together, whereby said door sections and relief door are secured in their closed position.

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

JAMES DAMM.

Witnesses:
A. L. HAUGEN,
HILDA HENRIKSON.