April 12, 1949. G. E. DATH 2,466,932

LOCKING CENTER PIN FOR RAILWAY CARS

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Fig. 1

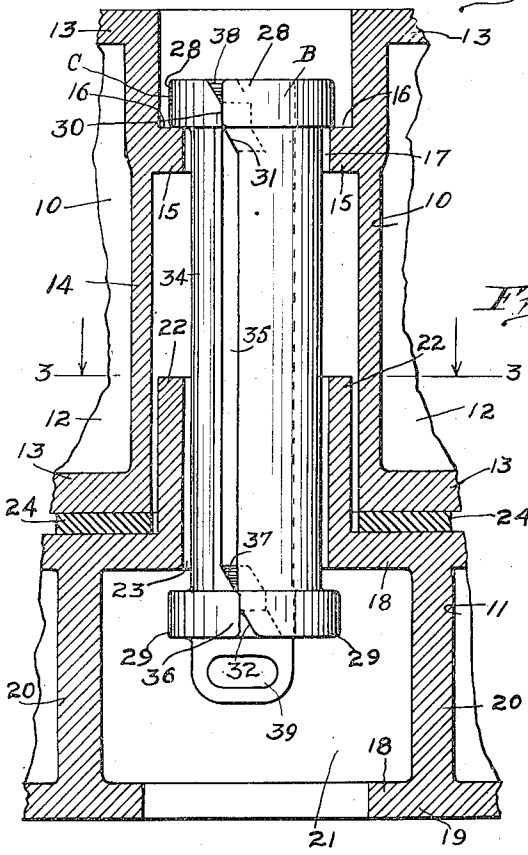


Fig. 2

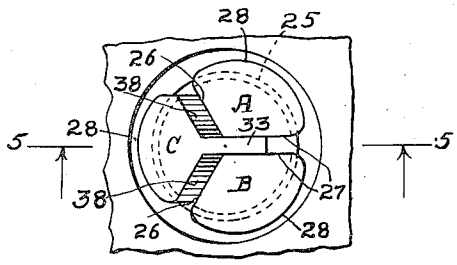


Fig. 4

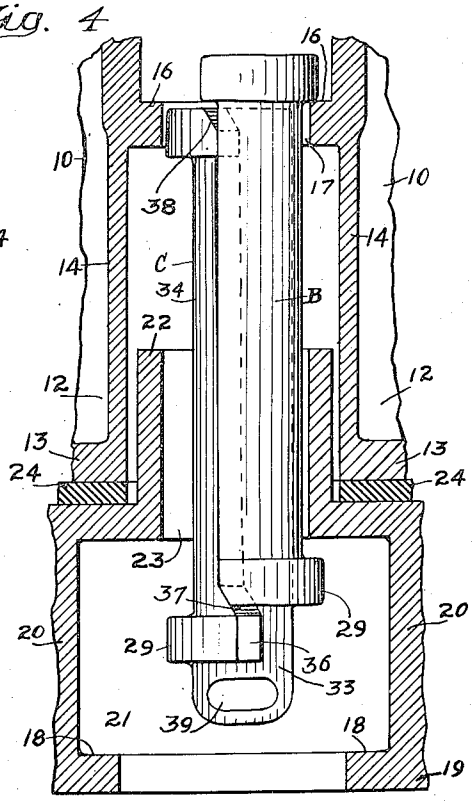
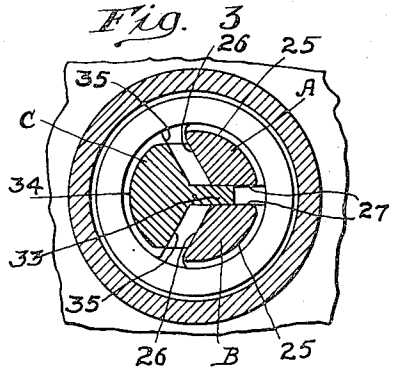


Fig. 3



Inventor:
George E. Dath.

By Henry Fuchs.
Atty.

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Fig. 5.

