F. J. SCHROEDER.

FREIGHT CAR LADDER.

APPLICATION FILED JULY 8, 1915.

1,166,859. Patented Jan. 4, 1916.

FIG. 1.

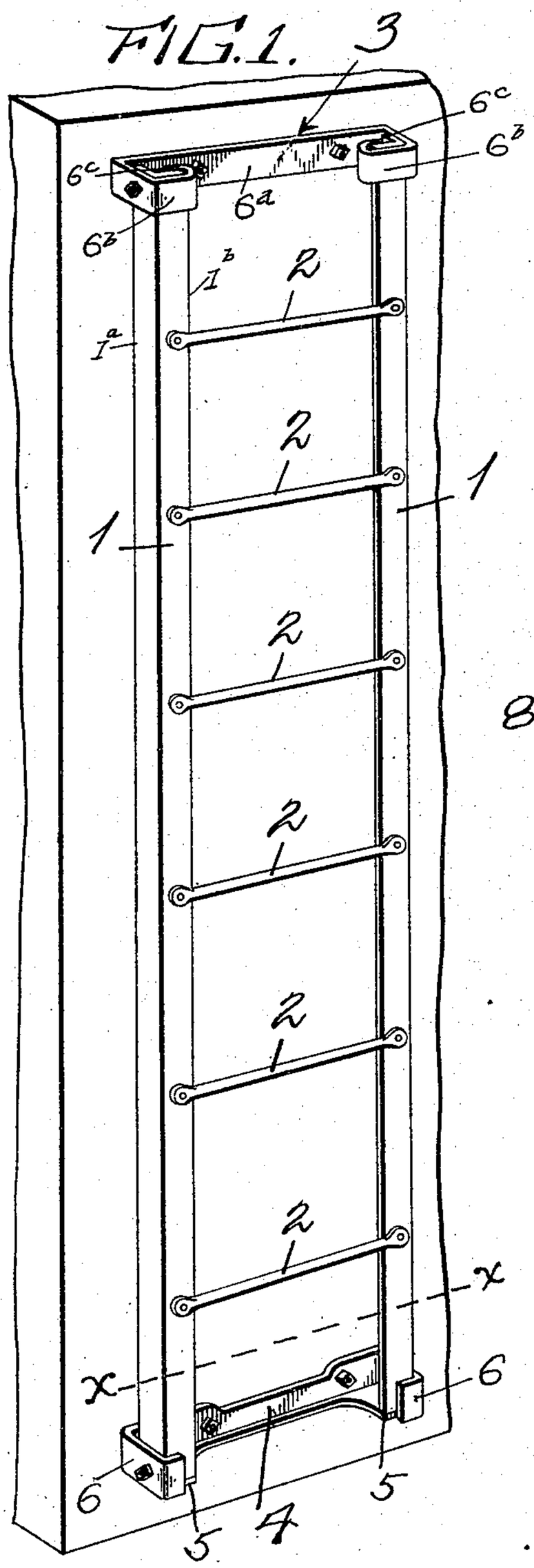


FIG. 2.

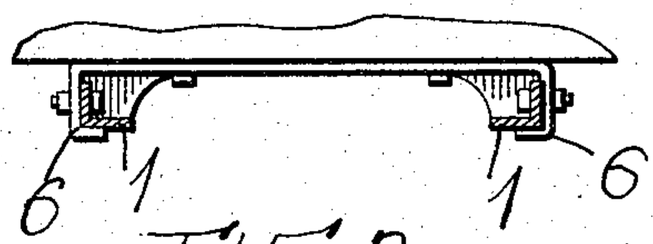


FIG. 3.

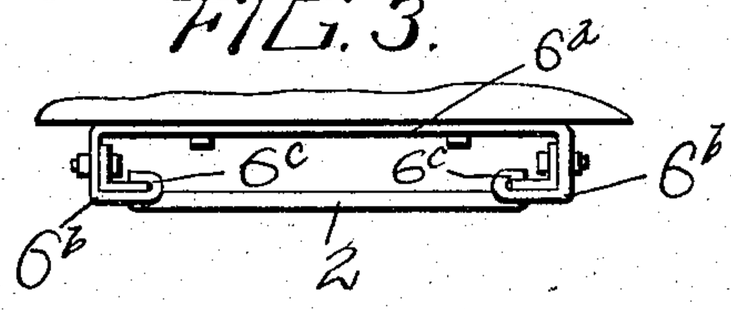


FIG. 4.

