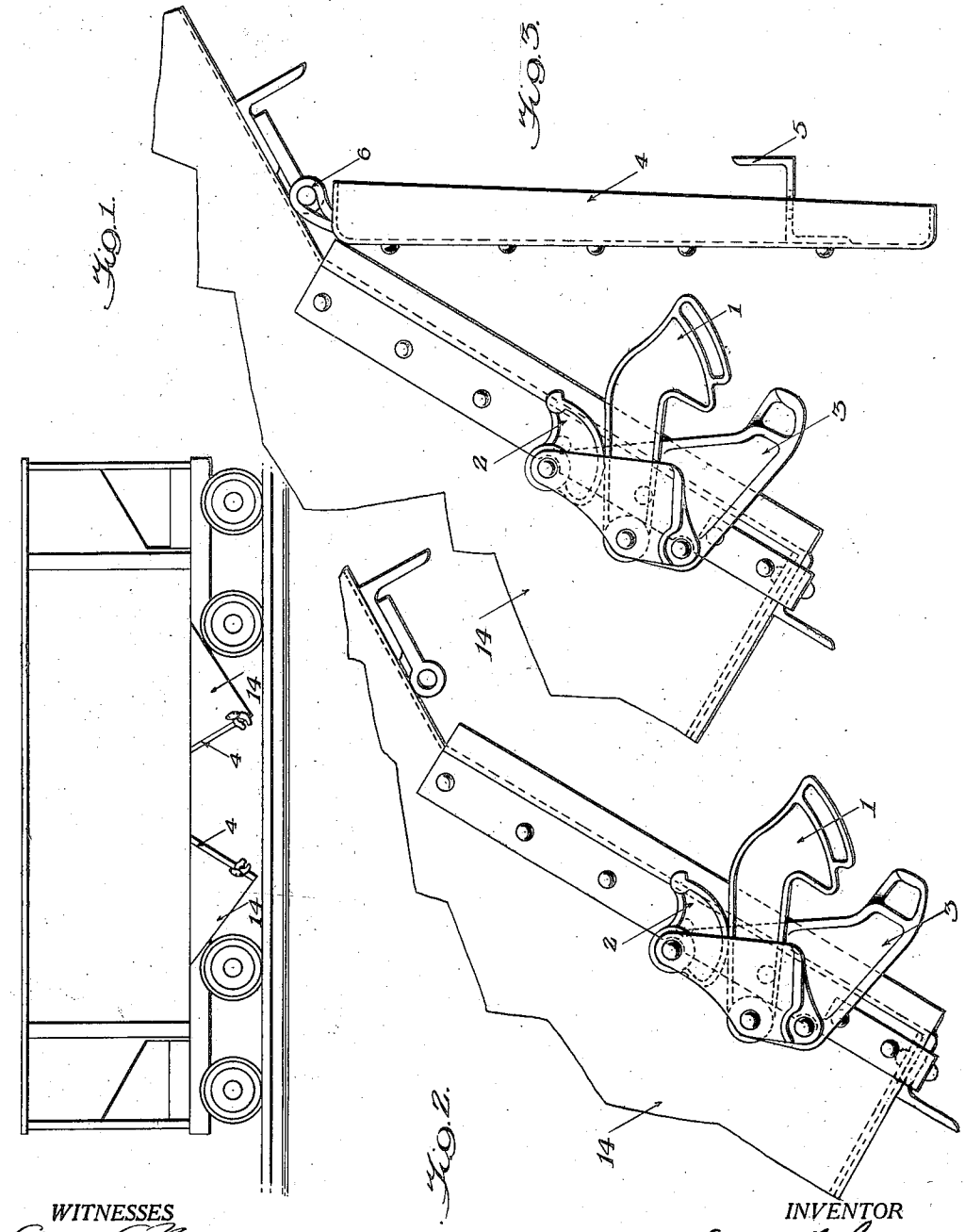
Aug. 26, 1924. 1,506,615

W. F. CREMEAN

METHOD OF CONSTRUCTING RAILWAY CARS

Filed Dec. 22, 1923 3 Sheets-Sheet 1



WITNESSES

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Fig. 5.

