

J. F. O'CONNOR.
BOLSTER LOCKING CENTER PIN.
APPLICATION FILED JAN. 30, 1922.

1,434,499.

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Fig. 1

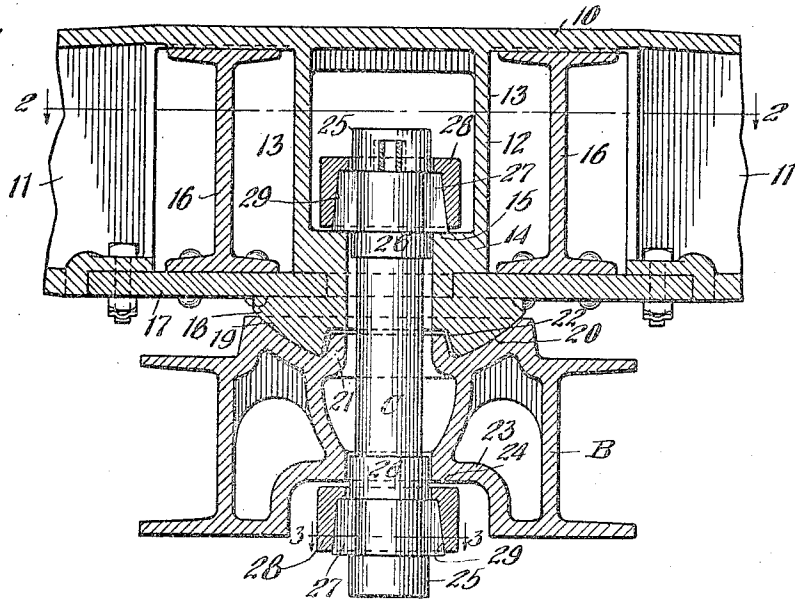


Fig. 2

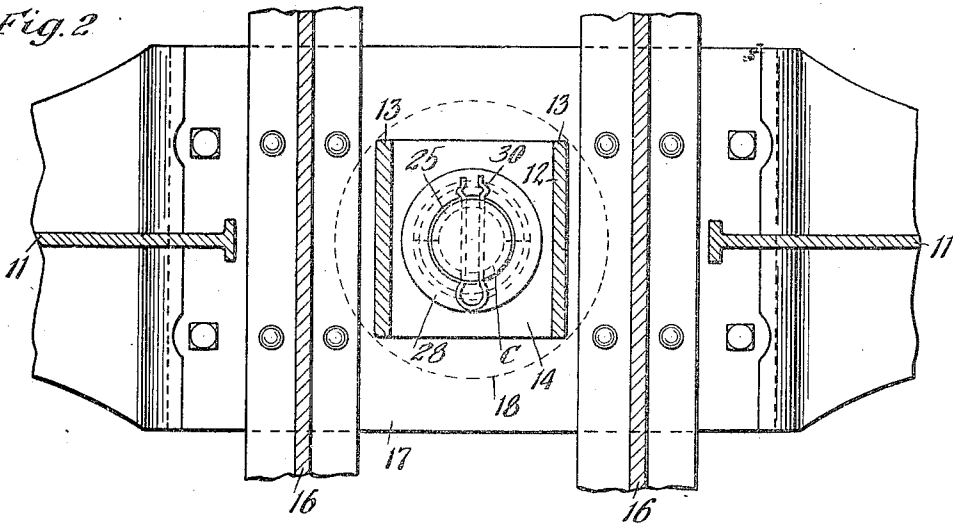
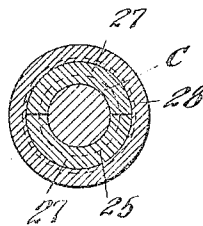


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN F. O'CONNOR, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM H. MINER, OF CHAZY, NEW YORK.

BOLSTER-LOCKING CENTER PIN.

Application filed January 30, 1922. Serial No. 532,616.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Bolster-Locking Center Pins, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in bolster locking center pin.

