

July 18, 1933.

C. W. GRIMM

1,918,905

RAIL CLAMP

Filed April 10, 1931

2 Sheets-Sheet 1

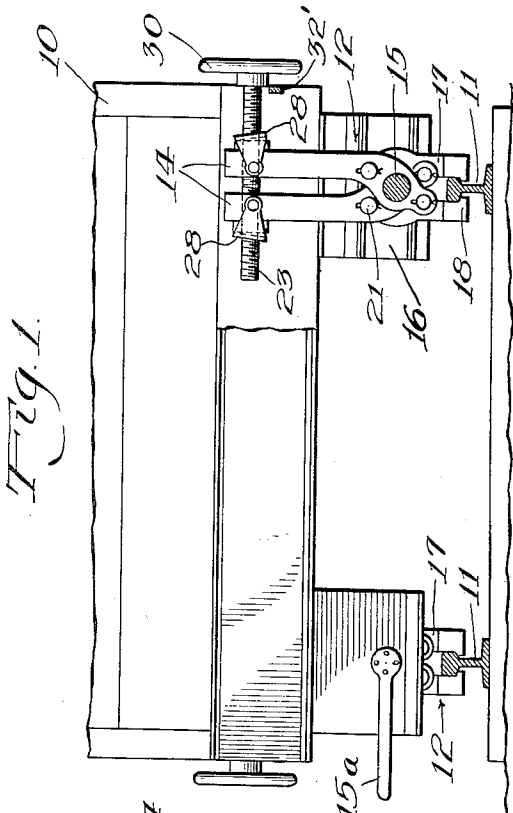


Fig. 5.

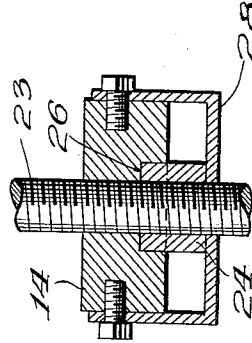


Fig. 6.

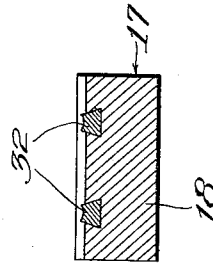
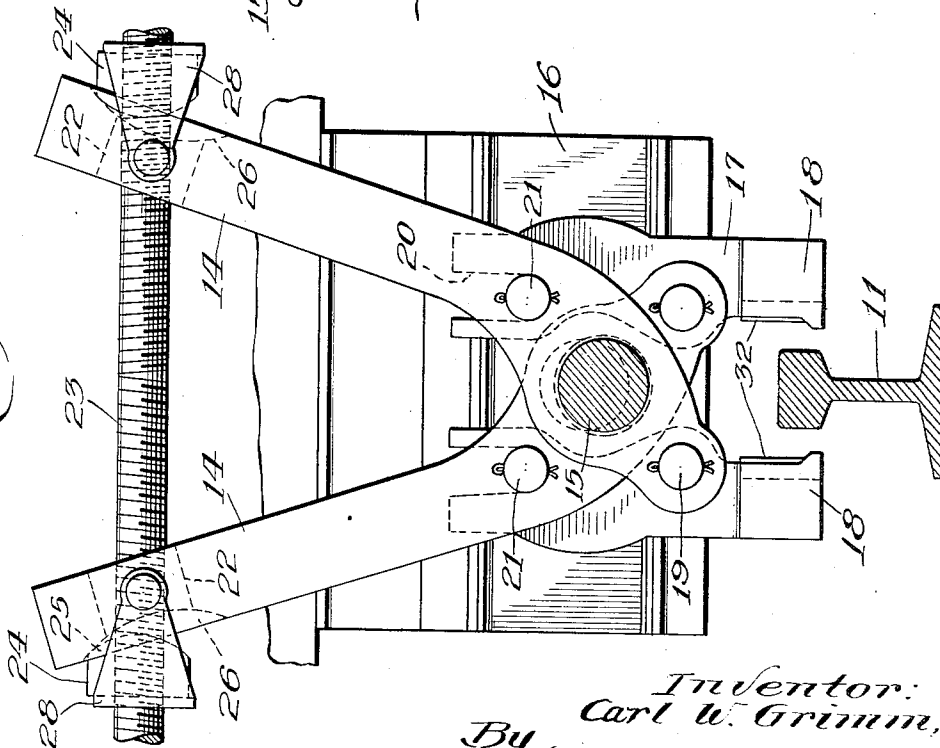


Fig. 2.



