K. WILLIAMS
CENTER PIN FOR BODY AND TRUCK
BOLSTERS OF RAILWAY CARS

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By: ...
This invention relates to improvements in locking center pins for connecting the body and truck bolsters of railway cars.

One object of the invention is to provide a locking center pin of the character heretofore set forth, comprising a plurality of outer members having shouldered engagement with the body and truck bolsters respectively, and a filler element for holding the outer members of the pin spread apart, wherein simple and efficient means for locking the filler element against removal, in the form of a locking sleeve rotatably connected to the filler element, is provided.

A more specific object of the invention is to provide locking means of the character indicated, in the form of a rotatable sleeve having radially extending locking lugs, provided with downwardly opening seats engageable over radially inwardly extending supporting lugs on the outer members of the pin, and being turnable in reverse directions to bring the lugs into locking engagement with each other and unlock these lugs in the operations of applying and removing the center pin.

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

In the accompanying 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. Figure 2 is a broken front elevational view, on an enlarged scale, of the lower end portion of the center pin shown in Figure 1. Figure 3 is a transverse vertical sectional view corresponding substantially to the line 3—3 of Figure 2. Figure 4 is a bottom plan view of Figure 2. Figure 5 is a horizontal sectional view, corresponding substantially to the line 5—5 of Figure 4, looking upwardly in said figure. Figure 6 is a view similar to Figure 3, showing a step of the assembling operation of the pin. Figure 7 is an elevational view of the locking sleeve of my improved pin as illustrated in Figure 2. Figure 8 is a top plan view of Figure 1, partly broken away. Figure 9 is a bottom plan view of the locking sleeve illustrated in Figure 1. Figure 10 is a top plan view of the filler element of the center pin illustrated in Figure 1.

In said drawings, 10 indicates the body bolster of a railway car, and 11 the truck bolster. The body and truck bolsters are of well-known design, the body bolster including the usual center section 12 adapted to accommodate the center pin. The center section 12 is of cylindrical tubular form and is provided with an inwardly project-
three outer members are concentric with the cylindrical shank of the pin and are adapted to overlap the shoulder 16 of the truck bolster. The bottom head portion 27 of each outer member A is provided with a depending arm 23 which is located midway between the side faces 24—24 of said member and has a laterally inwardly extending, horizontally disposed, supporting lug 29 at its lower end which is radial to the central axis of the pin.

The filler element B comprises a central shank portion 30 and three platelike radial wings 31—31—31 extending from said shank portion. The platelike wings 31—31—31 fill the spaces between the outer members A—A—A to form with said outer members a complete pin of true cylindrical cross section. The shank 30 is extended below the lower ends of the wings 31—31—31 and said extended portion is provided with a cylindrical bearing portion 32 of reduced size, on which the sleeve C is supported for rotation. At the upper end of the bearing portion 32, the shank 30 of the element 33 provides a downwardly facing shoulder 33 adapted to bear on the upper end of the sleeve C. At the lower end thereof, each wing 31 is laterally enlarged to provide a headlike portion 34 adapted to engage underneath the shoulder 16 of the truck bolster to lock downwardly displaced filler element B.

The headlike portions 34—34—34 are of lesser thickness in height than the bottom flanges of the outer members of the center pin, as clearly shown in Figures 2 and 3, whereby the filler element B and locking sleeve C may be lifted upward to a sufficient extent to effect unlocking of the sleeve from the lugs 29 of the outer members.

The locking sleeve C is in the form of a collar which is rotatably mounted on the bearing portion 32 of the filler element B and has three radially projecting locking arms 35—35—35 therewith adapted to rest on the lugs 29—29—29 of the outer members, each arm being provided with a downwardly opening pocket or seat 36 in which the corresponding lug 29 is engageable. The arms 35 are of such a size that they will freely pass through the spaces between the lugs 29—29—29 of the adjacent outer members of the pin as the sleeve is moved vertically in applying or removing the same.

In the assembled condition of the pin, the weight of the filler element, by engagement of the shoulder 33 thereof with the sleeve C, holds the latter in locking engagement with the outer members A—A—A to prevent rotation of said sleeve, the arms 35 of the latter being interlocked with the lugs 29 of the outer members through the pockets 38 being seated over these lugs. The sleeve C in turn effectively retains the filler element in position between the outer members by supporting the same against downward movement. As a further safeguard against the sleeve becoming unlocked from the outer members, a cotter pin 40 may be used to lock the sleeve C on the filler element B, the bearing portion of the shank 30 of the element B and the opposed walls of the sleeve C being provided with aligned openings 41 and 42 for this purpose.