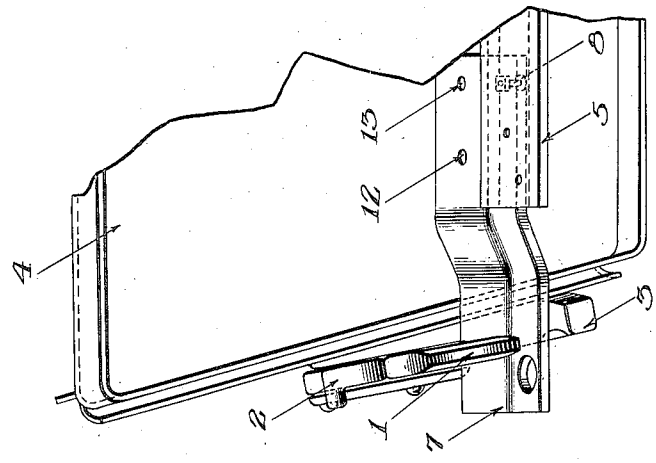
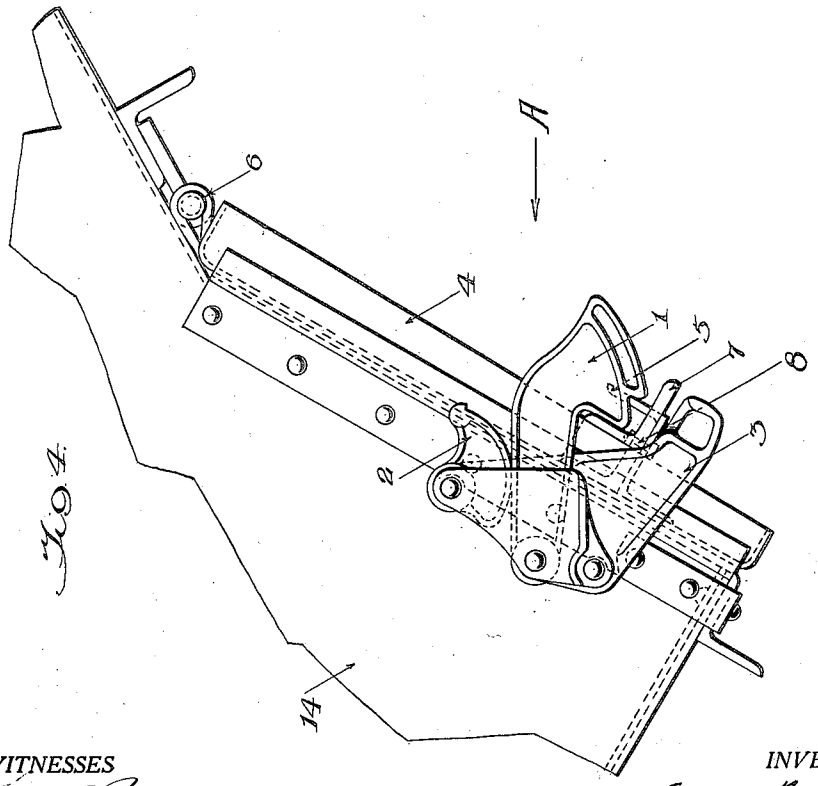


Fig. 4.



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Fig. 7.