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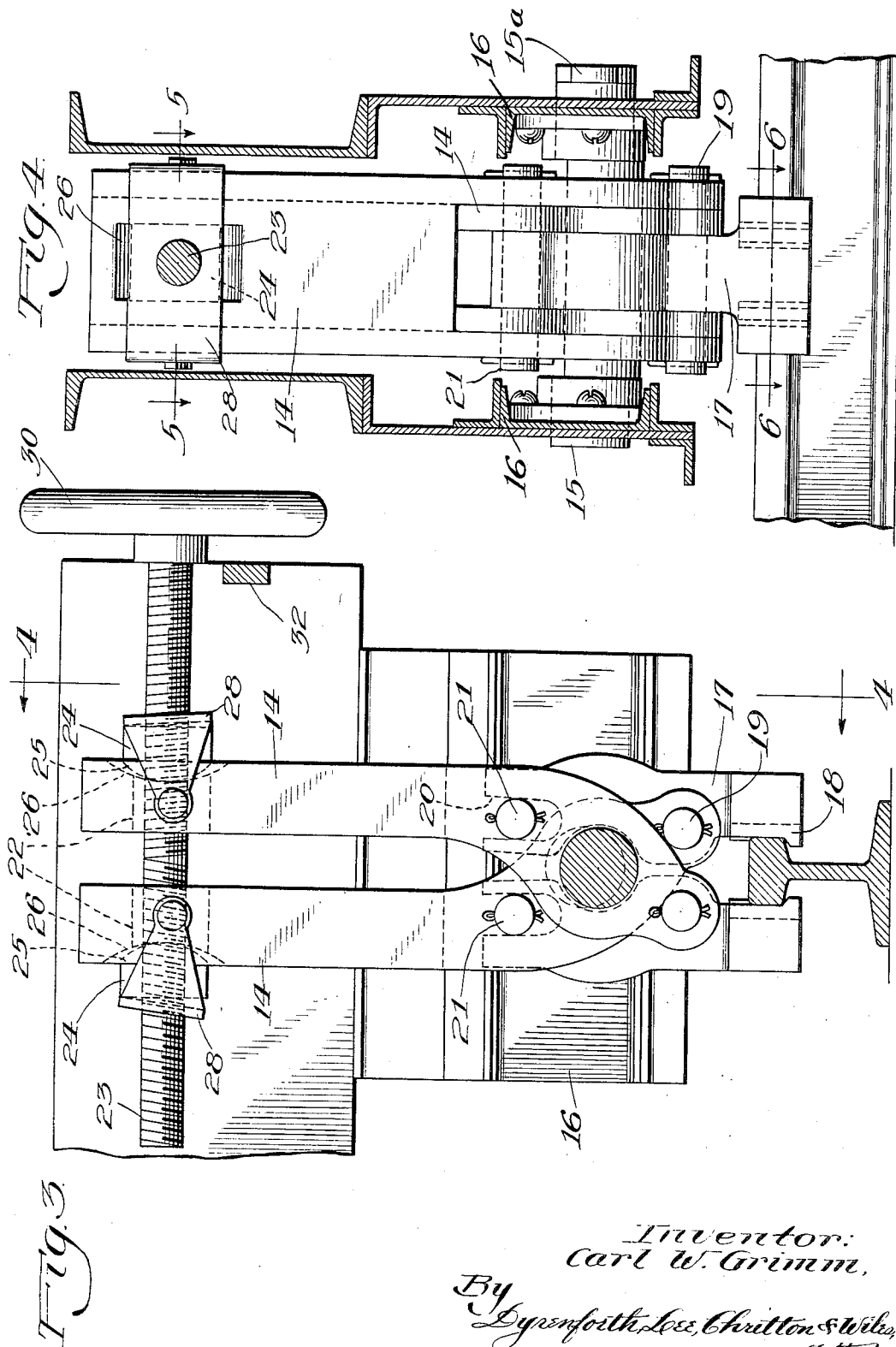
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RAIL CLAMP

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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RAIL CLAMP

Application filed April 10, 1931. Serial No. 529,222.

The invention relates to rail clamps of the type which are adapted to lock a freight car, or the equivalent, to the rails upon which it stands.

One form of the invention is embodied in a rail clamp which comprises a pair of levers pivoted on a crank shaft, the crank shaft being journaled in the framework of a freight car. Pivoted to the levers are clamping members provided with jaws which may be brought into clamping relation with one of the rails upon which the freight car is standing so that the freight car will be locked against movement along the rail. The crank shaft may be rotated to raise and lower the jaws with respect to the rail so that when the clamping device is functionally inoperative it may be brought into a position wherein it is clear of the tracks.

Devices embodying the invention may be manipulated with little effort to firmly lock the car against movement on the rails.

Other objects and advantages of the invention will become apparent as the following detailed description progresses, reference being had to the accompanying drawings, wherein:

Figure 1 is an end elevation of a freight car with rail clamps which embody the invention;

Fig. 2 is an enlarged elevation of one of the rail clamps;

Fig. 3 is an enlarged elevation of the same rail clamp shown in a changed position;

Fig. 4 is a section taken on line 4—4 of Fig. 3;

Fig. 5 is a section taken on line 5—5 of Fig. 4, and

Fig. 6 is a section taken on line 6—6 of Fig. 4.

Referring to the drawings wherein a preferred embodiment of the invention is illustrated, the reference character 10 designates generally a freight car standing upon rails 11 of ordinary construction. Secured to the freight car 10 are rail clamps 12 which may be adjusted to lock the freight car to the rails 11 so that the freight car will be held against movement relative to the rails.

