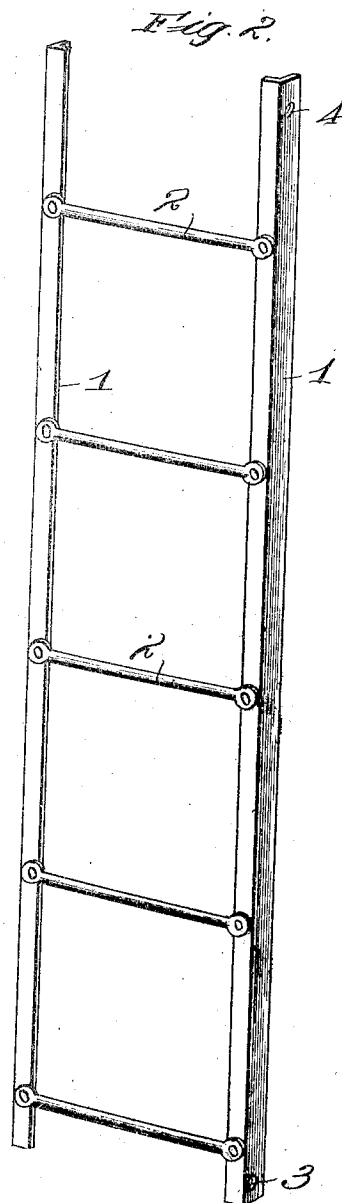
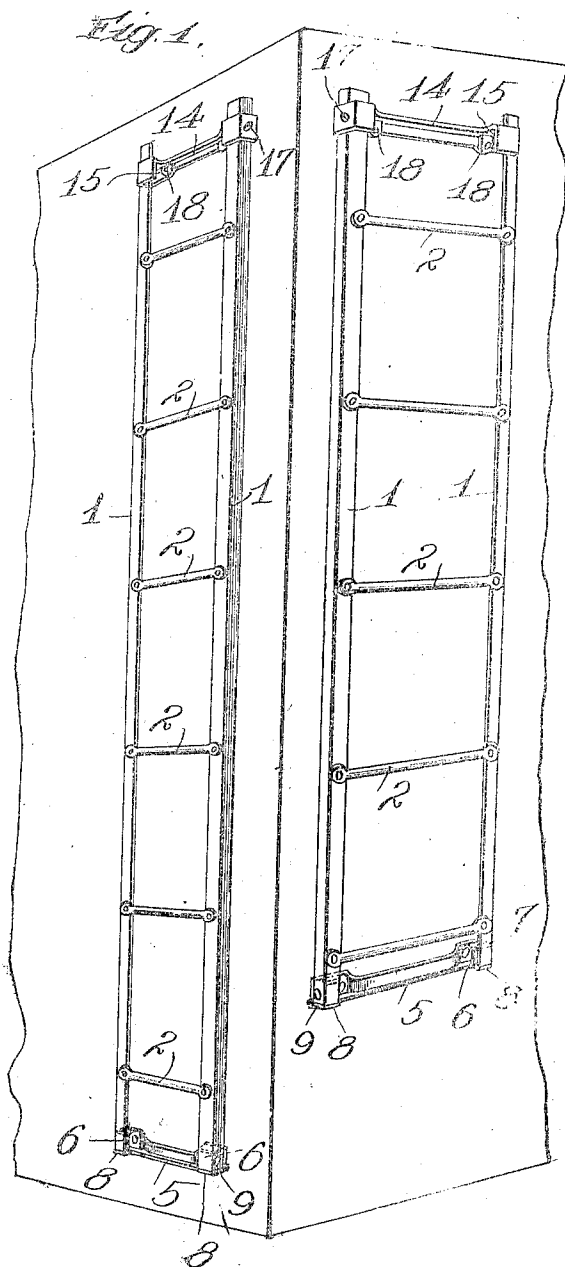


1,043,614.

D. R. MacBAIN.
RAILROAD CAR LADDER.
APPLICATION FILED MAR. 5, 1912.

Patented Nov. 5, 1912
2 SHEETS—SHEET 1.



