Feb. 18, 1930. W. A. GEIGER 1,747,825

CAR CONSTRUCTION

Filed Feb. 15, 1929

Fig. 1

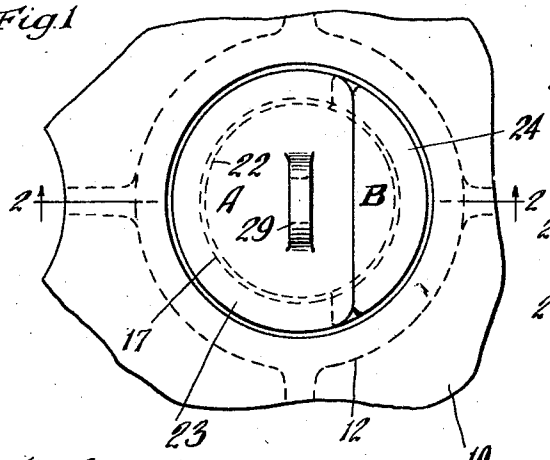


Fig. 3

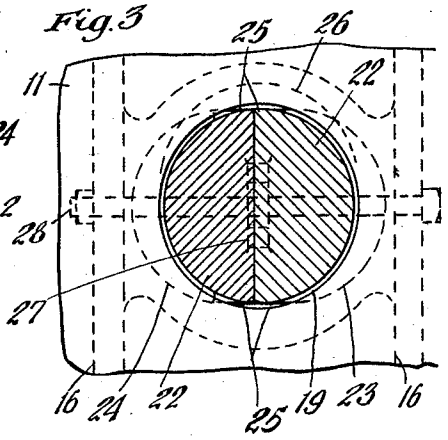


Fig. 2

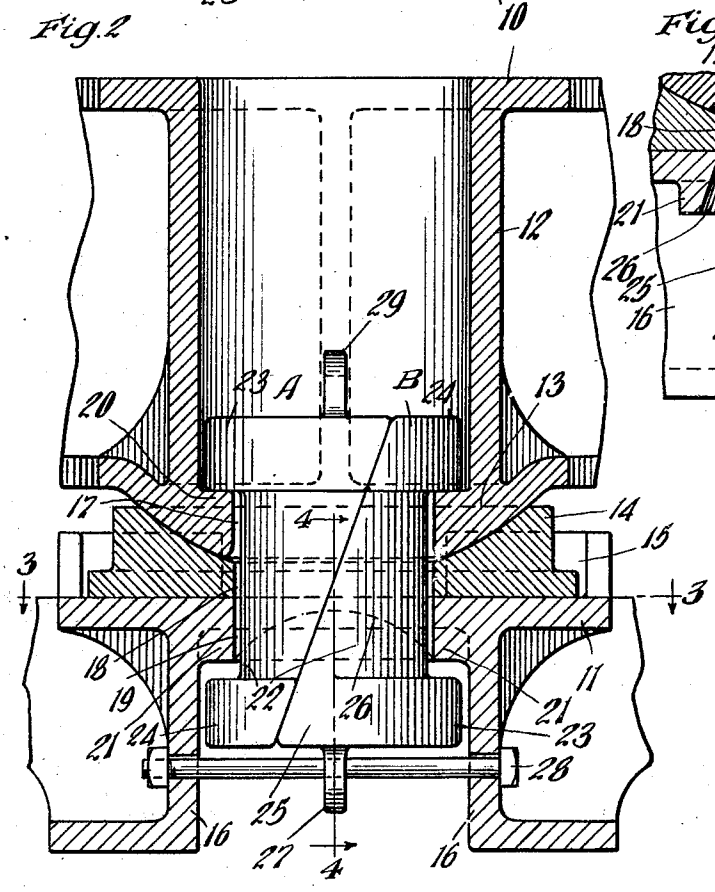
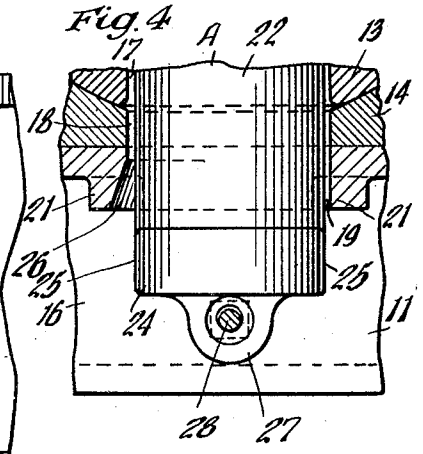


Fig. 4



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Patented Feb. 18, 1930 1,747,825

UNITED STATES PATENT OFFICE

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CAR CONSTRUCTION

Application filed February 15, 1929. Serial No. 340,207.