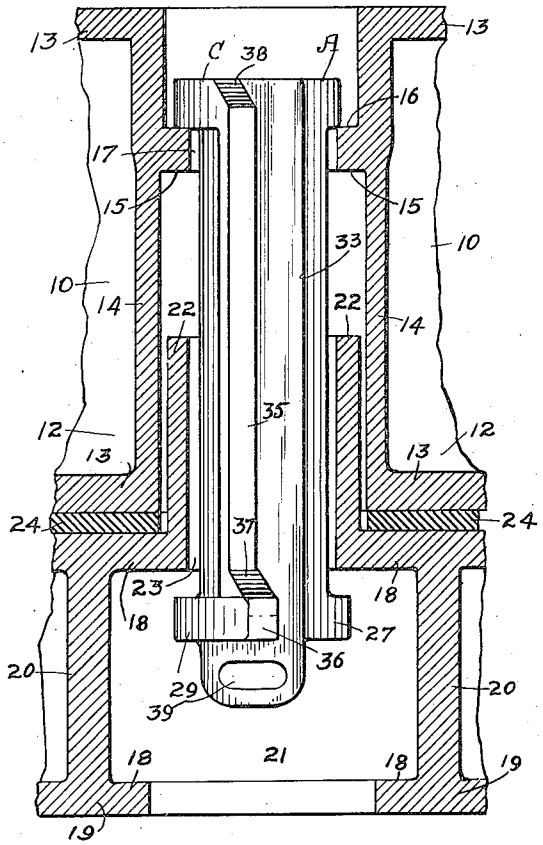


Fig. 6

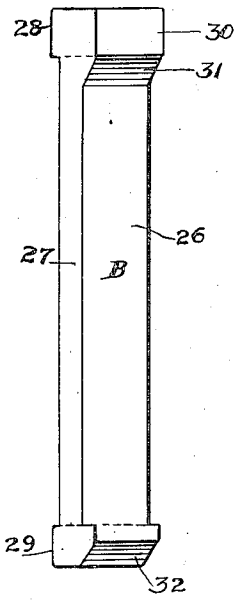


Fig. 8

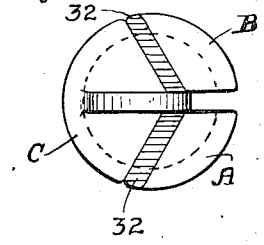
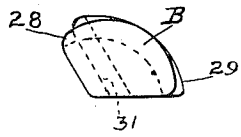


Fig. 7



Inventor:
George E. Dath.

By Henry Fuchs.
Atty.

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2,466,932

LOCKING CENTER PIN FOR RAILWAY CARS

George E. Dath, Mokena, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware

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8 Claims. (Cl. 105—200)

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This invention relates to improvements in locking center pin for railway cars.

One object of the invention is to provide an improved construction for railway cars having the usual body and truck bolsters, wherein the bolsters are connected for swiveling movement and locked against vertical separation by an expandible center pin of simple and efficient design.

A further object of the invention is to provide a center pin of the character indicated composed of three sections, wherein one of the sections is provided with a spreading projection in the form of a flange or fin engaged between the two remaining sections to hold the same spread apart and in shouldered engagement with the bolsters to lock the latter against vertical separation.

A still further object of the invention is to provide a center pin, as set forth in the preceding paragraph, wherein the section having the spreading projection has camming engagement with the two remaining sections to hold the former displaced laterally outwardly in shouldered engagement with the bolsters.

Other objects of the invention will more clearly appear from the description and claims hereinafter following.

In the drawings forming a part of this specification, Figure 1 is a vertical sectional view through the body and truck bolsters of a railway car, illustrating my improved center pin in connection therewith, the center pin being shown in elevation. Figure 2 is a top plan view of Figure 1. Figure 3 is a horizontal sectional view, corresponding substantially to the line 3—3 of Figure 1. Figure 4 is a view, similar to Figure 1, illustrating the manner of applying the improved pin to the bolsters. Figure 5 is a view, similar to Figure 1, with one of the sections of the pin omitted to more clearly illustrate the construction of the pin. Figure 6 is an elevational view of one of the sections of the pin, the section illustrated being that omitted in Figure 5. Figure 7 is a top plan view of Figure 6. Figure 8 is a bottom plan view of my improved pin, looking upwardly in Figure 1.

