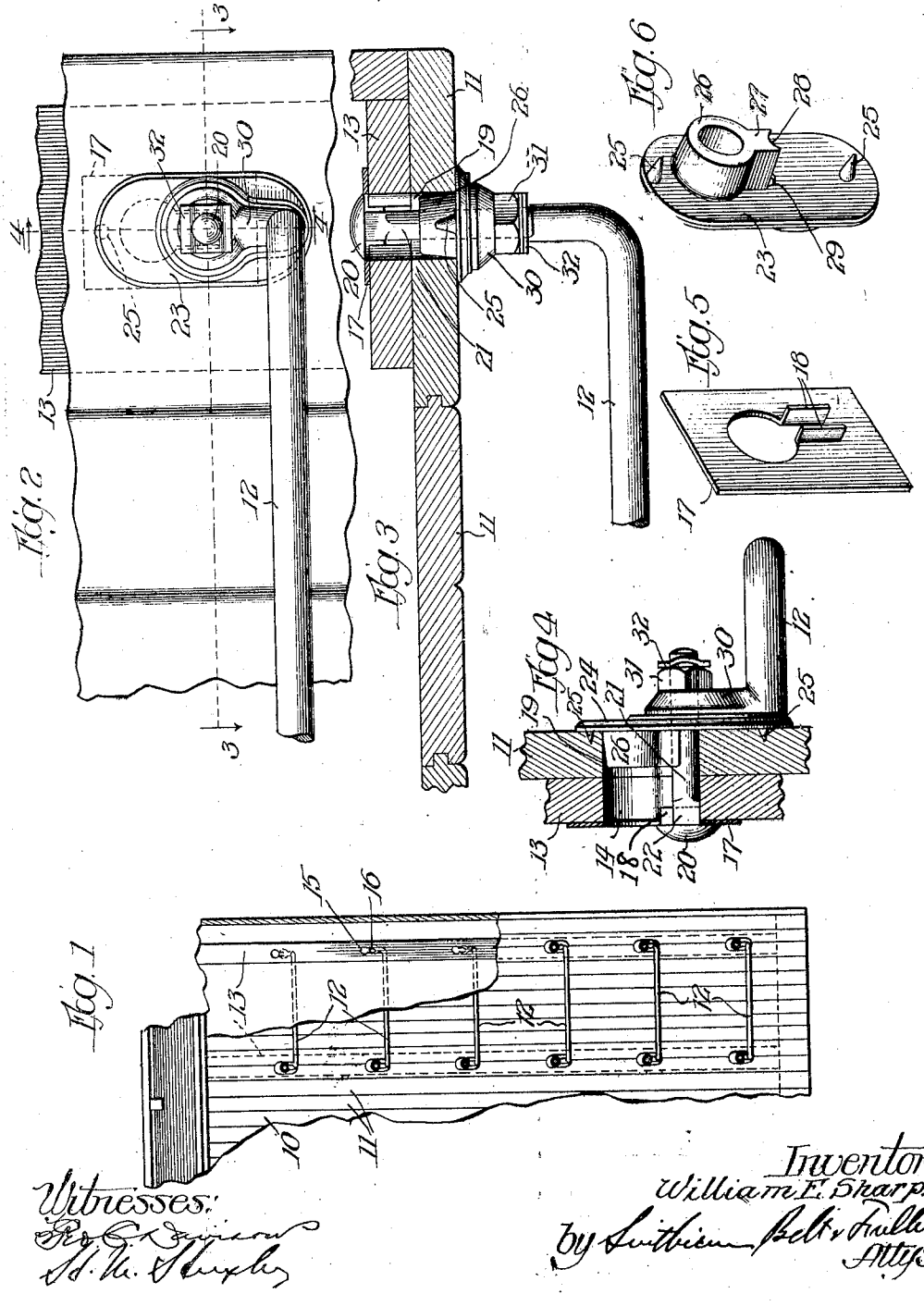
W. E. SHARP.

FASTENING DEVICE.

APPLICATION FILED APR. 17, 1911.

1,088,105.

Patented Feb. 24, 1914.



Witnesses:

Inventor
William E. Sharp.
by Smith, Bell & Fuller
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM E. SHARP, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO GEORGE B. ROBBINS, OF CHICAGO, ILLINOIS.

FASTENING DEVICE.

1,088,105. Specification of Letters Patent. Patented Feb. 24, 1914.

Application filed April 17, 1911. Serial No. 621,517.

To all whom it may concern:

Be it known that I, WILLIAM E. SHARP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, (whose post-office address is 5528 South Sangamon street, Chicago, Illinois,) have invented new and useful Improvements in Fastening Devices, of which the following is a specification.

My invention relates to fastening means, and is particularly, although not exclusively, adapted for use in connection with fastening grab irons and the like to railroad cars. In United States Patent No. 1,003,662, granted September 19, 1911, upon my copending application, Serial No. 608,765, filed February 15, 1911, is described a fastening device, by means of which the grab irons and ladders can be fastened to a car without inserting the bolts from the interior thereof. In the device just mentioned, however, it is necessary to remove the sheathing from a car in order to place the bolts in position.

It is the object of my present invention to provide means by which it is only necessary to form suitable holes through the sheathing and filler members of the car, the bolts then being held firmly in position by means of a retaining plate placed on the outside of the car. The filler members may be constructed either of wood or steel.