WITNESSES

W. A. Pauberschmidt
J. M. Stynkoop

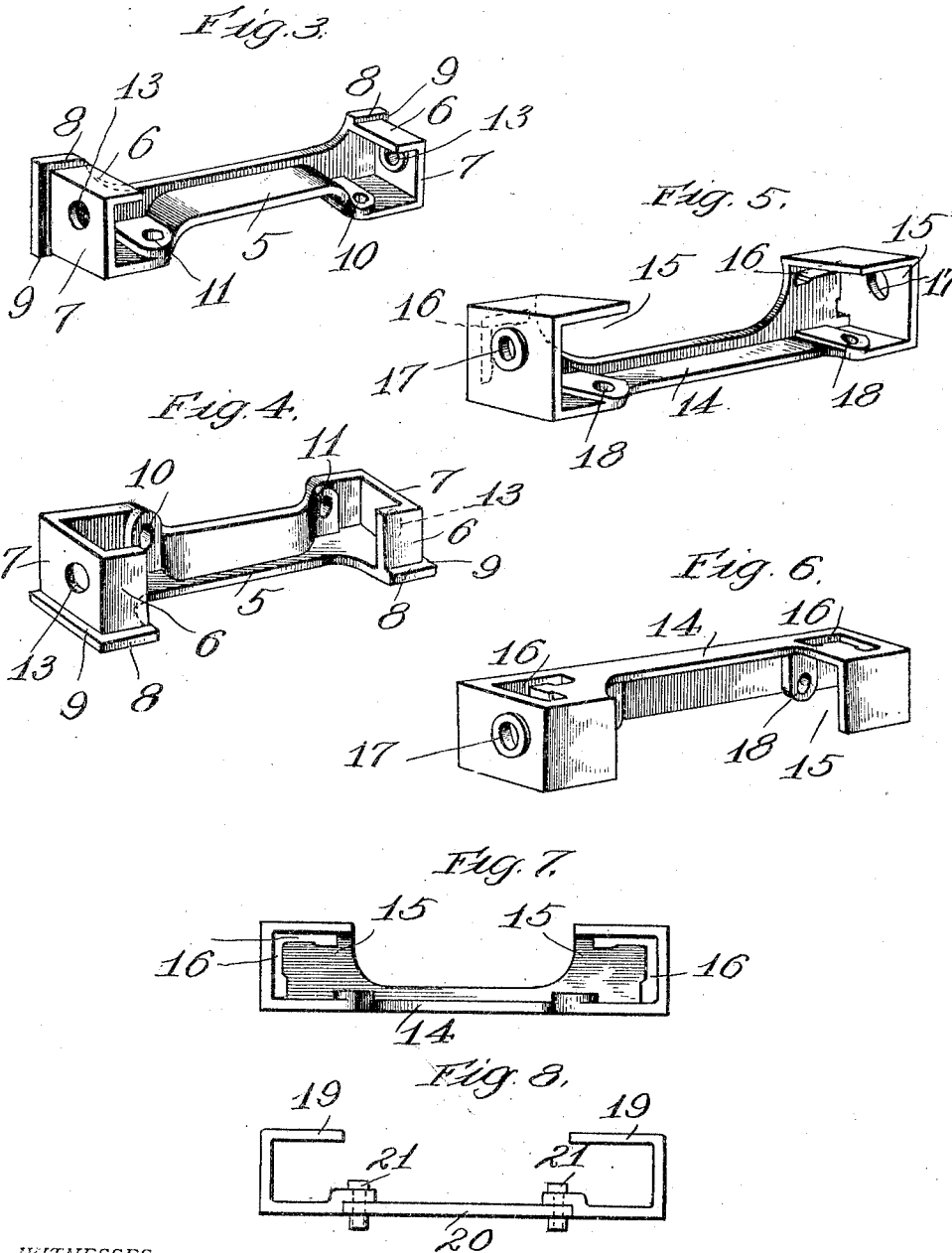
INVENTOR

Donald R. MacBain
By Knight Bros.
Attorneys

1,043,614.

Patented Nov. 5, 1912.

2 SHEETS—SHEET 2.



WITNESSES

C. A. Bauberschmitt
J. W. Dykkoop.

INVENTOR

Ronald R. MacBain
By Knight Bros. Attorney

UNITED STATES PATENT OFFICE.

DONALD R. MACBAIN, OF CLEVELAND, OHIO.

RAILROAD-CAR LADDER.

1,043,614.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed March 5, 1912. Serial No. 621,333.

To all whom it may concern:

Be it known that I, DONALD R. MACBAIN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Railroad-Car Ladders, of which the following is a specification.

The object of my invention is to provide an inexpensive and efficient ladder which can be easily and quickly applied to new or old equipment, to comply with recent requirements of the safety appliance law and not necessitate expensive alterations in present construction of car bodies.

The special advantages I claim for my improved ladder are its extreme simplicity of construction and elimination of a large number of bolts usually employed in securing ladders of present construction to the car; also to provide an easy means of removal and application of the ladder for repairs without entering a loaded car or seriously delaying the same when in transit, a few minutes only being required to apply a new ladder to a car on a railroad having these ladders in stock at repair points.

In the drawings, Figure 1 is a perspective view of a railroad car body broken away, showing my improved ladder secured to the side and to the end of the car body; Fig. 2 is a perspective view of the ladder; Figs. 3 and 4 are perspective views of the lower supporting bracket; Figs. 5 and 6 are perspective views of the upper supporting bracket; Fig. 7 is a bottom plan view of the upper supporting bracket; and Fig. 8 is a top plan view showing another embodiment of my invention.

