J. A. RYAN.

LADDER FOR FREIGHT CARS.

APPLICATION FILED JUNE 6, 1908.

902,331. Patented Oct. 27, 1908.

Fig. 1.

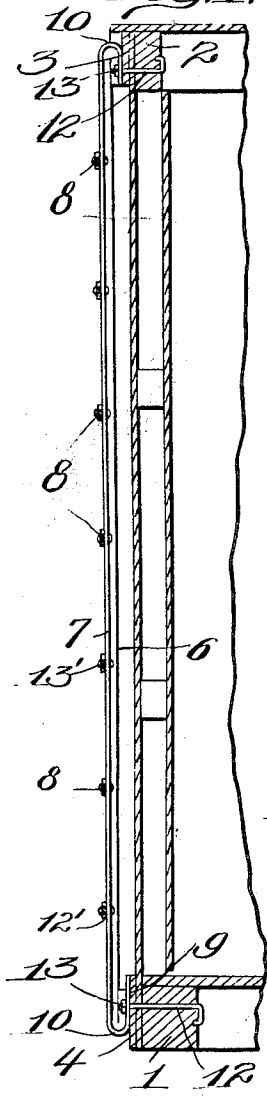


Fig. 2.

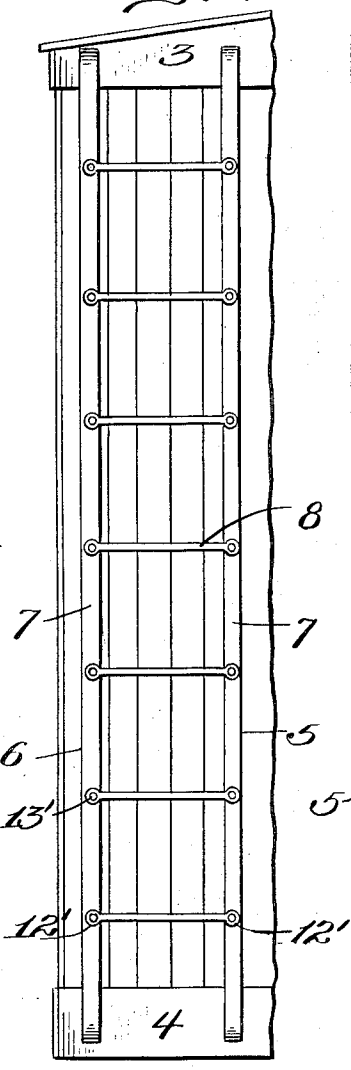


Fig. 3.

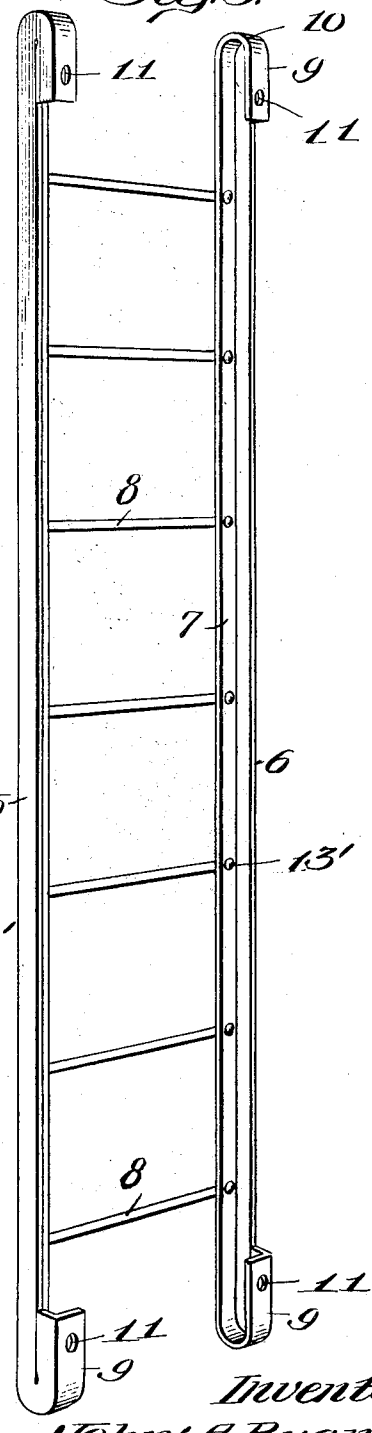


Fig. 4.

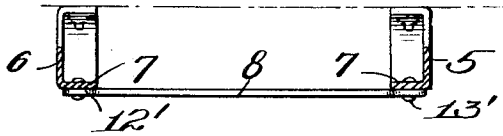
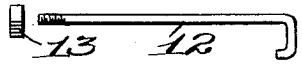


Fig. 5.



Witnesses,

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UNITED STATES PATENT OFFICE.

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LADDER FOR FREIGHT-CARS.

No. 902,331. Specification of Letters Patent. Patented Oct. 27, 1908.

Application filed June 6, 1908. Serial No. 437,124.