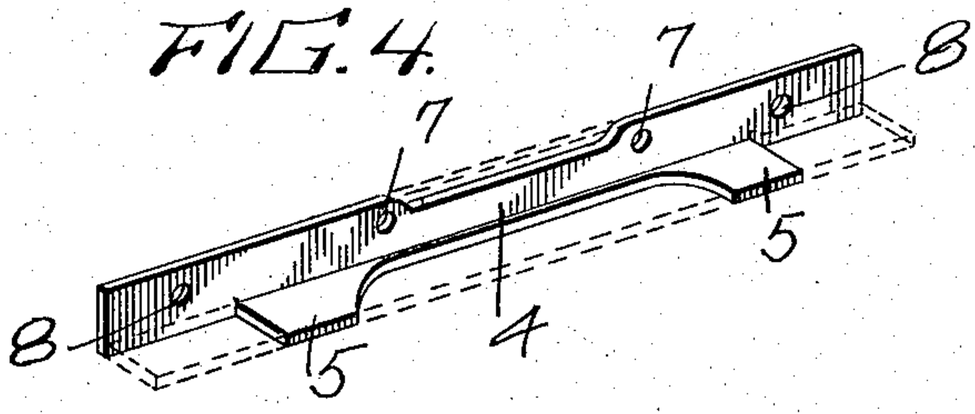


FIG. 5.

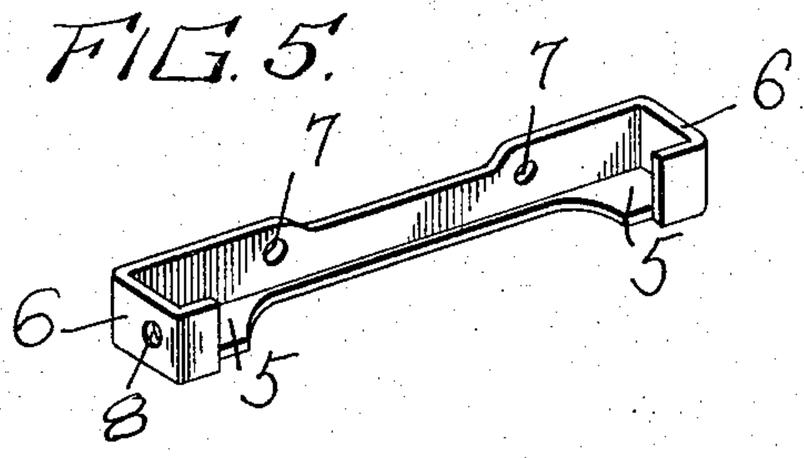
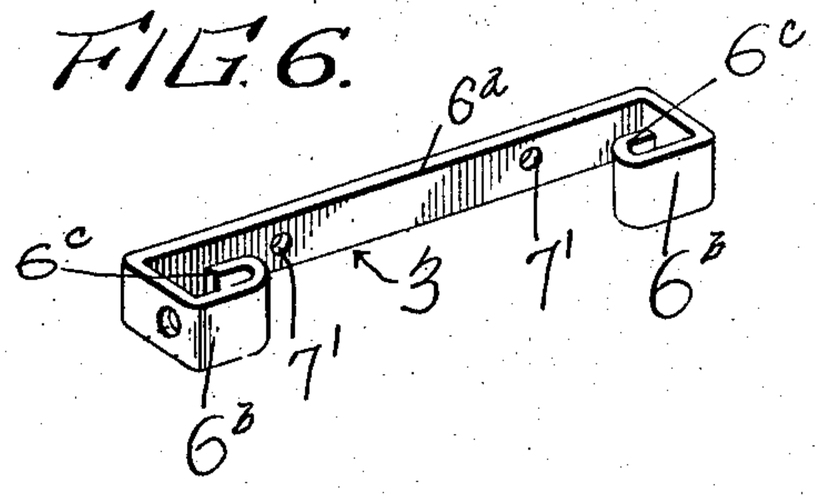


FIG. 6.



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FREIGHT-CAR LADDER.

1,166,859. Specification of Letters Patent. Patented Jan. 4, 1916.

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To all whom it may concern:

Be it known that I, FREDERICK J. SCHROEDER, 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 Freight-Car Ladders, of which the following is a specification.

This invention relates to ladders which are employed on freight cars and used by the brakeman in gaining access to the upper portion of a car.

The invention further relates to the method of producing the brackets which support the ladders on the side of the car.

It is well understood in this art that ladders which are of both commercial and practical value, must be so constructed that they may be readily detachable from the outside of the car, and without necessitating the removal of certain securing bolts from the inside of the car. These conditions are controlling in changing and replacing defective ladders and parts thereof.

In order that the salient features of this invention may be more readily appreciated, attention is directed to Patent No. 1,043,614, granted November 5, 1912, to Donald R. MacBain, in which is disclosed a ladder mounted upon cast brackets, of which the upper bracket is constructed with sockets through which the ladder stiles are threaded, in placing the ladder, while the lower bracket has seats which vertically support and laterally confine the lower ends so long as the stiles are bolted thereto.