In said drawings, 10 indicates the body bolster of a car and 11, the truck bolster. The body bolster is of the cast type and has diaphragm sections 12—12, top and bottom walls 13—13, and a center section 14 to accommodate the center pin. The section 14 is of cylindrical, tubular form, as shown, and has an annular, inwardly projecting flange 15 between the top and bottom ends, thereby providing an annular shoulder 16. The opening 17 defined by this flange is circular

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in form and of slightly greater diameter than the shank of the expanded center pin. The truck bolster 11, which is also preferably a casting, has top and bottom walls 18—18, connecting side webs 19—19, and spaced vertical walls 20—20. The spaced walls 20—20 define a pocket 21 therebetween adapted to accommodate the bottom head of the center pin. The top wall of the truck bolster is provided with an upstanding, hollow boss in the form of an annular flange 22 which projects into and is accommodated within the lower end of the tubular center section 14 of the body bolster 10. The opening 23 defined by the flange 22 is in axial alignment with, and corresponds in diameter to, the opening 17 provided by the flange 15 of the tubular section of the bolster 10. The usual bearing plate or shim 24 is interposed between the body and truck bolsters.

Referring to the drawings, the body bolster is interlocked with the truck bolster by my improved locking center pin, which comprises broadly three elongated sections or members A, B, and C, which are headed at opposite ends.

The sections A and B are of similar design, except as hereinafter pointed out. Each of these sections is in the form of an elongated bar of broadly triangular, transverse cross section having a transversely curved, cylindrical, outer face 25, and flat inner faces 26 and 27 extending lengthwise thereof and angularly disposed with respect to each other. In the assembled condition of the pin, the sections A and B are arranged side by side in spaced relation, with the faces 27—27 thereof, which may be termed the lateral side faces, opposed to each other, and the flat inner faces 26—26, which may be termed inner side faces, opposed to the section C. At the upper end thereof, each member A and B is provided with a curved, outstanding flange 28, which is eccentric with respect to the pin. At the lower end, each member A and B is provided with a curved, outstanding, bottom flange 29, which is concentric with the pin. The flanges 28 and 29 of each section A and B form top and bottom head portions adapted to have shouldered engagement with the bolsters. On the inner side of each of these sections, that is, the side presenting the face 26, a laterally inwardly extending flange or lug 30 is provided at the upper end of the pin, said lug having a vertical, flat, outer face and an inwardly inclined bottom face 31. The lugs 30—30 of the two sections A and B are adapted to bear on the flat, inner side of the section C to hold the latter spaced from the sections A and B. At the lower end of each section A and B, the inner side thereof

is beveled off on the face 26, as indicated at 32, said beveled portion presenting a face or surface having the same inclination as the face 31 of the lug 30.

The main body portion of the section C of the pin is in the form of an elongated bar of broadly triangular, transverse cross section, having a longitudinally extending, laterally inwardly projecting flange or platelike fin portion 33 thereon engaged between the sections A and B, that is, between the opposed lateral faces 27—27 thereof. Said main body portion of the section C presents a transversely curved, substantially cylindrical, outer face 34 and flat, inner side faces 35—35 at an angle to each other opposed to the faces 26—26 of the sections A and B and parallel thereto. At the top and bottom ends thereof, the section C is provided with laterally projecting flanges, forming heads similar to the flanges 28 and 29 of the sections A and B and also indicated by 28 and 29, respectively. At the lower end, the section C has a laterally inwardly projecting lug or flange 36 on each face 35 thereof, which bears on the inner side face 26 of the corresponding section A and B. Each lug 36 has a beveled or inclined top face 37, corresponding in inclination to the face 32 of the corresponding section A or B. The upper end of the section C is beveled off on the inner side, as indicated at 38—38, the inclination of the faces presented by these beveled portions corresponding to the inclination of the faces 31—31 of the lugs 30—30 of the members A and B.

To facilitate manipulation of the member C, the same is preferably provided with a depending eye portion 39 at the lower end thereof with which a suitable tool may be engaged.

The eccentric flanges 28—28—28 at the top ends of the members A, B, and C are of such a size that they will pass freely through the pin receiving openings of the body and truck bolsters when the pin is in contracted condition, that is, the top head of the member A is of such a size and outside contour that it will pass freely upwardly and downwardly through the center pin receiving openings when the members B and C are absent, the head of the member B is of such a size and outside contour that it will pass freely through said openings when the member A is in laterally outwardly displaced position with the head thereof overhanging the shoulder 16 of the body bolster and the member C is absent, and the head 28 of the member C is of such a size and outside contour that it will pass freely through said openings when the pin is in partially contracted condition with the members A and B in position and spread apart and the inner sides 35—35 of the member C abutting the inner side faces 26—26 of said members A and B, as shown in Figure 4.