It will be apparent that this improvement constitutes an important advance in the art to which it relates.

The various advantages of my invention will be more readily understood by reference to the accompanying drawings, which show a preferred embodiment of my improvements, and in which—

Figure 1 is a side elevation of a portion of the end of a car showing the ladder irons in position, a part of the sheathing being removed to show the end of an underlying filler member; Fig. 2 is an enlarged side elevation of a portion of the car showing the means for fastening the end of a ladder iron in position; Fig. 3 is a horizontal section through the sheathing and filler member on the line 3—3 of Fig. 2, the end of the ladder iron and fastening device being shown in plan; Fig. 4 is a vertical section on the line 4—4 of Fig. 2 through the sheathing and filler member, the end of the latter iron and the fastening device being shown in end elevation; Fig. 5 is a perspective of the lock washer, preferably used on the inside of a wooden filler member, and Fig. 6 is a perspective of the retaining plate.

The car 10 is provided with the sheathing strips 11, outside of which are placed the ladder irons 12. Located just inside of the sheathing strips 11 are the filler members 13, shown in the drawings as of wood, but which may readily be constructed of iron or steel. In order to fasten the ladder irons 12 in position I provide apertures 14 in the filler members at suitable distances from each other, each of these apertures consisting of an enlarged portion 15 and a narrow, slotted portion 16, preferably located below the enlarged portion 15. On the inner face of each filler member are placed the lock washers 17, each of which has an aperture which registers with the aperture to which said lock washer is applied. Each lock washer is preferably provided with the lips 18, which extend into the portion 16 of the aperture to which the lock washer is applied. When the filler members are of steel, it is, of course, unnecessary to employ lock washers. If a car is not provided with filler members 13, they may readily be placed in position on removal of a few strips of the outer sheathing 11 and also on removal of a small portion of insulating material or the like from the space to be occupied by said filler members.

Certain of the sheathing strips 11 are provided with apertures 19, of the same shape as the apertures 14 in the filler members and registering with the latter. In order to fasten one of the ladder irons 12 in position it is first necessary to pass the head 20 of a bolt 21 through the enlarged portions of the apertures 19 and 14 in a sheathing strip 11 and filler member 13, respectively. The bolt 21 is then allowed to drop into position, so the square portion 22 of its shank lies in the slotted portion 16 of the aperture 14, the lips 18, 18 of the lock washer 17 serving to prevent the bolt from turning.

In order to hold the bolt 21 securely in position, the retaining plate 23 is now applied. This plate consists of a face 24, pointed lugs 25, which are forced into the sheathing strip 11, and an inwardly extending boss 26 which fits within the enlarged portion of the aperture 19 in the sheathing strip 11. The boss 26 has a downwardly

extending portion 27 with a concave surface 28, which is adapted to engage the upper surface of the bolt 21. The retaining plate 23 has an aperture 29, through which extends the bolt 21. After the retaining plate 23 has been placed in position the upturned end 30 of the ladder iron 12 is next applied, the bolt 21 passing through a suitable aperture in the end 30. The nut 31 and lock-nut 32 are next applied to the end of the bolt 21, and serve to securely hold the ladder iron 12. As it becomes necessary to replace a bolt 21, this may be effected by removing the lock-nut 32 and nut 31, then removing the end of ladder iron 12, and next removing the retaining plate 23, after which the bolt 21 may be moved upwardly and withdrawn through the enlarged portions of the openings 19 and 14. A new bolt is then substituted, as explained above.

It will be apparent to those skilled in the art that considerable change could be made in the fastening device which I have described without departing from the spirit or scope of my invention.

What I claim is:

1. The combination with a support having therethrough a hole with a marginal slot, of a fastening member having an enlargement adapted to pass through the hole in the support and to engage behind the same with its shank lying within the slot, a retaining member adapted to overlie the surface of the support and provided with a boss to seat within the hole of the support, said boss adapted to contact with and laterally restrain the fastening member, and a confining member secured to that end of the fastening member projecting beyond the retaining member, substantially as described.

2. The combination with a support having therethrough a hole with a marginal slot, of a fastening member having an enlargement adapted to pass through the hole in the support and to engage behind the same with its shank lying within the slot, a retaining member adapted to overlie the surface of the support and provided with a boss to seat within the hole of the support, said boss having a lateral extension adapted to contact with and laterally restrain the fastening member, and a confining member secured to that end of the fastening member projecting beyond the retaining member, substantially as described.

3. The combination with a support having therethrough a hole with a marginal slot, of a bolt having a head adapted to pass through the hole in the support and to engage behind the same with its shank lying within the slot, a retaining plate having an aperture for the bolt and adjacent thereto provided with a boss to seat within the hole of the support, said boss adapted to contact with and laterally restrain the bolt, and a member secured to the projecting bolt end, substantially as described.

4. The combination with a support having therethrough a hole with a marginal slot, of a square shanked bolt having a head adapted to pass through the hole in the support and to engage behind the same with its squared shank lying within the slot, a retaining plate having an aperture for the bolt and adjacent thereto provided with a boss to enter and fit within the hole of the support, said boss having a lateral extension adapted to contact with and laterally restrain the bolt, and a member taking over and secured to the projecting bolt end, substantially as described.

WILLIAM E. SHARP.

Witnesses:
HENRY M. HUXLEY,
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