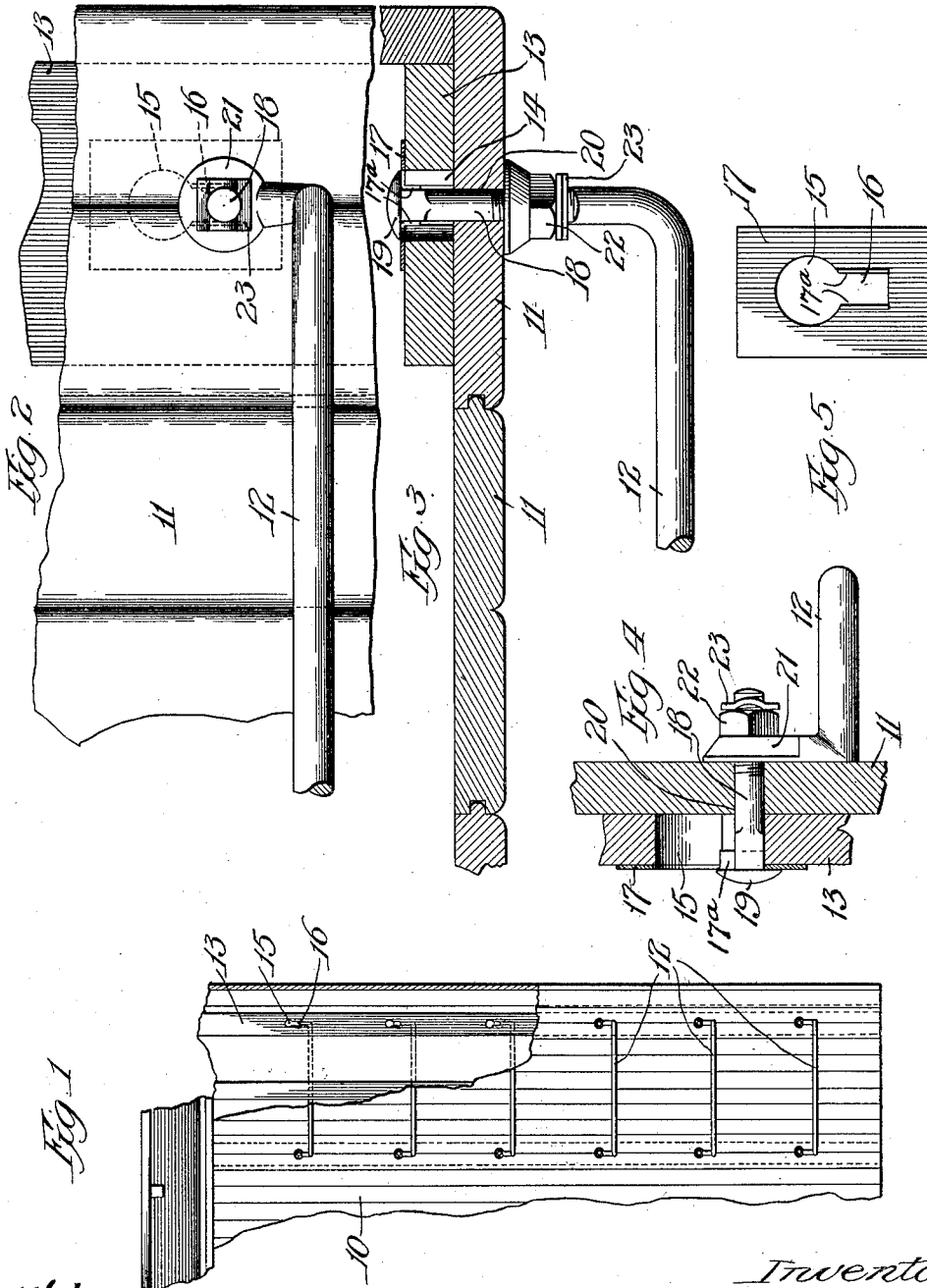


W. E. SHARP.
FASTENING DEVICE.
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1,003,662.

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UNITED STATES PATENT OFFICE.

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FASTENING DEVICE.

1,003,662.

Specification of Letters Patent.

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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, have invented certain new and useful Improvements in Fastening Devices, of which the following is a specification.

My invention relates to fastening devices and is particularly useful in connection with fastening grab-irons and the like to railroad cars.

It has heretofore been customary to fasten the grab-irons and ladder-irons to cars by means of lag screws. These screws are apt to become loose in the wood with the result that in some cases they pull out with consequent injury to a trainman who may be supported by such grab-iron or ladder-iron.

