

W. S. SCHROEDER.
CAR LADDER.
APPLICATION FILED OCT. 20, 1911.

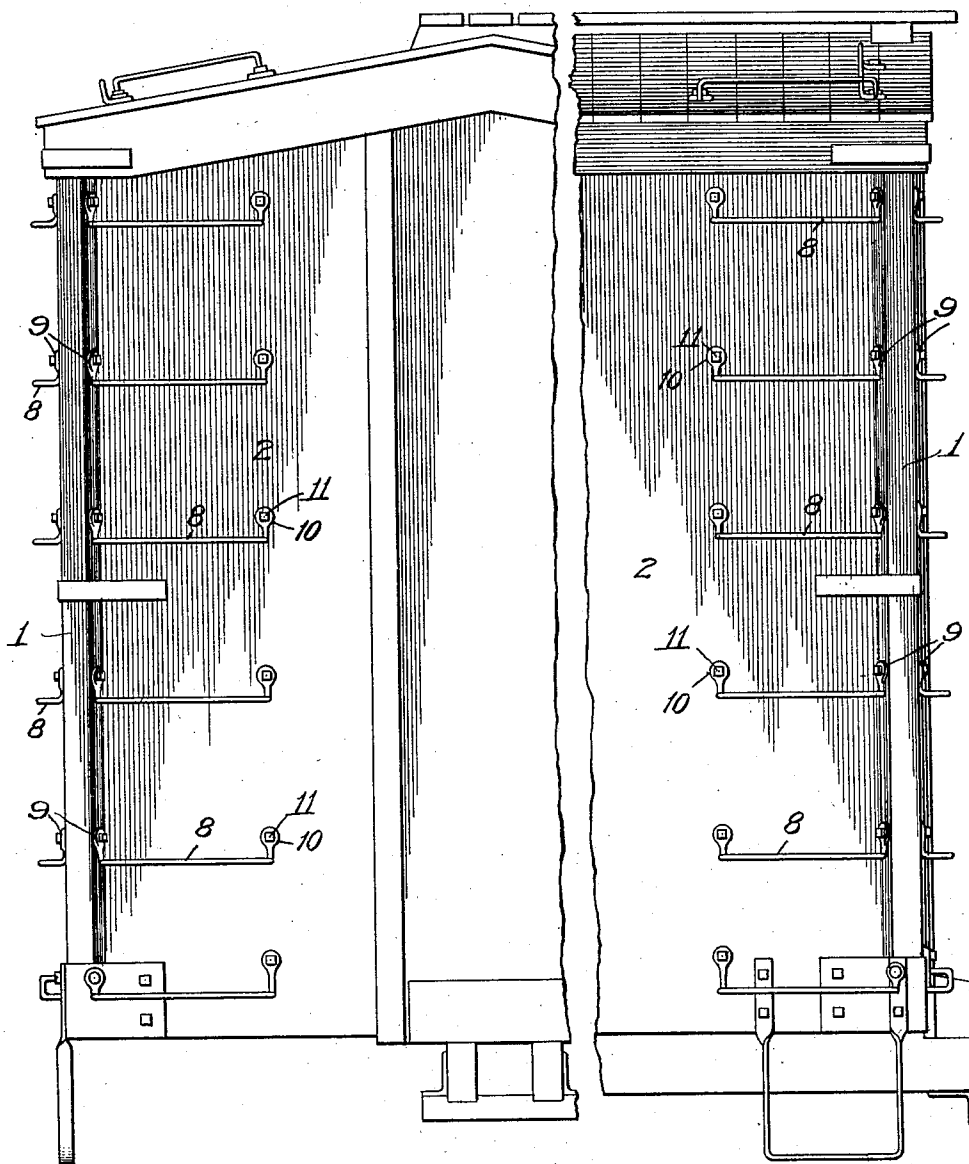
1,024,654.

Patented Apr. 30, 1912.

2 SHEETS-SHEET 1.

Fig. 1.

Fig. 2.