In applying my improved center pin, the member A is first inserted in the center pin openings of the bolsters by passing the same upwardly through said openings until the upper head or flange 28 thereof reaches a position above the shoulder 16 of the body bolster. When thus disposed, the member A is displaced radially outwardly to engage the flange 28 thereof over the shoulder 16 and the flange 29 beneath the shoulder of the opening of the truck bolster. The member B is then inserted upwardly in the bolster openings alongside of the member A with the lateral side faces 27—27 of these two members in abutment. When the flange 28 of the member B reaches a position above the shoulder 16 of the body bolster, the section B is displaced laterally

outwardly away from the member A to bring the flange 28 thereof in overhanging relation with the shoulder 16 and the bottom flange 29 beneath the shoulder of the truck bolster. With the members A and B thus positioned and spread apart, the member C is inserted upwardly in the bolster openings, entering the platelike fin 33 of this member between the members A and B, as shown in Figure 4, with the inner side faces 35—35 of the member C in abutment with the faces 26—26 of the members A and B. As will be seen in Figure 4, the pin is thus in partly contracted condition, with the member C inwardly displaced so that the top head 28 thereof may pass freely through the bolster openings. As the member C is pushed upwardly, the same is cammed laterally outwardly by engagement of the cam faces 37 and 38 thereof with the cam faces 32 and 31, respectively, of the sections A and B. In this operation, the sections A and B are lifted or forced upwardly by the action of the member C until the flange 28 of the latter reaches a position above the shoulder 16 of the body bolster, whereupon further camming action of the cam faces of the members C and A and B force the member C outwardly to engage the flange 28 over the shoulder 16 of the body bolster and the flange 29 beneath the shoulder of the truck bolster, at the same time permitting the members A and B to drop to the position shown in Figure 1. The upper and lower ends of the pin are thus held spread apart, the two sections A and B of the pin being held apart by the fin 33 of the member C and the member C being spaced laterally from the sections A and B by the lugs 30—30 at the upper ends of the latter engaging the inner sides of the member C and the lugs 36—36 of the latter engaging the inner side faces 26—26 of the members A and B. With the heads 28—28—28 at the upper ends of the three sections of the pin resting on the shoulder 16 of the body bolster, the pin will be maintained in the spread condition shown in Figures 1, 2, and 3, locking the bolsters together. The weight of the members A and B of the pin will effectively prevent the pin from working upwardly to a position wherein the head of the member C could slip below the lugs 30—30 of the members A and B.

In removing the center pin from the bolsters, the procedure is substantially the reverse of that just described, the members A and B being pushed upwardly until sufficient clearance is provided for lateral inward displacement of the member C to disengage the top head 28 thereof from the shoulder 16 of the body bolster and permitting withdrawal of the member C by being pulled downwardly or dropped out under the influence of gravity. The members A and B are then removed in succession.

As will be evident from the preceding description taken in connection with the drawings, in my improved design of center pin construction, advantage is taken of the usual play or clearance provided between the heads of the pin and the shoulders of the bolsters to permit relative longitudinal displacement of the members of the sectional pin in assembling the same with the bolsters. It is further pointed out that by so designing the pin that the members composing the same are insertable within the center pin receiving openings of the bolsters one at a time and in succession and taking advantage of the usual clearance or play provided between the shoulders of the bolsters and the heads of the members of the pin, maximum overlap of the heads with re-

spect to the shoulders at the pin receiving openings of the bolsters is made possible, thereby giving the required strength.

I claim:

1. In car construction, the combination with body and truck bolsters having aligned center pin receiving openings; of a three part, lengthwise divided, sectional center pin connecting said bolsters, each section comprising a shank member extending through said openings and laterally outwardly projecting heads at opposite ends of said shank member, the shank members of said three sections being spaced about the central longitudinal axis of the pin; and a laterally inwardly projecting fin on the shank member of one of said sections engaged between the shank members of the remaining two sections to hold said last named sections spaced apart with the heads thereof in shouldered engagement with the bolsters.