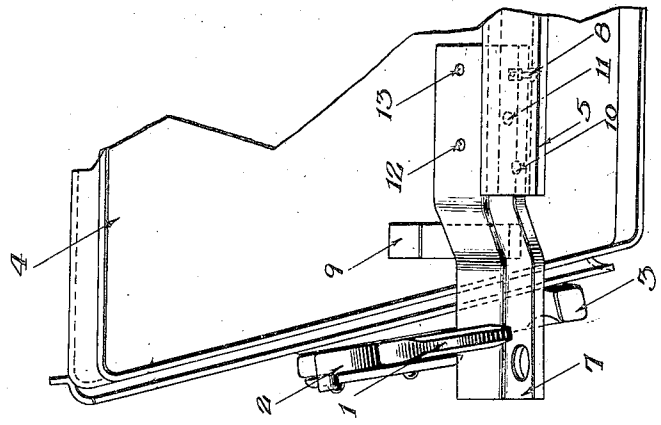
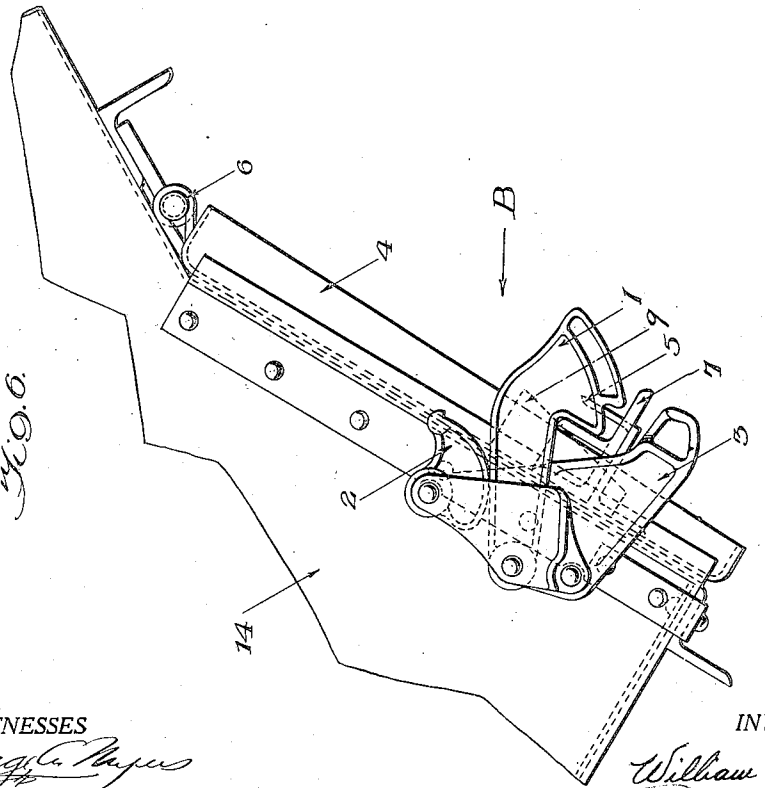


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM F. CREMEAN, OF TOLEDO, OHIO.

METHOD OF CONSTRUCTING RAILWAY CARS.

Application filed December 22, 1923. Serial No. 682,261.

To all whom it may concern:

Be it known that I, WILLIAM F. CREMEAN, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Methods of Constructing Railway Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the construction of railway cars of the type employing hinged doors, and is particularly directed to a method of equipping such cars with door locking mechanism involving relatively movable cooperating members, one of which is carried by the car body and the other by the door, for locking the door in closed position. The principal object of the invention is to afford a method of applying such door locking mechanism to cars which may be easily practiced by ordinary workmen, may be performed with a minimum expenditure of labor, does not necessitate the employment of templates or other measuring appliances for accurately adjusting the cooperating parts to the positions they occupy for most efficient operation, and which enables the position of the door locking mechanism to be adjusted to suit individual cars so as to compensate for normal variations in their dimensions, thus ensuring that the doors of each car shall occupy correct positions of closure when locked.

Generally stated, the method of applying the door locking mechanism to a car consists in mounting upon the car body in normal assembled relation thereto the door locking member or door locking unit which is carried by the body, and movably securing the cooperating locking member or locking unit in such a position on the door that, when the latter is swung to a position approaching final closure, the locking member carried thereby may be brought into door locking engagement with the said locking member or unit carried by the car body; moving the door to its normal position of final closure while the locking member carried by it is maintained in door locking relation to the locking member carried by the car body; and thereafter securing the locking member carried by the door in final assembled relation while it is in door locking engagement with the locking member carried by the car body and while said door remains in its said position of final closure.