Witnesses:

John Enders

Henry A. Parks

Inventor:

William S. Schroeder,

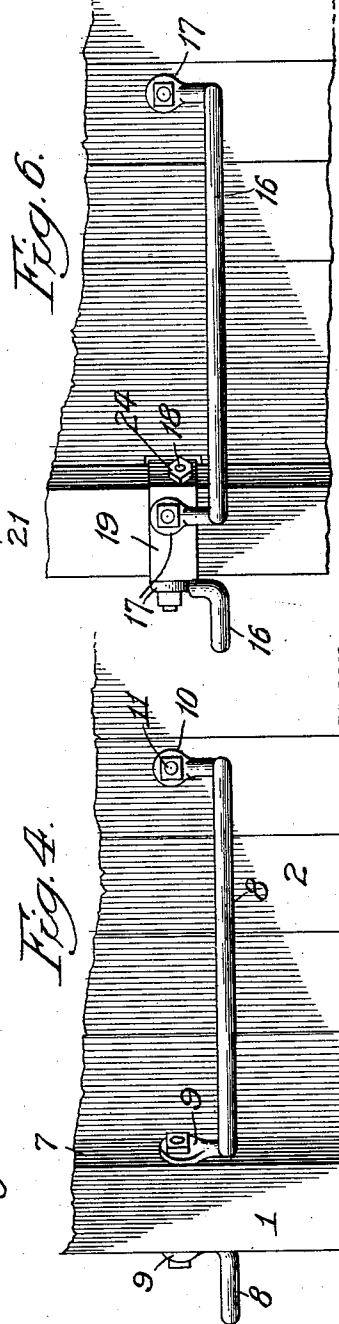
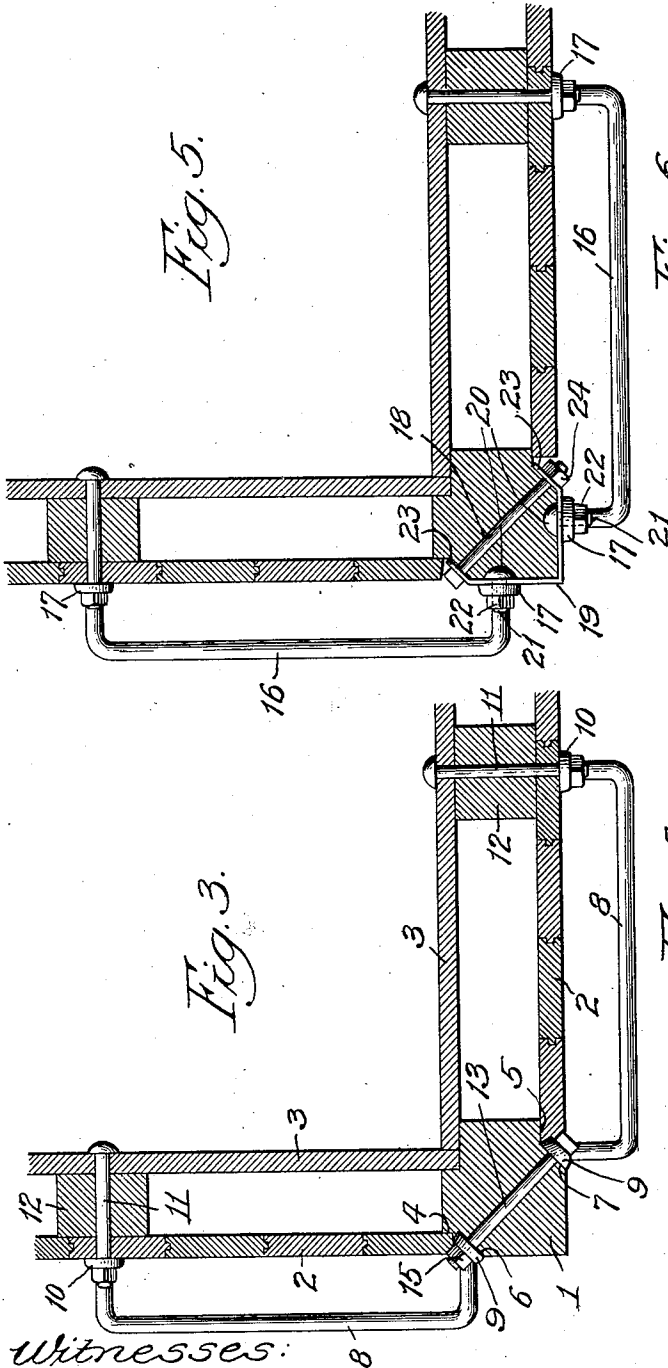
by Sheridan, Wilkinson, Scott & Richmond,
Attys.