To all whom it may concern:

Be it known that I, JOHN A. RYAN, a citizen of the United States, residing at Washington city, in the District of Columbia, have invented new and useful Improvements in Ladders for Freight-Cars, of which the following is a specification.

This invention relates to ladders particularly adapted for freight cars and the object thereof is to provide in a manner as hereinafter set forth, a ladder having all the parts thereof formed of metallic material and further so constructed that when fixed to the car it will be spaced therefrom so that an adequate foothold can be had upon the rungs of the ladder when ascending or descending it.

Further objects of the invention are to provide in a manner as hereinafter set forth a metallic ladder which shall be simple in its construction, strong, durable, conveniently secured in position, readily set up and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings: Figure 1 is a longitudinal sectional view of the end portion of a freight car broken away, showing the adaptation therewith of a ladder in accordance with this invention. Fig. 2 is a view showing the end of a car broken away and illustrating the adaptation therewith of a ladder in accordance with this invention. Fig. 3 is a perspective view looking toward the inner face of a ladder in accordance with this invention. Fig. 4 is a transverse section of a ladder and Fig. 5 is a detail showing a J-bolt.

Referring to the drawings in detail, the reference character 1 denotes the end-sill of a car, 2 a cross-timber at the top of the car, 3 and 4 fascia boards or plates for the end-sill 1 and the cross-timber 2. A ladder in accordance with this invention is adapted to be fixedly secured in the manner as hereinafter set forth to the end-sill 1 and the cross-timber 2.

A ladder in accordance with this invention and as clearly shown in Fig. 3, comprises a pair of angle bars 5, 6, which constitute the side bars or rails of the ladder and are so disposed with respect to each other that the laterally extending portion 7 of each of the angle bars are positioned outwardly so as to have their outer faces constitute bearing surfaces for the rungs 8. The lateral portions 7 of the angle bars extend toward each other. Each of the angle bars at its top and at its bottom is bent upon itself as at 9 whereby each end of the angle bar is enlarged. The bent portions 9 constitute means for spacing the ladder from the end of the car as clearly shown in Figs. 1 and 4. Each end of each of the angle bars is rounded as at 10 and the laterally extending part of each bent portion is formed with an opening 11 through which is adapted to extend a holdfast device whereby the ladder can be fixedly secured in position. As shown, the holdfast device comprises a J-bolt 12 and a nut 13. The J-bolts 12 are adapted to extend through the end-sill 2, fascia board or plate 4 and an opening 11 at one end of an angle bar and through the cross timber and fascia board or plate 3 and opening 11 at the other end of an angle bar. The nuts 13 are mounted upon the J-bolts and abut against the laterally extending part of the bent portions 9.

The rungs 8 are at each end enlarged as at 12′ and each of the enlarged ends is formed with an opening whereby a rivet 13′ can extend therethrough and also through the laterally extending portions 7 of the angle bars. By such an arrangement the rungs are fixedly secured to the angle bars, as clearly shown in Figs. 2 and 4. By providing each of the ends of an angle bar with the bent portions, these latter abutting against and secured to the end of the car, the ladder is held away from the end of the car, as clearly shown in Fig. 1, so that there will be no inconvenience in obtaining a foot-hold upon the rungs when ascending or descending the car. The length of the ladder with respect to the end of the car is such as to terminate at a point removed from the bottom of the end-sill 1 and top of the cross-timber 2.

It is thought that the many advantages of a ladder constructed in accordance with the foregoing description, taken in connection with the accompanying drawings, can be readily understood, but it will be stated, however, that constructing a ladder in such a manner makes it unusually durable as well as

rigid and furthermore, one that can be very conveniently secured in position to the end of the car.

What I claim is:

1. A ladder comprising a pair of angle bars each having each end thereof bent upon itself to constitute a spacing means, the point of junction between the bent portion and the remaining part of the rail being rounded, each of said bent portions provided with an opening to receive a holdfast device for fixedly securing the ladder in position, said angle bars constituting the side rails of the ladder, and rungs fixedly secured upon the outer face of the laterally extending portions of the angle bars.

2. A ladder comprising a pair of angle bars each having each end thereof bent upon itself to constitute a spacing means, the point of junction between the bent portion and the remaining part of the rail being rounded, each of said bent portions provided with an opening to receive a holdfast device for fixedly securing the ladder in position, said angle bars constituting the side rails of the ladder, a plurality of rungs positioned against the outer face of the laterally extending portions of the angle bars, each of said rungs having each end enlarged and formed with an opening, and means extending through said openings and engaging with the laterally extending portions of the angle bars for fixedly securing the rungs in position.

3. A ladder comprising a pair of angle bars constituting the side rails and each of which is bent upon itself at each end to constitute a spacing means for the ladder, each of said bent portions having the lateral part thereof provided with an opening through which is adapted to extend a holdfast device for fixedly securing the ladder to the support, and rungs fixedly secured to the laterally extending portions of the angle bars.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN A. RYAN.

Witnesses:
N. Louis Bogan,
Chas. S. Hyer.