In the operation of railroad cars, experience has shown the advisability of connecting the body and truck bolsters in such manner as to prevent their vertical separation in the event of collision or derailment and thereby prevent or minimize turning over or telescoping of the cars. In the case of six-wheel trucks, and particularly in connection with dining, buffet and baggage cars, much difficulty has been experienced in applying a suitable type of bolster locking device because of the location of the central axle of the truck immediately below the pivotal center of the bolsters and the practical impossibility of obtaining access from above the bolsters through the car floor.

One object of my invention is to provide a highly efficient locking center pin connection between body and truck bolsters of a car which may be employed with six-wheel trucks and car constructions rendering it difficult to obtain access from either above or below the king pin openings to insert or remove the king pin.

Another object of my invention is to provide a safety locking king pin of solid construction having maximum strength to resist both shear and tension and which is applicable to various types of car construction.

In the drawing forming a part of this specification, Figure 1 is a sectional view taken transversely of a car at the king pin connection, showing my improvements in connection therewith. Figure 2 is a horizontal, sectional view corresponding to the section line 2—2 of Figure 1. And Figure 3 is a detail sectional view corresponding to the section line 3—3 of Figure 1.

In said drawing, I have shown a cast body bolster of the type commonly employed on passenger cars, the same having a top web 10, diaphragms 11—11, and central king pin section 12. The latter is closed at the top

on account of the web 10 and has depending vertical side walls 13—13 and bottom wall 14, the latter being centrally apertured to accommodate the king pin, and providing an upwardly facing annular shoulder 15 to accommodate the locking pin, as hereinafter described. Recesses are formed in the bolster casting on opposite sides of the center to accommodate I-beam center sills 16—16. The bottom side of the body bolster is completed by means of a plate 17 securely riveted or otherwise rigidly secured to the casting, said plate 17 having a depending enlargement 18 formed with a spherical surface 19 on the bottom thereof which acts as the body bolster center bearing plate.

Cooperable with the body bolster is a casting designated generally by the reference B, which may be either a true truck bolster proper as in the case of four-wheel trucks or, in the case of six-wheel trucks, will generally be in the form of an arch of spider-like design with laterally directed arms connected to the usual two truck bolsters proper of a six-wheel truck, as more clearly described in my co-pending application, Serial No. 532,617. For convenience in description and in the claims, the member B will be referred to as a truck bolster, it being the intention to include thereby a truck bolster proper or arch or equivalent such as commonly used in six-wheel trucks. Said truck bolster B is formed on the top thereof at its center with a top face 20 co-operable with the top bolster center bearing. Preferably the bolster B is formed with an upstanding annular flange 21 surrounding the king pin opening, said flange extending within a corresponding recess 22 provided on the under side of the center bearing section of the body bolster. The bottom web 23 of the truck bolster B is centrally apertured to accommodate the king pin and an annular downwardly facing shoulder 24 is defined surrounding said king pin opening to cooperate with the king pin, as hereinafter described.

To interlock the body and truck bolsters against vertical separation but at the same time allow them to turn relatively, I preferably employ the following arrangement. A heavy solid pin C is used, the same having annular enlargements 25—25 at each end thereof and also annular flanges 26—26 spaced inwardly from the enlarged or head-

ed ends 25 so as to thereby define annular channels or grooves at each end of the locking pin. Applied to each end of the pin C is what may be termed a detachable collar.

5 Each of said collars, as shown, comprises two semi-cylindrical elements 27—27 constituting a split ring, as shown best in Figure 3, and an annular sleeve 28 fitting over the elements 27. The inner surfaces of the elements 27 fit snugly against the pin and are of a height corresponding to the width of the annular channel on the pin heretofore described. On their outer sides, the elements 27 are beveled as indicated at 29 and the interior of the annular ring 28 is correspondingly cone-shaped so as to fit snugly over and with a wedging fit against the elements 27—27. The top wall of each sleeve or bushing 28 is apertured to accommodate the maximum diameter sections of the pin C.

With the detachable sectional collars applied to the pin C, as shown in Figure 1, it is evident that the collars overlie the respective shoulders 15 and 24 on the body and truck bolsters, and hence prevent vertical separation of the body and truck bolsters although allowing them to turn relatively. To prevent the top sleeve or bushing 28 from jarring loose, a cotter 30 is passed through a suitable opening in the upper end of the pin C so as to overlie the said sleeve.