1 represents the stiles of the ladder, which for purposes of illustration I have shown as being constructed of angle iron, this being a structural shape giving maximum strength and minimum weight. The rungs 2 are preferably riveted to the stiles, thus completing the ladder. Each stile is provided with bolt openings 3 and 4, but as will be hereinafter pointed out, the bolt openings 4 are not necessary.

The lower supporting bracket comprises a permanent spacing bar 5 at each end of which is formed bearing faces 6 and 7 terminating at the bottom in ledges 8 and 9 on which ledges the ends of the ladder stiles have vertical abutment. The spacing bar is

provided with openings 10 and 11 through which bolts or lag screws pass to secure the bracket to the car body; the position of this bracket being near the bottom of the car body as shown in the drawings. The walls or bearing faces 7 are each provided with a bolt opening 13. While I have shown the spacing bar bowed out to prevent the lodgment of snow, ice and cinders, it will of course, be understood that this is not essential to the successful operation of my invention.

The upper supporting bracket comprises a spacing bar 14 and pockets 15 at each end of the spacing bar which are open at one side and at the bottom. The top wall of each pocket is provided with an orifice 16, through which the upper ends of the stiles 1 may pass, as shown in the drawing. The pockets are provided with bolt openings 17 which register, in some instances, with the bolt opening 4 in the ladder stiles 1. The spacing bar is provided with openings 18 through which bolts or lag screws may pass to secure the bracket to the car body. This upper bracket, as shown, is secured to the car body just below the eaves. It will be noted that in the drawings the orifice 16 is of the same shape as the cross section of the ladder stiles.

The upper and lower brackets are secured to the car in the positions shown in the drawing. The ladder may be secured to the car by one standing on the ground by elevating it until the upper ends of the stiles are inserted in the pockets 15 of the upper bracket, whereupon the lower ends of the stiles are pressed against the bearing faces 6 and 7 of the lower bracket with the end faces of the stiles resting upon the ledges 8 and 9 which afford vertical abutment for the stiles. The lower ends of the stiles are then bolted to the bracket 5 against displacement. The weight of a man ascending the ladder is practically all sustained by the ledges 8 and 9, therefore it is not absolutely necessary to insert bolts in the upper ends of the stiles to the upper bracket as the stiles are confined in the pockets 15 and thus held against transverse movement. Thus it will be seen that after the brackets are on, a new ladder may be substituted for a damaged ladder by simply removing the two bolts holding the ladder to the lower bracket and that this may be done by one standing on the ground. The bar portions 5 and 14 of

the brackets constitute permanent spacing means for the pockets and for the ladder stiles. The purpose of the orifices 16 in the upper brackets is to allow the upper ends of the ladder stiles to pass through the bracket, thus permitting some reasonable variation in the height of cars being equipped with the same standard length of ladder. In this event, the bolt holes in the pockets of the upper bracket and in the upper ends of the ladder stiles need not be used.

While I have shown the spacing bars 5 and 14 as integral with the ladder stile pockets and bearing surfaces, it will be understood that I may have the bar connection separately fitted to the pockets and bearing surfaces as shown in Fig. 8, wherein 19 are the pockets or bearing surfaces and 20 the spacing bar. These are joined together by the bolts or lag screws 21 which secure the bracket in its entirety to the car body.

I claim:—

1. The combination with a railroad car, of an upper supporting bracket secured to the outside of the car body adjacent to its top, a ladder comprising stiles with a plurality of rungs connected at their ends with said stiles, a lower supporting bracket secured to the outside of car body adjacent to its bottom, the lower portions of ladder stiles removably engaging with ends of said lower supporting bracket, the ends of ladder stiles resting upon supporting ledges projecting from walls of said lower bracket and bolt holes in and adjacent to lower ends of stiles registering with bolt holes in walls of bracket and bolts passing through said holes

for securing lower ends of ladder stiles to lower supporting bracket.

2. An upper bracket for a car ladder comprising a spacing bar, rectangular pockets at each end of the bar having top and side walls but no bottom wall, said walls constituting vertical bearing faces, the top wall having an L-shaped orifice through which the end of a ladder stile may pass.

3. A car ladder bracket comprising a spacing bar, vertical bearing faces at right angles to each other at each end of the bar, and horizontally disposed ledges extending from the base of said faces and at right angles thereto and constituting vertical abutments for a ladder.

4. The combination with a railroad car, of an upper supporting bracket secured to the outside of the car body adjacent to its top, a ladder comprising angle iron stiles with a plurality of rungs connected thereto, and a lower ladder supporting bracket secured to the outside of the car body adjacent to its bottom and comprising a spacing bar, vertical bearing faces at right angles to each other at each end of the bar against which the stiles of the ladder bear, and horizontally disposed ledges extending from the said bearing faces constituting vertical abutments for the lower ends of the ladder stiles.

The foregoing specification signed at New York this 13th day of Feby., 1912.

DONALD R. MacBAIN.

In presence of—

JAMES A. FLEMING,
CHAS G. RENWICK.