This invention relates to improvements in car construction.

One object of the invention is to provide a simple and efficient combined locking and center pin construction for connecting the body and truck bolsters of railway cars, which may be readily applied and removed and is of rugged design and effectively prevents accidental separation of the bolsters, especially in the event of collision, thereby practically eliminating the danger of telescoping of cars.

Another object of the invention is to provide a two-part combined locking and center pin for connecting body and truck bolsters of railway cars having center pin openings and retaining shoulders adjacent the openings, wherein each part of the pin comprises a shank member headed at opposite ends to cooperate with retaining shoulders on the respective bolsters and the sections have engaging, wedge acting faces disposed at an inclination to the longitudinal axis of the pin, whereby, when said sections are assembled by sliding one of the same lengthwise on the other, the head portion at each end of the pin is displaced laterally outwardly into overlapping relation with the retaining shoulders of the bolsters and the shank portion of the same enlarged in effective cross sectional area to fit the center pin openings of the bolsters.

A more specific object of the invention is to provide a two-part center pin of the character indicated, adapted to be entered through the center pin openings of cooperating body and truck bolsters of a railway car, each part having rigid head portions at opposite ends thereof, having shouldered engagement respectively with the body and truck bolsters, wherein the parts of the pin are divided longitudinally on a diagonal plane so that when the parts of the pin are assembled the head portions at the ends thereof will be displaced laterally outwardly into overlapping relation with the corresponding shoulders of the bolsters.

A still further object of the invention is to provide a combined locking and center pin construction of the character indicated in the preceding paragraph, wherein the side wall of the center pin opening of one of the bolsters is cut away adjacent the retaining shoulder thereof to provide clearance for the passage of the head portion of one of the parts of the pin, and the assembled pin is rotatable on its axis after application to the bolsters to bring the head portions thereof out of alignment with the cut-away portion of the bolster and into overlapping relation with the shoulder thereof, and wherein means is provided for locking the pin to said last named bolster against relative rotation, whereby the overlapping relation of the head portions and shoulders is maintained.

In the drawing forming a part of this specification, Figure 1 is a top plan view of a portion of the body bolster of a railway car, illustrating my improvements in connection therewith. Figure 2 is a transverse vertical sectional view, corresponding substantially to the line 2—2 of Figure 1. Figure 3 is a horizontal sectional view, corresponding substantially to the line 3—3 of Figure 2. And Figure 4 is a vertical sectional view, partly broken away, corresponding substantially to the line 4—4 of Figure 2.

In said drawings, 10 designates generally the body bolster of a railway car and 11 the cooperating truck bolster. The body bolster is provided with the usual top and bottom web members and a tubular portion 12 connecting the webs and adapted to accommodate the head member of a combined locking and center pin. At the bottom, the body bolster is provided with a depending bearing member 13 provided with a substantially spherical bearing surface which cooperates with a similar bearing surface of a bearing block 14 mounted on the truck bolster 11. The bearing block 14 is seated in a pocket at the top of the truck bolster indicated by 15. The truck bolster is also provided with top and bottom webs and vertically disposed spaced intermediate walls 16—16 defining a channel adapted to accommodate the bottom head of the combined locking and center pin. The body bolster, bearing block 14 and the truck bolster are provided with aligned center pin receiving openings 17, 18 and 19,

which are of the same diameter and of smaller size than the pockets provided by the tubular member 12 and the walls 16. An annular retaining shoulder 20 is thus provided on the body bolster adjacent the pin receiving opening 17 thereof. A similar shoulder 21 is provided adjacent the center pin receiving opening 19 of the truck bolster.

In carrying out my invention, I provide a two-part center pin member comprising sections A and B. The sections A and B are of similar design, except as hereinafter pointed out. Each section includes a shank portion 22 which has an outer curved surface adapted to fit within the center pin receiving openings 17, 18 and 19. The shank portion 22 of each section is provided with flanges 23 and 24 at opposite ends thereof. Each part of the pin is of tapered form or wedge shape and has a flat inner surface in a plane inclined to the longitudinal axis of the pin and engaging with the corresponding plane surface of the other part. The two parts of the pin are reversely arranged end for end, as clearly shown in the drawings, with the flange portion 23 of one part and the flange portion 24 of the other part, at the corresponding end of the pin, together forming a complete head member. The flanges 23 and 24, at the upper ends of the sections A and B, together form a substantially continuous circular head, while the flanges 23 and 24, at the bottom ends of the members A and B, are cut away on opposite sides, as indicated at 25—25 in Figure 3, so that these flanges may be passed through the center pin openings of the bolsters. All of the flanges are of such a width that they will overhang the retaining shoulders of the body and truck bolsters when the pin is completely assembled, as shown in the drawings. In order to permit the use of relatively wide flange members at the bottom ends of the parts A and B, the side wall of the opening 19 of the truck bolster is cut away, as indicated at 26, to provide clearance for the bottom flange 24 of the part A when being assembled with the part B and applied to the bolsters.

