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RAILWAY AXLE JOURNAL STOP AND LUBRICATOR PAD RETAINER

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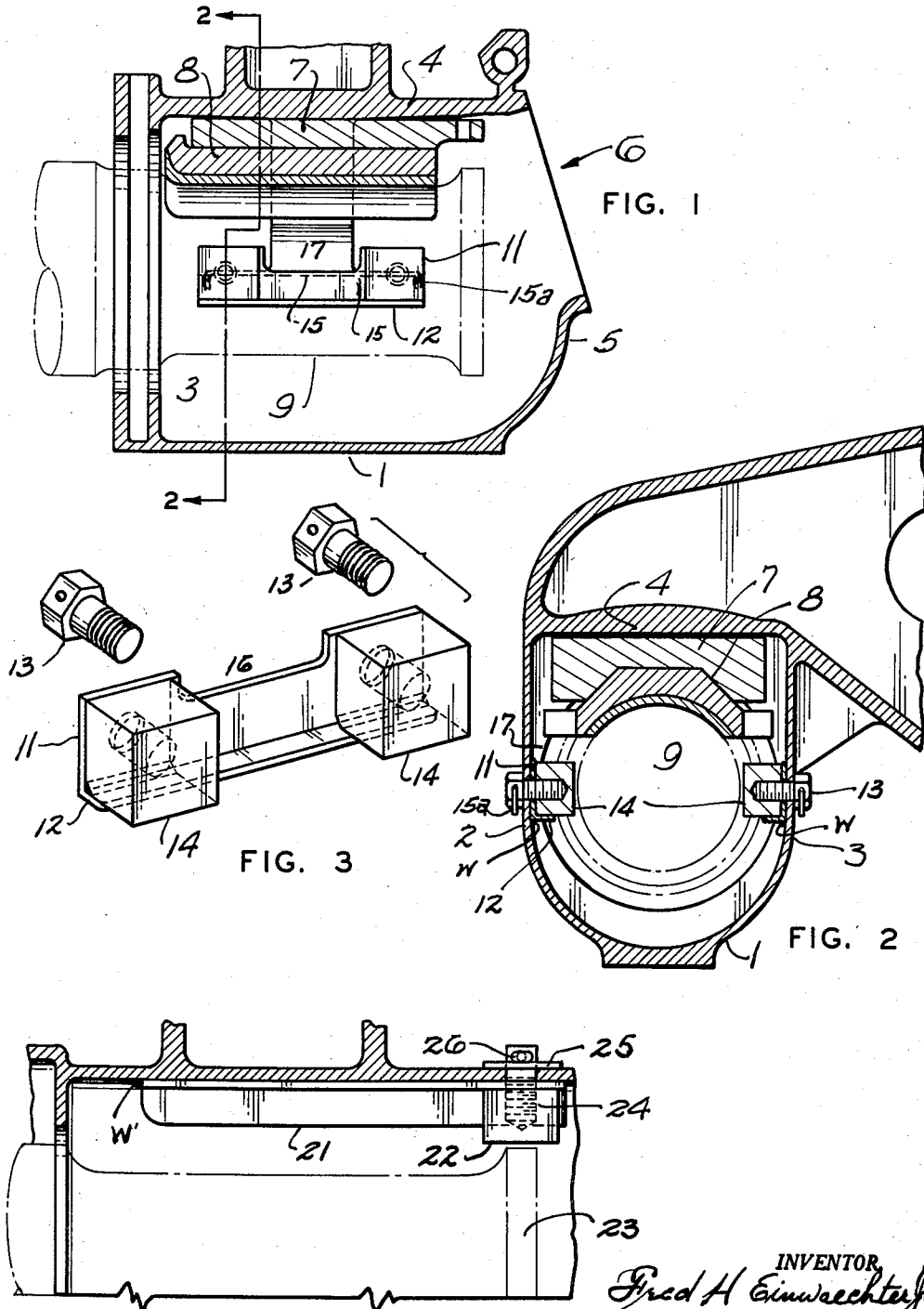


FIG. 4

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RAILWAY AXLE JOURNAL STOP AND LUBRICATOR PAD RETAINER

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4 Claims. (Cl. 308—38)

The invention relates to railway rolling stock and more particularly to the assembly of a railway axle journal and the journal box carried thereby, and is directed particularly to avoiding undesirable relative movement of the journal and journal box transversely of the journal axis. It is desired to avoid undue wear and pounding of the journal bearing; to avoid the riding of the journal bearing up the journal; to avoid the entrance of waste, dirt or other foreign matter between the journal and bearing, and to provide stops between the axle and journal box side walls and to facilitate the mounting and replacement of worn stops, and to prevent rotary movement of lubrication pad about the journal.

These and other detailed objectives are obtained by the structure illustrated in the accompanying drawings, in which:

Figure 1 is a vertical section through an Association of American Railroads (A.A.R.) journal box, wedge and bearing, with a journal indicated in broken lines and a journal stop mounted on the far side wall of the box.

Figure 2 is a vertical transverse section through the box on line 2—2 of Figure 1.

Figure 3 is an exploded view of one of the stop assemblies shown in Figures 1 and 2.

Figure 4 is a horizontal section through one longitudinal half of a box showing a modification of the structure shown in Figures 1-3.

The journal box shown in Figures 1 and 2 includes a bottom wall 1, side walls 2 and 3, a top wall 4 and a front wall 5, having an opening 6 for inspection, application of waste and oil and through which the novel stop assemblies of the present invention may be inserted and removed.