In assembling the parts, the following procedure is employed. The lower collar is first applied to the pin C and the pin then inserted vertically from the under side of the truck bolster. In the case of four-wheel trucks, this may be done while the truck bolster is assembled with the other parts of the truck and in the case of six-wheel trucks, the pin will be inserted while the arch is detached from the two truck bolsters proper of the six-wheel truck. With the pin and lower collar thereon in position as above described, the car body can be dropped down on to the truck, thereby allowing the upper end of the locking pin to enter the opening of the truck bolster. The two elements 27 of the upper collar are then applied to the pin, access being obtained between the center sills. The upper sleeve or bushing 28 is then dropped down over the elements 27 and the cotter applied, thus retaining all of the parts in their operative position.

From the preceding description, it will be seen that I have provided an effective safety locking device for body and truck bolsters applicable to different types of car construction. It will also be observed that I obtain a very strong and rugged locking pin since I am enabled to use a solid pin proper, thus affording great strength under tension, and am also enabled to obtain a complete annular shoulder engagement between the collars on the pins and the co-

operating shoulders of the bolsters, thus obtaining maximum strength to resist shear and bending in the event of shock.

I have herein shown and described what I now consider the preferred manner of carrying out the invention, but the same is merely illustrative, and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a device of the character described, the combination with a body bolster and a truck bolster having alined openings at their centers and provided with upwardly facing and downwardly facing shoulders respectively at the top and bottom of said openings; of a pin extending through said openings and provided with top and bottom shoulders; and detachable collars applied to said shoulders at the top and bottom thereof, each of said collars engaging between the pin shoulder and the corresponding adjacent bolster shoulder.

2. In a device of the character described, the combination with a body bolster and a truck bolster having alined openings at their centers and provided with upwardly facing and downwardly facing shoulders respectively at the top and bottom of said openings; of a pin extending through said openings, said pin at the top having means to engage the corresponding adjacent shoulder of the body bolster; and a detachable collar applied to the lower end of said pin engageable with the corresponding adjacent shoulder of the truck bolster.

3. In a device of the character described, the combination with a body bolster and a truck bolster having alined openings at their centers and provided with upwardly facing and downwardly facing shoulders respectively at the top and bottom of said openings; of a pin extending through said openings, said pin at the bottom thereof having means to engage the corresponding adjacent shoulder of the truck bolster; and a detachable collar applied to the upper end of said pin engageable with the corresponding adjacent shoulder of the body bolster.

4. In car construction, the combination with a body bolster having a king pin opening and provided with an upwardly facing annular shoulder surrounding said opening; of a truck bolster having a king pin opening and provided with a downwardly facing annular shoulder surrounding said opening; a pin extending through said openings and having means on one end thereof engageable with the corresponding adjacent bolster shoulder; and a detachable collar applied to the opposite end of said pin engageable with the other of said bolster shoulders.

5. In car construction, the combination with a body bolster having a king pin open-

ing and provided with an upwardly facing annular shoulder surrounding said opening; of a truck bolster having a king pin opening and provided with a downwardly facing annular shoulder surrounding said opening; a pin extending through said openings and having means on one end thereof engageable with the corresponding adjacent bolster shoulder; and a detachable collar applied to the opposite end of said pin engageable with the other of said bolster shoulders, said detachable collar comprising two substantially semi-annular elements fitting against the pin and an outer sleeve telescoping over said elements.

6. In car construction, the combination with a body bolster having a king pin opening therein and provided with an upwardly facing annular shoulder surrounding said opening; of a truck bolster having a king

pin opening and provided with a downwardly facing annular shoulder surrounding said opening; of a solid pin extending through said openings and provided with spaced annular pairs of shoulders at each end thereof; and a detachable collar applied on each end of said pin, each of said collars comprising semi-annular elements fitting between the respective pair of shoulders and a sleeve telescoped over said elements, said sleeve and elements having wedge engagement.

In witness that I claim the foregoing I have hereunto subscribed my name this 10th day of January 1922.

JOHN F. O'CONNOR.

Witnesses:

UNA C. GRIGSBY,
ANN BAKER.