Each of the rail clamps 12 comprises a pair

of levers 14 pivoted upon a crank-shaft 15 which is journaled in channel members 16 forming part of, or secured to, the framework of the car 10. The crank-shaft has a lever 15a secured to it, which lever may be utilized to oscillate the crank-shaft for a purpose hereinafter set forth. Pivoted to the lower end of each of the levers 14 is a clamping member 17 provided with a jaw 18 which is engageable with one of the rails 11. A pin 19 is provided for pivoting each clamping member 17 to its associated lever 14. The upper end of each clamping member 17 is slotted, as at 20, to receive a pin 21 which is carried by the associated lever 14.

As shown in Fig. 4, the crank of the crank-shaft 15 is formed intermediate the ends thereof, the ends being journaled in the channel members 16. The levers 14 are pivoted on the crank of the crank-shaft 15 and the construction is such that when the longitudinal axis of the crank is disposed directly beneath the axis of rotation on the crank-shaft, the jaws 18 may be brought into engagement with the associated rail 11. When the car is to be moved, the crank-shaft may be rotated 180 degrees around its axis of rotation so that the axis of the crank will be disposed immediately above the axis of rotation of the crank-shaft. When the crank is in the latter position, the levers 14 and the jaws 18 are elevated so that the jaws 18 are disposed above the associated rail 11 and will not engage the rail while the car travels along the tracks.

The upper ends of the levers 14 are slotted, as at 22 to accommodate a rod 23 which is provided with right and left hand screw-threads. Nuts 24 screw-threaded upon the rod 23 abut against the outer surfaces of the levers 14 and are preferably provided with rounded surfaces 25 which engage arcuate surfaces 26 formed in the levers 14. Pivoted to the upper end of each of the levers 14 is a bracket member 28 which engages the associated nut 24 and causes the associated lever 14 to follow the nut when the rod 23 is rotated to bring the levers from the position wherein they are shown in Fig. 3 to the position wherein they are shown in Fig. 2. It

will be noted that the rod 23 and the parts carried thereby are carried by the levers 14 and that all of these parts will be displaced upwardly if the crank-shaft 15 is rotated through an angle of 180 degrees from the position wherein it is shown in Fig. 3.

A hand-wheel 30 is preferably provided on the outer end of the rod 23 and may be rotated in either direction to displace the nuts 24 toward or away from each other along the rod 23.

As best shown in Figs. 2 and 6, the jaws 18 are preferably provided with hardened inserts 32 which are engageable with the rails.

It will be readily understood that the crank-shaft 15 may be oscillated through an angle of 180° to raise and lower the improved clamping device. Thus, when the clamping device is not in use the crank-shaft may be rotated through an angle of 180° from the position wherein it is shown in the drawings so that the jaws 18 are raised above the level of the rail and will not tend to engage rail joints, fish-plates, etc.

The improved clamping device tends to maintain its upright position upon the crank-shaft 15 but in the event it tends to turn as a unit upon the crank-shaft, this movement is limited by the hand-wheel 30 which engages the frame with the car. I also preferably provide a shelf or bar 32' underneath the outer end of the rod 23 which serves as a stop in the event the clamping device tends to rotate in a clock-wise direction (Fig. 3) around the crank-shaft 15.

The operation of the above described apparatus is substantially as follows: Assuming that the freight car 10 is to be locked to the rails 11 and that the rail clamps 12 are in their functionally inoperative positions, as illustrated in Fig. 2, it is readily understood that the hand-wheel 30 may be rotated to cause the nuts 24 to approach each other whereupon the jaws 18 will engage the rails 11 and rigidly secure the car to the rails. To release the car, it is only necessary to rotate the hand wheel 30 in the opposite direction. After the jaws have been disengaged from the rail the crank-shaft 15 may be ro-

tated through 180° to raise them above the rail.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible, in view of the prior art.

What I claim as new, and desire to secure by Letters Patent, is:

1. A device of the kind described for locking a vehicle to one of a pair of rails upon which it travels, said device comprising a crank shaft journaled in the vehicle, a pair of levers pivoted on a crank of said crank-shaft and provided with jaws, means for oscillating said crank-shaft, and means for bringing said jaws into clamping engagement with one of said rails.

2. A rail clamp comprising a crank-shaft adapted to be journaled in a vehicle, a pair of levers pivoted on a crank of said crank-shaft, a pair of clamping members carried by said levers and provided with jaws, a rod having right and left hand screw-threads, nuts screw-threaded on said rod and engaging said levers, and means for rotating said rod.

3. Apparatus for clamping a vehicle to a rail on which it is adapted to travel, said apparatus comprising a crank shaft, means for rotatably journaling said crank-shaft on said vehicle, clamping means carried by a crank on said crank-shaft, and means for bringing said clamping means into and out of clamping engagement with said rail.

4. Apparatus for locking a vehicle to a rail upon which it is adapted to travel, said apparatus comprising a frame secured to said vehicle, a pivot movably mounted in said frame, clamping means carried by said pivot adapted to grip said rail, and a lever arm adapted to lower and raise said pivot so as to bring said clamping means into and out of clamping position with said rail.

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