The box may be mounted upon wedge 7, bearing 8 and journal 9 in the usual manner with the usual clearances between the journal and the side walls of the box.

Secured to each box inner side wall is an elongated angle bracket having an upright leg 11 and a horizontal leg 12. The bracket may be secured to the box side wall by welds W or by tap screws 13, or both. A pair of relatively short thrust blocks 14 are seated on each horizontal leg 12 and engage the bearing-carrying face of the journal at the rear of the journal outer end collar and in front of the dust guard-engaging portion of the journal, respectively. The blocks are spaced apart lengthwise of the bracket, being disposed at the inner and outer ends of the bracket with a space between them exceeding the width of either thrust block. Preferably blocks 14 are of bronze or other nonferrous metal, or they may be made of hardwood or suitable plastic material.

Each block is threaded or drilled to receive an individual screw 13 and a retaining wire 15 is passed through the screw heads with its ends bent down at 15a to hold the screws against accidental rotation.

Each bracket upright leg 11 is recessed, as best shown at 16 (Figure 3), to accommodate the inwardly offset portion 17 of the box side wall, but the end portions of each bracket are high enough to provide a bearing for

the thrust blocks throughout their depth. The thrust blocks are mounted at the level of the journal axis. Each block may be individually removed from the supporting bracket and through the box front opening 6, for replacement, by removing the corresponding retaining screw 13.

Figure 4 illustrates another arrangement, in which the elongated angle bracket 21 extends toward the front of the box a greater degree than as shown in Figure 1, and the thrust block 22 carried by the bracket is positioned abreast of the journal collar 23 instead of being opposite to the bearing-engaging main surface of the journal. The block and the adjacent end of the angle are retained by a stud 24 which may be screwed into the block before it is applied to the bracket, and inserted through the wall from the inside. A washer 25 and a retaining cotter 26 are applied to hold the stud against removal. The other end of the angle is shown retained by a weld W'. If desired, the block support bracket may be cast integral with the journal box side wall. This would be appropriate on new boxes.

In each form of the invention, the bracket serves as a stop for upward movement of waste or lubricator pads due to the rotation of the journal, as well as to support the thrust blocks in functioning position.

The stops resist substantial lateral movement of the journal in the box, and are readily replaceable or shimmed if worn, so as to maintain the desired minimum clearance between the journal. When two or more blocks are present at one side of the journal, they may be individually replaced or shimmed. In applying blocks, each is drilled individually and readily, without requiring accurate spacing of holes along a block to assure their registering with the openings in the bracket and the box side wall.

Variations in the details of the structure may be made without departing from the spirit of the invention and the exclusive use of those modifications coming within the scope of the claims is contemplated.

What is claimed is:

1. In combination with a railway axle journal, a bearing on the journal and a journal box supported on the bearing and having upright side walls spaced from the journal, the journal having a collar at its outer end of greater diameter than the bearing-engaging portion of the journal, an angle bracket at each side of the journal with an upright leg at the level of the journal axis and applied to the adjacent inner wall of the box and having a horizontal leg projecting inwardly of the box from the corresponding wall, a thrust block of material softer than ferrous metal seated on each angle bracket horizontal leg adjacent to the end of the bearing-engaging portion of the journal nearest the journal collar, a second thrust block seated on each angle bracket horizontal leg near the end of the journal remote from the collar, the space between said bearing blocks exceeding the length of either of the blocks, said blocks opposing the sides of the journal, and individual elements extending through the box wall and threaded into the thrust blocks and securely retaining the angle bracket and thrust blocks on the wall.

2. In combination with a railway axle journal provided with a collar of greater diameter than the journal, a bearing thereon and a journal box supported upon the bearing and having upright side walls and a front opening beyond the outer end of the journal, an angle bracket, having an upright leg, applied to each side wall and extending lengthwise of the journal, a pair of thrust blocks spaced apart lengthwise of the journal and seated on the horizontal leg of each angle bracket, the space between said blocks being greater than the length of either block along the bracket, and individual screws extending through each box side wall and the corresponding bracket and threaded into respective blocks and securely holding the same to the

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box wall, said screws being individually removable from the outside of the box, and the corresponding thrust blocks being individually removable through the box front opening independently of each other.

3. A railway journal box thrust-transmitting device comprising an elongated angle bracket with one leg disposed horizontally and the other leg extending upwardly therefrom and a pair of blocks each having a length less than half the length of the bracket seated on said horizontal leg and formed of softer material than the bracket and spaced apart lengthwise of the journal and projecting laterally beyond the edge of said horizontal leg and adapted to transmit thrust between an axle journal and a journal box side wall to which the bracket is applied, and an angle and individual block retaining element detachably threaded into each block with a shank passing outwardly through the angle bracket upright leg and projecting therefrom for extension through a journal box wall and provided with a wall-engaging device on its outer end.

4. In combination with a railway axle journal, a bearing thereon, the journal having a collar at its outer end of greater diameter than the bearing-engaging portion of the journal, and a journal box mounted on the bearing

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having upright side walls spaced from the journal, an elongated angle bracket applied to the inner face of each box side wall and extending horizontally alongside the journal and forming a lubricant pad retainer, a pair of blocks mounted on each bracket at the level of the journal axis, each block having a length less than half the length of the journal and bracket, one block being near the journal collar and one block being near the end of the journal remote from the collar, and individual retaining means for each block extending through the corresponding box wall and the upright leg of the angle bracket and threaded into the block to hold it securely assembled with the bracket and to hold the bracket secured to the wall.

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