One object of the present invention is to cheapen the production of the brackets employed in mounting ladders of this general type, to which end one feature of the invention resides in constructing the lower supporting bracket of stock material, such as angle iron preferably of a single piece, so formed and disposed that the stiles of the ladder will be vertically supported by ledges and laterally confined on the inside of walls which together provide embracing seats for their lower ends, while the upper supporting bracket, also constructed of stock material is made of a single strip of substantially thin and narrow metal, bent and shaped to provide an attaching plate, offsets extending outwardly therefrom, and return bend clips at the outer ends of said offsets, parallel to the attaching plate, in which the stiles may be confined laterally in all directions, and therefore spaced from the car wall, while permitting the stiles to slide vertically therein, when placing the ladder.

By constructing the brackets as above stated, not only is simplicity of construction attained, but it has been found that the ladders are very durable and efficient in use, and the ladder will remain safe, even though bolts employed to prevent upward displacement should become loose.

Another object, as will be apparent from reference to the accompanying drawings, and the detail description thereof, relates to the method of cutting and bending angle-bar stock material to form the lower bracket.

In said drawings: Figure 1 is a perspective view of a car body broken away, showing a ladder constructed in accordance with the present invention applied thereto. Fig. 2 is a view in cross section on the line *x*—*x*, Fig. 1. Fig. 3 is a top plan view of the upper supporting bracket, showing the ladder applied. Fig. 4 is a perspective view illustrating the method of producing the lower supporting bracket, the dotted lines indicating the portions cut away. Fig. 5 is a perspective view of the lower supporting bracket. Fig. 6 is a perspective view of the upper supporting bracket.

Referring to the drawings in detail, 1 represents the stiles of the ladder, which are preferably constructed of angle iron and placed with one flange perpendicular to the car wall, and the other parallel thereto.

2 represents the rungs which are preferably riveted to the stiles to form the completed ladder. The stiles are further provided with bolt openings near their ends.

The ladder thus constructed, is suitable for supporting on the end or side of a freight car; and in order that it may be so supported, and readily attached to and detached from the outside of the car, suitable top and bottom brackets 3 and 4 are provided. The bottom supporting bracket 4, as will be seen from Fig. 4, is preferably produced from a single piece of stock material, such as angle iron. The several steps which go to make up the finished bracket comprise cutting the angle iron to the desired length and then cutting away those portions of the horizontal and vertical flanges shown in dotted lines so as to leave supporting ledges 5 on the horizontal flange and extensions on

the vertical flange. By bending the extended portions 6 of the vertical flange across the ends of the ledges 5 and thence in front of the same, suitable embracing walls are obtained which, in connection with the ledges provide vertically supporting and laterally confining seats.

7 represents bolt openings for receiving the attaching bolts, and 8 represents bolt openings for securing the stiles of the ladder. When the bracket is completed, the supporting and embracing seats will assume positions as shown in Fig. 5.

The upper supporting bracket is preferably produced from a single strip of material cut to the desired length and having its ends bent to leave a base plate 6^a, and provide thereon, embracing clips 6^b surrounding and embracing the vertical stiles, said clips being bent to extend across the side flanges 1^a and thence across the front flanges 1^b of the stiles, and terminated in return bends 6^c that embrace the free edges and underlie the inner faces of the front flanges so as to not only confine each stile in both lateral directions but space the stiles outwardly from the car, while permitting them to slide vertically in placing the ladder in position.

The clips 6^c are formed on the outer ends of the offsets 6^b by extending the ends, parallel to the attaching plate 6^a, first toward each other, and then away from each other, or in other words, these ends are doubled upon themselves in a direction parallel to the back plate to provide clips for the outer flanges of the vertical stiles, which open toward the ends of the bracket as distinguished from opening inwardly toward the back plate.

I claim:—

1. A ladder for railway cars comprising stiles with suitable rungs connected thereto, a supporting bracket having embracing seats adapted to receive and confine the lower ends of the ladder stiles on the inside of the bracket, said bracket comprising vertical and horizontal flanges, the horizontal flange being cut away to leave supporting ledges restricted to the vicinity of the stile ends and the ends of the vertical flange being bent across the ends of the supporting ledges and operating to confine the ends of the stiles to the seats provided by said ledges.

2. A car ladder comprising vertical stiles having side and front flanges and rungs, means affording vertical support for said stiles, and a bracket for the ladder comprising a base-plate having its ends bent to provide surrounding and embracing clips that extend outwardly across the side flanges of the stiles, and thence across the front flanges and terminate in return-bends that extend across the free edges of said front flanges and underlie their inner faces, said clips thereby confining said stiles in both lateral directions and spacing them from the wall upon which the bracket is mounted, while permitting vertical movement of the stiles in the bracket.

The foregoing specification signed at Cleveland, Ohio, this 17th day of June, 1915.

FREDERICK J. SCHROEDER.