The drawings chosen for the purpose of explaining the nature of the invention illustrate the application of a now familiar type of door locking mechanism to a twin hopper car, an example of this type of mechanism being disclosed in my reissued Patent No. 15,360 of May 23, 1922.

In the drawings, Figure 1 is a diagrammatic side elevation of a twin hopper car showing a common location of the door locking mechanisms.

Figure 2 is a detail side elevation of a portion of the car illustrating the step of my method which involves the mounting upon the car body in normal assembled relation thereto of the locking member or locking unit carried by said body.

Figure 3 is a view corresponding to Fig. 2 but illustrating the hinged door as having been associated with the hopper of the car.

Figure 4 is a detail side elevation of the hopper portion of the car showing the positions which cooperating locking members carried by the body and by the door are caused to assume after the door has been brought to a position approaching final closure.

Figure 5 is a detail elevational view, looking in the direction of the arrow A in Fig. 4, illustrating the relation of parts shown therein.

Figure 6 is a view corresponding to Fig. 4, but illustrating the employment of a wedge for forcing the door to assume its normal position of final closure while the locking members carried by the car body and by the door remain in locking relation.

Figure 7 is a detail view of the construction shown in Fig. 6, looking in the direction of the arrow B and illustrating the relation of parts as shown therein.

In the drawings, the element of the door locking mechanism which is mounted upon the car body is represented as a hook 1 forming part of a unit comprising also a locking cam 2 and a bracket member 3 upon which said hook and cam are pivotally mounted. In applying the locking mechanism to the car the hooked locking member 1, or the unit involving the parts 1, 2 and 3 if the member 1 forms a part of such unit, is riveted to the hopper side sheet 14 of the car so as to occupy its normal assembled position. The doors 4, which are customa-

rily arranged in pairs in a well known manner, are then rigidly connected by a suitable door spreader member 5 so that they are maintained in the proper spaced relation they occupy in service. After the doors have been thus connected they are hinged upon the car body, as illustrated at 6 in Fig. 3. When the doors have been put up on the car the locking members 7, carried by the door for respectively cooperating with the hooks 1 mounted upon opposite sides of the car body, are movably secured to the doors in a position enabling them to have locking engagement with the respective hooks 1 when the doors are caused to assume a position approaching final closure. In the illustrative structure disclosed in the drawings the locking members 7 are in the form of angle iron members offset from the plane of the door toward their outer ends, each being movably secured to the door with which it is associated by means of a bolt 8 extending through the door spreader 5. It is advantageous to apply the locking members 7 to the ends of the door spreader 5 after the doors have been mounted on the car rather than before they are placed in assembled position; and it is also most advantageous to connect the locking members 7 to the door spreader by inserting the bolt 8 through the innermost holes of said member 7, as illustrated in Fig. 5.

After the foregoing operations have been performed, preferably in the described order, the door is swung upon its hinges so as be brought to a position of approximate closure permitting the hook locking member 1 carried by the car body to be engaged in locking relation with the locking member 7 carried by the door. While locked against executing an opening movement the door is forced or moved to its proper fully closed relation with respect to the hopper portion of the car body. This positioning of the door is preferably effected by forcing a wedge 9 between the door and the locking member 7 carried thereby. While the cooperating locking members 1 and 7 are in locking engagement and the wedge holds the door 4 in final closed position, the locking member 7 is riveted to the door, the holes 10, 11, 12 and 13 being reamed if necessary. The rivets are preferably driven in the holes 10, 11, 12 and 13 in that order, so that the said locking member 7 is first indirectly secured to the door through the door spreader 5, and after these rivets have been driven the bolt 8 is replaced with a rivet. The wedge 9 may then be removed. It will be understood that a similar operation is performed in respect to the other door or doors.