2. In car construction, the combination with body and truck bolsters having aligned center pin receiving openings; of a three part, lengthwise divided, sectional center pin connecting said bolsters, said sections being arranged in annular series within the openings of said bolsters about the central longitudinal axis of said pin, one of said sections having a radially inwardly projecting spacing fin, the remaining two sections being disposed at opposite sides of said fin and held laterally spaced apart thereby, each of said sections having heads at opposite ends thereof in shouldered engagement with said bolsters.

3. In car construction, the combination with body and truck bolsters having aligned center pin receiving openings and abutment shoulders at said openings; of a three part, lengthwise divided, sectional pin extending through said openings, each part comprising an elongated member having heads at opposite ends adapted to overlie said shoulders to prevent separation of said bolsters; projecting means on one of said parts engaged between the remaining two parts to hold the latter spread apart; and spacing means for holding said part having the projecting means thereon, laterally spaced from said remaining two parts, said spacing means being formed partly on each of said parts.

4. In car construction, the combination with body and truck bolsters having aligned center pin receiving openings and abutment shoulders at said openings; of a three part, lengthwise divided, sectional pin extending through said openings and connecting said bolsters, each part comprising an elongated member having heads at opposite ends adapted to overlie said shoulders to prevent separation of said bolsters; spacing means for holding said parts of the pin spread apart, said spacing means comprising a fin on one of said parts engaged between the two remaining parts; and spacing projections on said remaining parts and said part having the fin.

5. In car construction, the combination with body and truck bolsters having aligned center pins receiving openings; of a three part, lengthwise divided, sectional center pin extending through said openings and connecting said bolsters, each of said parts comprising a shank member extending through said openings and laterally outwardly projecting heads at opposite ends of said shank portion; a radially inwardly projecting fin on one of said parts engaged between the two remaining parts to hold the latter spaced apart; and a laterally projecting inner flange at one end of each part of the pin, the flanges of said two remaining parts being at

one end of the pin and engaging the inner side of the part having the fin, and the flange of said last named part being at the opposite end of the pin and engaging the inner sides of said remaining two parts, said flanges holding said parts spaced apart between said inner flanges.

6. In car construction, the combination with body and truck bolsters having aligned center pin receiving openings and abutment shoulders at said openings; of a lengthwise divided, sectional center pin connecting said bolsters, said pin extending through said openings, said sectional pin comprising a pair of elongated elements having heads at opposite ends adapted to overlie said shoulders; and an elongated member having a spreading fin engaged between said elements to hold the same spaced apart, said member having heads at opposite ends adapted to overlie said shoulders, each of said elements having a lateral inward enlargement thereon at one end of said pin engaging the inner side of said member, and said member having a lateral inward enlargement thereon at the other end of the pin engaging the inner sides of said pair of elements.

7. In car construction, the combination with body and truck bolsters having aligned center pin receiving openings and abutment shoulders surrounding each opening; of a lengthwise divided, sectional pin connecting said bolsters, said pin extending through said openings, said pin comprising a pair of elongated members having heads at opposite ends thereof adapted to overlie said abutment shoulders, and a third elongated member having a laterally inwardly extending flange engaged between the members of said pair to hold the same spread apart, and having heads at opposite ends adapted to overlie said abutment shoulders; a laterally inwardly offset section on the inner side of each of said members of said pair at one end of said pin; and a laterally inwardly offset section on said third member at the opposite end of said pin, the offset section of each member of said pair bearing on the inner side of said third named member, and the offset section of said third named member bearing on the inner sides of the members of said pair to hold said third named member separated from said pair of members between said offset sections.

8. In car construction, the combination with body and truck bolsters having aligned center pin receiving openings; of a sectional center pin insertable in said openings, said sectional pin comprising two similar sections and a third section, said third section having a fin laterally projecting therefrom and engaged between said two similar sections to hold the same spaced apart, each of said three sections comprising a shank member extending through said openings and heads at opposite ends of said shank member projecting laterally therefrom, said two similar sections being insertable in said openings in succession, the head members at one set of ends thereof being of a size to pass freely through said openings as said two sections are inserted in succession while said third section is absent, said third section being insertable in said openings with the fin thereof extending between the shank members of said two similar sections to hold said last named sections spaced apart with the heads thereof in overlapping shouldered engagement with the bolsters, the head at one end of said third section being of a size to pass freely through the portions of said openings which are unoc-

cupied by said two similar sections, said third section being laterally outwardly displaceable to shoulder the heads thereof against the bolsters.

GEORGE E. DATH.

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