W. S. SCHROEDER.
CAR LADDER.
APPLICATION FILED OCT. 20, 1911.

1,024,654.

Patented Apr. 30, 1912.

2 SHEETS-SHEET 2.



Witnesses:

John Enders
Henry A. Parks

Inventor:

William S. Schroeder,
by Sheridan, Wilkinson, Scott & Richmond,
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM S. SCHROEDER, OF AUSTIN, ILLINOIS.

CAR-LADDER.

1,024,654.

Specification of Letters Patent.

Patented Apr. 30, 1912.

Application filed October 20, 1911. Serial No. 655,758.

To all whom it may concern:

Be it known that I, WILLIAM S. SCHROEDER, a citizen of the United States, residing at Austin, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Ladders, of which the following is a specification.

The object of my invention is to provide an improved form of ladders and handholds such as are applied to the sides and ends of freight cars. These ladders are frequently injured in switching cars and through other causes, and as heretofore constructed it has been a task of some difficulty to make the necessary repairs.

The delay thus caused is a source of danger to the trainmen, and one of the objects of my invention is to so construct the ladder rounds or steps that an injured step can be readily repaired.

As ordinarily constructed freight cars are provided with corner posts, the outer surfaces of which form the outside of the car at each of the four corners. The side and end walls of the car consists of double walls separated by an air space, the edges of the boards or sheathing forming these walls abutting against the corner posts and generally being received in recesses or rabbets formed in the posts. It has been customary to secure the ends of the ladder rounds or steps adjacent the corners of the car by means of bolts passing through the corner posts, the inner ends of such bolts lying against the faces of the corner posts between the inner and outer sheathing which forms the car sides. Another method of fastening the ends of the steps adjacent the corner of the car is by means of a bolt passing through the post from its outer corner, which forms the corner of the car, to its inner corner at a point inside of the car. When the ladder steps are fastened according to the method first described, it is necessary, in order to make repairs, which require the use of a new bolt, to unload the car in order to get access to the inside thereof, and it is further necessary to tear off the inner sheathing in order to reach the bolts. When the steps are fastened according to the method last above described, if the car is loaded, it is likewise necessary to remove the contents in order to get access to the inner end of the bolt and to replace it, as in such case the bolt-hole extends from the outer corner of the posts to the inside of the car. According to my in-

vention repairs can be made without disturbing the contents of a loaded car and without removing the inner sheathing.

The particular object and nature of the invention will more clearly appear from the following description and claims, taken in connection with the accompanying drawings, in which—

Figure 1 is a partial end view of a car illustrating one form of my invention. Fig. 2 is a partial side view illustrating the same form of the invention. Fig. 3 is a horizontal section at the level of one of the fastening bolts, as illustrated in Figs. 1 and 2. Fig. 4 is an enlarged fragmentary end view of the structure illustrated in Fig. 1. Fig. 5 is a horizontal sectional view corresponding to Fig. 3, but showing a modified form of the invention. Fig. 6 is an elevation of the structure shown in Fig. 5.

Referring to the form of the invention illustrated in Figs. 1 to 4, inclusive, 1 designates one of the corner posts of a car, the walls of which consist of the outer sheathing 2 and the inner sheathing 3. As ordinarily and preferably constructed, the outer sheathing 2 forms a rabbeted joint with the end post, being received in recesses 4 and 5 formed in the outer faces of the end post at the corners thereof remote from the corner of the car. The recesses 4 and 5 are formed with beveled faces 6 and 7 preferably extending at right angles to the outer surfaces of the post 1, thus causing the inclined faces 6 and 7 to lie parallel and directly opposed to each other. The ladder steps or rounds 8 are similar to those now in use, except for the fact that the lugs 9 at the outer ends thereof, that is, the ends adjacent to the corner of the car are turned at an angle corresponding to the inclination of the faces 6 and 7, preferably an angle of 45 degrees, to the main body of the latter round. The lugs 10 at the inner ends of the ladder steps, that is, the ends remote from the corner of the car, are formed according to the usual practice, and are secured to the side and end of the car, respectively, by means of bolts 11 passing through said lugs 10 through the outer and inner sheathing and through a frame member 12 which lies between the outer and inner sheathing. The outer ends of the steps of the side and end ladders are held in place by means of bolts 13 which pass diagonally through the post 1 from the outer side of the car at the side thereof to