Instead of employing the wedge 9 to cause the door to assume its proper position of final closure, this step may be otherwise performed as may be most convenient; for example, by wedging or prying the door to the desired position of closure through the use of a tapering tool or drift driven into the hole 10 sufficiently far to force the door to assume its proper closed relation to the car body. When this step of the method is thus performed the rivets for securing the locking member 7 to the door are driven in the order 11, 12 and 13, the drift is then removed and replaced with a rivet and the bolt 8 has a rivet substituted for it. The application of the door locking mechanism to the car is then complete.

It will be appreciated that my invention is not only advantageous in facilitating the construction of railway cars, but that its practice results in the production of cars equipped with properly fitting doors, which is a matter of much importance during the whole life of the car in service.

I claim:—

1. In constructing railway cars, the method of applying to a car, having hinged doors, a door locking mechanism involving engageable relatively movable cooperating members one of which is carried by the car body and the other by the door, which consists in mounting upon the car body in normal assembled relation thereto the said locking member which is carried by said body; movably securing the cooperating locking member to the door in a position enabling it to engage said locking member carried by the car body; causing said door to assume a position approaching final closure and effecting an engagement of the said locking members carried respectively by the car body and the door so as to prevent said door from executing an opening movement; causing said door to assume its normal position of final closure while the locking member carried by said door is maintained in door locking relation to the said locking member carried by the car body; and thereafter, while said door is in said normal closed position and said locking members are in said locking relation, securing to the door in final assembled relation thereto the locking member carried thereby.

2. In constructing railway cars, the method of applying to a car, having a pair of hinged doors rigidly connected by a door spreader, door locking mechanisms involving relatively movable cooperating members one of which is carried by the car body and the other by the door, which consists in mounting upon the car body in normal assembled relation thereto the said door locking members carried by the said body; rigidly connecting said pair of doors in normal relation through the intermediacy of the door-spreader; hinging the doors thus connected in normal assembled relation upon the car body; movably securing to the opposite ends of said door-spreader the said lock-

ing members carried by the door for cooperating with the respective locking members carried by the car body; causing said doors to assume a position approaching final closure and effecting the engagement of the locking members carried by the car body with the cooperating locking members carried by the door so as to prevent said connected doors from executing an opening movement; causing each of said doors to assume its normal position of final closure while the locking member carried thereby is maintained in door locking relation to the cooperating locking member carried by the car body; and thereafter, while each of said doors is in its said normal closed position and the said locking members associated therewith are in said engaged relation, securing to said door-spreader in final assembled relation thereto the locking members carried by said doors.

3. In constructing railway cars, the method of applying to a car, having hinged doors, a door locking mechanism involving engageable relatively movable cooperating members one of which is carried by the car body and the other by the door, which consists in mounting upon the car body in normal assembled relation thereto the said locking member which is carried by said body; movably securing the cooperating locking member to the door in a position enabling it to engage said member carried by the car body; causing said door to assume a position approaching final closure and effecting an engagement of the said locking members carried respectively by the car body and the door so as to prevent said door from executing an opening movement; forcing a wedge element between said door and the locking member carried thereby until said door assumes its normal position of final closure while the locking member carried by the car body is maintained in door locking relation to the locking member carried by the door; and securing the locking member carried by the door in the assembled relation it occupies to said door after the latter has been acted on by the wedge element as aforesaid.

4. In constructing railway cars, the method of applying to a car, having a hinged door, a door locking mechanism involving engageable relatively movable cooperating devices one of which is carried by the car body and the other by the door, which consists in mounting one of said locking devices in normal assembled relation to the part of the car by which it is carried, movably securing the cooperating locking device to the part of the car by which it is carried in a position enabling it to engage the other locking device; causing said door to assume a position approaching final closure and effecting an engagement of the said locking devices so as to prevent said door from executing an opening movement; causing said door to assume its normal position of final closure while said locking devices are maintained in door locking relation; and thereafter, while said door is in said normal closed position and said locking devices are in said locking relation, securing in final assembled relation to the part of the car by which it is carried the said locking device which was movably secured thereto.

In testimony whereof I affix my signature.

WILLIAM F. CREMEAN.