In applying my improved center pin, the three outer members A—A—A are first inserted in the openings of the bolsters, from beneath the truck bolster, and spread apart to bring the heads thereof in shoudered engagement with the bolsters. After spreading apart the outer members, the filler element B is inserted from beneath the truck bolster, the wings 31—31—31 being engaged between the outer members. Then the sleeve C is placed on the bearing portion 32 of the filler element B and forced upwardly until the arms 35—35—35 thereof reach a level above the lugs 29—29—29 of the outer members A—A—A, the sleeve having been first turned to align the arms 35—35—35 with the openings between the lugs 29—29—29 to pass through said openings. While the sleeve C is being thus forced upwardly, the same comes into engagement with the shoulder 33 of the filler element lifting the same therewith. With the arms 35 disposed above the level of the lugs 29—29—29, the sleeve C is given a partial turn either to the right or left to engage the arms 35 over the lugs 29 with the pockets 36 of the arms registering with said lugs, as shown in Figure 5. The sleeve C and the filler element B which is supported thereon are then permitted to drop to engage the pockets 36 over the lugs and lock the sleeve against rotation. As a further safeguard, the cotter pin 40 may then be applied through the openings 41 and 42 of the filler element and the sleeve.

To remove the center pin, the procedure is the reverse of that just described. The sleeve is first raised or pushed upwardly to disengage the arms 35 from the lugs 29, lifting the filler element therefrom. The sleeve thus being freed for rotation is turned to register the arms 35 with the openings between the lugs 29, thereby permitting withdrawal of the sleeve and the filler element B. After removal of the filler element B, the outer members A—A—A are collapsed and removed.

I claim:

1. A center pin for connecting the body and truck bolsters of a railway car, wherein the bolsters are provided with aligned center pin-receiving openings, said center pin being insertable from beneath said truck bolster, said pin including a plurality of outer members headed at opposite ends and a filler element having wings extending between said outer members, said filler element holding the heads of the outer members in shoudered engagement with the bolsters, said filler element having a depending axial bore projection thereon, a locking sleeve rotatably mounted on said bearing projection, said locking sleeve supporting said filler element against removal in downward direction, spaced locking projections on said sleeve, and spaced lugs on said outer members on which said locking projections are supported, said sleeve being rotatable on said bearing projection to engage said locking projections over said lugs and disengage the same therefrom.

2. A center pin for connecting the body and truck bolsters of a railway car, wherein the bolsters are provided with aligned center pin-receiving openings, said center pin being insertable from beneath said truck bolster, said pin including a plurality of outer members headed at opposite ends and a central filler element having wings engaged between said lugs, said filler element holding the pin expanded with the heads in shoudered engagement with the bolsters, said filler element having a depending central bearing projection, a locking sleeve rotatably supported on said projection, circumferentially spaced radially inwardly extending lugs on said outer members surrounding said sleeve, and radially projecting arms on said sleeve having downwardly opening slots therein engageable over said lugs, said sleeve supporting said filler ele-
ment against removal in downward direction, said locking sleeve, with the filler element supported thereon, being vertically movable between said lugs of said outer members to position the arms of said sleeve above said lugs, and being turnable about the vertical axis of the pin to bring said slots in said arms in registering relation with respect to said lugs.

3. A center pin for connecting the body and truck bolsters of a railway car, wherein the bolsters are provided with aligned center pin-receiving openings, said center pin being insertable from beneath said truck bolster, said pin including a plurality of outer members headed at opposite ends, and a filler element having wings extending between said outer members, said filler element holding the heads of the outer members in shouldered engagement with the bolsters, said filler element having a depending axial bearing projection thereon, a locking sleeve rotatably mounted on said bearing projection, said locking sleeve supporting said filler element against removal in downward direction, spaced locking projections on said sleeve, spaced lugs on said outer members on which said locking projections are supported, said sleeve being rotatable on said bearing projection to engage said locking projections over said lugs and disengage the same therefrom, and means for locking said sleeve against rotation with respect to said outer members, said means being held in locking engagement by the weight of said filler element.

4. A center pin for connecting the body and truck bolsters of a railway car, wherein the bolsters are provided with aligned center pin-receiving openings, said center pin being insertable from beneath said truck bolster, said pin including a plurality of outer members headed at opposite ends and a central filler element having wings engaged between said outer members for holding the pin expanded with the heads in shouldered engagement with the bolsters, a locking member below said filler element, circumferentially spaced radially inwardly extending lugs on the lower ends of said outer members surrounding said locking member, and radially projecting arms on said locking member having downwardly opening slots therein engageable over said lugs, said locking member supporting said filler element against removal in downward direction, said locking member, with the filler element supported thereon, being vertically movable between said lugs of said outer members to position the arms of said locking member above said lugs, and being turnable to bring said slots in said arms in registering relation with respect to said lugs.

KEITH WILLIAMS.

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The following references are of record in the file of this patent:

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