the outer side of the car at the end thereof. Each of the bolts 13 passes through the lug 9 of one of the end steps and through the lug 9 of one of the side steps, thereby serving to secure the outer ends of one of the side steps and the end step which is located at the same level.

It will be apparent that in case of injury to the corner of a car necessitating repairs to the outer ends of the ladder steps, that is, the ends adjacent the car corner, such repairs can be made without disturbing the contents of the car or tearing away the inner sheathing 3. In such case it is necessary only to remove the bolt 13, both the head of which and its nut 15 are accessible from the outside of the car.

Referring to Figs. 5 and 6, I have illustrated a form of my invention which dispenses with the necessity of turning the outer end lugs of the ladder steps, that is, the lugs adjacent the end of the car, at an angle. This structure has the advantage of dispensing with the necessity of providing two sets of steps, one with the inclined lug at the right-hand side thereof and the other with the inclined lug at the left-hand end thereof. In this form of my invention, the ladder rounds 16 may be of the ordinary form now in use, having lugs 17 of the same form at each end. In this construction the bolts 18 which occupy a position similar to that of the bolts 13 illustrated in Figs. 1 to 4 do not directly engage the steps of the ladders, but engage and hold in place a plate 19 which surrounds and conforms to the outer surface of the corner post, as illustrated. The plate 19 is provided with bolt-holes and the corner post is recessed opposite side bolt-holes to receive the heads of bolts which directly engage the outer end lugs 17 of the steps 16. In assembling this structure the bolts 21 are passed through the plate 19 from the inside thereof and through the lugs 17 upon the ladder steps. The nuts 22 are then placed in position, thus securing the ladder steps to the plate 19. The plate 19 with the ends of the ladder steps secured thereto, as described, is then placed in position over the corner post, as illustrated in Fig. 5, and the bolt 18 passed through bolt-holes in the intumed ends 23 of the plate 19 and through the corner post of the car, after which the

nuts 24 are placed in position, thus firmly securing the plate 19 and the attached ends of the ladder steps in place. As above stated, this form of my invention has the advantage of dispensing with the necessity of right and left steps.

While I have illustrated and described specific forms of my invention, the principle of the invention is not confined to the exact details illustrated, but is comprehended within the following claims.

I claim:

1. In a car, a corner post, a side ladder and an end ladder, bolts passing diagonally through said corner post from the side of the car to the end thereof, each of said bolts securing one end of one of the steps of the side ladder and one end of one of the steps of the end ladder.

2. In a car, a corner post having opposed inclined faces upon its end and side surfaces, side steps and end steps, each of said side and end steps having a lug at its outer end extending at an angle to the step and conforming to one of the inclined faces upon the corner post, bolts passing diagonally through said posts from the outside of the car at the end to the outside of said car at the side thereof, each of said bolts engaging the outer end lug of one of said side steps and the outer end of one of said end steps.

3. In a car, corner posts, outer and inner sheathing forming double walls at the sides and ends of the car, said posts being rabbeted to receive the abutting edges of said sheathing, the recesses formed by rabbeting the outer sides of said posts having opposed inclined surfaces, side steps and end steps, each of said side and end steps having a lug at its outer end extending at an angle to the step and conforming to one of the inclined faces upon the corner post, bolts passing diagonally through said posts from the outside of the car at the end to the outside of the car at the side thereof, each of said bolts engaging the outer end lug of one of said side steps and the outer end of one of said end steps.

In testimony whereof, I have subscribed my name.

WILLIAM S. SCHROEDER.

Witnesses:

HENRY A. PARKS,
EDYTHE M. ANDERSON.