It is one of the objects of my invention to provide means by which the irons will be securely fastened to the car by a device in which there is no danger of such device pulling out of the wood, and this result I accomplish by using filler timbers placed immediately inside of the car sheathing. These timbers are provided with apertures of such nature that the head of a bolt may be inserted through the aperture from the outside and the bolt is then moved in the aperture in such manner that its head is securely locked in position. The outer sheathing is then placed on the car and the fastening bolt passes through an aperture in said sheathing which serves to retain the bolt securely locked in position. The grab-iron, having a suitable aperture therein, is then placed over the outer projecting end of the bolt and fastened in position by means of a suitable nut preferably provided with a lock-nut.

My invention is particularly useful in connection with changing the fastening means for the grab-irons on old cars. In many cases, as in refrigerator cars, a thick layer of insulating material is provided inside of the car, and if it were necessary to place the bolts in position by inserting them from the inside of the car it would be necessary to remove a large part of such insulating material. By my improvement, it is only necessary to remove a small portion of the outer sheathing, and make suitable apertures in the filler timbers, if there are such in the car, or, if not, introduce such timbers from the outside. The bolts may then be readily

placed in position, as described above. In order to add still further to the safety of the device, I preferably use a lock-washer located on the inside of the apertures on the filler timber, the head of the bolt abutting against this lock-washer and thereby preventing wear on the wood without a consequent loosening of the device.

These and other advantages of my invention will be more readily understood by reference to the accompanying drawings which represent a preferred embodiment of my improvement and in which:

Figure 1 is a side elevation of a portion of the end of the car showing the ladder-irons in position, a part of the sheathing being removed to show the underlying filler timbers. Fig. 2 is an enlarged side elevation showing the end of one of the ladder-irons and the fastening device therefor. Fig. 3 is a horizontal section through a portion of the outer sheathing and the filler timber showing the fastening device for the ladder-irons in position. Fig. 4 is a vertical transverse section through the outer sheathing and filler timber also showing the fastening device in position. Fig. 5 is an elevation of the lock-washer.

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 timbers 13. In order to fasten the ladder-irons 12 in position, I provide apertures 14 in these filler timbers at suitable distances from each other. Each of the apertures 14 consists of an enlarged portion 15 and a narrow slotted portion 16 preferably located below the enlarged portion 15. On the inner face of the filler timbers 13 are placed the lock-washers 17, each lock-washer having an aperture which registers with the corresponding aperture 14 in the filler timbers 13, and provided with the ears 17^a extending into the portion 16 of the aperture 14. If the car is not provided with filler timbers 13 they may be readily 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 positions to be occupied by said filler timbers.

In order to fasten one of the irons 12 in position, a bolt 18, having the head 19, is passed from the outside through the enlarged portion 15 of one of the apertures 14. This

bolt is then allowed to drop down so that it occupies a position in the slotted portion 16 of the aperture 14 and the head 19 is thus locked against the face of the lock-washer 17, while the shank engages the ears 17^a. The strip, or strips 11 which have been removed are then replaced, a suitable aperture 20 being provided through which the shank of the bolt 18 is allowed to pass, thus preventing the bolt from moving upwardly. The upward extension 21 of the iron 12 is then placed in position, the bolt 18 passing through a suitable aperture in the extension 21. The nut 22, having the lock-nut 23, is then screwed on to the threaded end of the bolt 18 and the iron 12 is thus firmly secured to the car.

It will be apparent to those skilled in the art that many changes could be made in the detailed construction of the fastening device which I have described without departing from the spirit and scope of my invention. For example, the shape of the apertures in the filler timbers could be varied within wide limits and still accomplish the same result. Similarly the head of the bolt might be made in a wide variety of shapes and still be adapted to have locking engagement with the lock-washer placed on the inner surface of the filler timbers.

I claim:

1. In a fastening device the combination of a retaining member having an aperture therethrough, a lock washer on said retaining member and having ears extending into said aperture, fastening means having an enlarged portion thereon, said enlarged por-

tion adapted for insertion through said aperture and to engage said lock washer on movement of said fastening means within said aperture, and means for securing said fastening means in position, substantially as described.

2. In a car construction, a fastening device for grab-irons and the like, comprising the combination of a filler-timber having an aperture therethrough, a lock washer on the inner end of said aperture and having ears extending therein, fastening means having an enlarged portion thereon, said enlarged portion adapted for insertion through said aperture and to engage the inner surface of said lock washer on movement of said fastening means in said aperture, and means for securing said fastening means in position, substantially as described.

3. In a car construction, a fastening device for grab-irons and the like, comprising the combination of a retaining member having an aperture therethrough, a lock washer on said retaining member and having ears extending into said aperture, a bolt having a head thereon, said head adapted for insertion through said aperture and to engage the inner surface of said lock washer on movement of said bolt in said aperture, the shank of said bolt engaging the ears of said lock washer, and means for securing said bolt in position, substantially as described.

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