The flange 24 at the bottom end of the part A is preferably of such a width that it will overlap the shoulder of the truck bolster at said cut-away portion when completely assembled with the other part of the pin, thus preventing separation of the bolsters. However, in order to obtain greater overlapping of the bottom flange 24 of the member A and the shoulder of the truck bolster, the entire pin, when assembled, is rotated about its axis through an angle of 90°, so as to bring said flange 24 out of alignment with the cut-away portion 26 and into overlapping relation with the full-sized shoulder 21 of the truck bolster.

The part B of the pin is provided with a depending perforated lug 27 adapted to receive a locking bolt 28 having the opposite ends thereof extending through aligned openings in the walls 16. The locking bolt 28 holds the complete pin against rotation with respect to the truck bolster 11 after the pin has been rotated, as hereinbefore pointed out, thus maintaining the flange 24 out of alignment with the cut-away portion 26 of the side wall of the opening in the truck bolster

The part A of the pin is also provided with an upstanding perforated ear 29 with which a tool may be engaged to lift the part A so as to disengage the same from the center pin openings and facilitate withdrawal through the pocket of the body bolster.

In assembling my improved center pin with the body and truck bolsters of a railway car, the part B is first applied by inserting the same through the pocket of the body bolster and passing the bottom flange 23 thereof through the center pin receiving openings of the bolsters and bearing block 14.

After the flange 23 has been brought below the shoulder 21 of the truck bolster, the part B is displaced laterally to the right, as viewed in Figure 2, thereby bringing the flanges 23 and 24 into overhanging relation with the shoulders 21 and 20 of the truck and body bolsters. The part A is then applied by inserting the same through the pocket of the body bolster and passing the flange 24 at the lower end thereof through the openings of the bolsters and bearing plate 14. While the part A is being applied, the inclined inner surface of the same is held in contact with the inclined surface of the part B. The inclination of these surfaces is such that the flange 24 at the bottom end of the part A will freely pass the shoulder of the opening of the truck bolster, especially when the flange 24 is aligned with the cut-away portion 26 of said shoulder. When the parts of the pin have been completely assembled with the top surfaces of the flanges 23 and 24 at the upper end of the pin, and the bottom surfaces of the flanges 23 and 24 at the bottom end of the pin aligned, the flange 24 at the bottom end of the part A will have been displaced laterally to such an extent as to overhang the cut-away portion of the shoulder 21 of the truck bolster, thereby interlocking the pin with the bolsters. In this connection, it is pointed out that by providing a relative-narrower flange section at the bottom end of the part A, the same may be assembled with the bolsters without cutting away the side wall of the opening in the truck bolster.

In the preferred construction, as illustrated in the drawings, when the parts of the pin have been thus far assembled, the center pin is rotated through an angle of 90° so as to bring the flange 24 at the bottom end of the part A out of alignment with the cut-away section 26 and into overlapping rela-

tion with the widest portion of the retaining shoulder 21. When the parts have been rotated as pointed out, the opening in the lug will be in substantial alignment with the openings in the walls 16 of the truck bolster. The locking bolt 28 is then applied by passing the same through the opening of the lug 27. The parts of the pin are thus locked against rotation with respect to the truck bolster.

In case it is found desirable to separate the bolsters, it is merely necessary to remove the bolt 28 and rotate the pin through an angle of 90° so as to bring the flange 24 at the bottom end of the part A into alignment with the cut-away portion 26 of the wall of the opening in the truck bolster. After the pin has been brought to this position, the part A is first removed by withdrawing the same through the center pin receiving openings of the bolsters by lifting through the pocket of the body bolster. The part B is then displaced laterally toward the left, as shown in Figure 2, and also removed through the pocket of the body bolster.

As will be evident, both ends of the pin may be provided with cut-away heads so that the pin parts may be inserted either through the top of the body bolster or the bottom of the truck bolster. It is also pointed out that the arrangement of cut-away heads may be reversed so that the parts of the pin may be applied by inserting the same through the opening in the truck bolster.

With the pin completely assembled, the shank portions of the parts A and B together form a complete, continuous shank member, which substantially fills the center pin receiving openings of the bolsters and thus provides maximum resistance against shearing action. The relatively large head members at the opposite ends of the sections of the pin also provide substantial means for interlocking the pin with the bolsters.

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

I claim:

1. In car construction, the combination with body and truck bolsters of a railway car having aligned center pin openings and each bolster having a retaining shoulder adjacent the opening thereof; of a two-part center pin, each part including a shank portion and head elements at opposite ends thereof, adapted to cooperate with the shoulders of the body and truck bolsters, respectively, the shank portions and head elements of said parts, when assembled, forming a complete pin having complete head members at opposite ends thereof, said parts of the pin having wedging engagement with each other, whereby upon relative longitudinal sliding movement of the parts toward each other the complete pin is expanded, thereby increasing the cross sectional area of the shank and head members thereof and bringing the head members at opposite ends of the pin into overhanging relation with the shoulders of the bolsters.

2. In car construction, the combination with body and truck bolsters of a railway car having aligned center pin openings and each bolster having a retaining shoulder adjacent the opening thereof; of a two-part center pin, said pin being divided lengthwise and having the parts thereof in direct abutment, each part of the pin having heads at opposite ends thereof in locking engagement with the shoulders of the body and truck bolsters, respectively.

3. In car construction, the combination with body and truck bolsters of a railway car having aligned center pin openings and each bolster having a retaining shoulder adjacent the opening thereof; of a two-part center pin divided lengthwise on a diagonal plane, each part of said pin having head members at opposite ends thereof having engagement with the shoulders of the body and truck bolsters.

4. In car construction, the combination with body and truck bolsters of a railway car having aligned center pin openings and each bolster having a retaining shoulder adjacent the opening thereof; of a sectional combined locking and center pin, the sections of said pin having cooperating wedge surfaces inclined to the longitudinal axis of the pin, each of said sections having flanges at opposite ends thereof, said flanges, when the sections are completely assembled, defining head members at opposite ends of the pin interlocked with the shoulders of the body and truck bolsters.

5. In car construction, the combination with body and truck bolsters of a railway car having aligned center pin openings and each bolster having a retaining shoulder adjacent the opening thereof; of a two-part center pin comprising a pair of tapered sections reversely arranged end for end, each of said sections having a shank portion disposed within the pin receiving openings of the bolsters and head elements at opposite ends thereof interlocked with the shoulders of said bolsters, respectively.

6. In car construction, the combination with body and truck bolsters of a railway car having aligned center pin openings and each bolster having a retaining shoulder adjacent the opening thereof; of a two-part pin, each part including a shank portion having head elements at opposite ends thereof interlocked with the shoulders of the body and truck bolsters, respectively, each of said parts being larger at one end than at the other, said parts being reversely assembled end for end and in contact with each other, providing a complete

pin member having a cylindrical shank portion loosely fitting within the center pin receiving openings of the bolsters and symmetrical head members at opposite ends thereof.

7. In car construction, the combination with body and truck bolsters of a railway car having aligned center pin openings and each bolster having a retaining shoulder adjacent the opening thereof; of a two-part center pin, each part comprising a shank portion and head members at opposite ends, said parts having cooperating engaging surfaces on the inner sides thereof, inclined to the longitudinal axis of the pin, said parts having the head members at one set of ends thereof, so formed that the same will pass freely through the receiving openings when the parts are inserted in said openings in succession, and the part last inserted being movable along the inclined surface of the other part to guide the head at the end thereof through said opening clear of the shoulder and displace the head laterally into interlocking engagement with said shoulder when the pin is completely assembled.

8. In car construction, the combination with body and truck bolsters of a railway car having aligned center pin openings and each bolster having a retaining shoulder adjacent the opening thereof; of a two-part center pin, each part comprising a shank portion and head members at opposite ends, said parts having cooperating engaging surfaces on the inner sides thereof, inclined to the longitudinal axis of the pin, said parts having the head members at one set of ends thereof, so formed that the same will pass freely through the receiving openings when the parts are inserted in said openings in succession, and the part last inserted being movable along the inclined surface of the other part to guide the head at the end thereof through said opening clear of the shoulder and displace the head laterally into interlocking engagement with said shoulder when the pin is completely assembled, the opening of one of said bolsters being cut away adjacent the shoulder thereof to provide clearance for said head element, said pin being rotatable to bring the head element out of registration with the cut-away portion and overlap the same with the shoulder of said bolster; and means for locking the assembled pin against rotation with respect to the last named bolster.

In witness that I claim the foregoing I have hereunto subscribed my name this 13th day of February, 1929.

WILLIAM A. GEIGER.