Dec. 12, 1944. W. BLACKMORE 2,365,042

OIL CONVEYING MEMBER FOR JOURNAL BOXES

Filed May 28, 1942

Fig. 2.

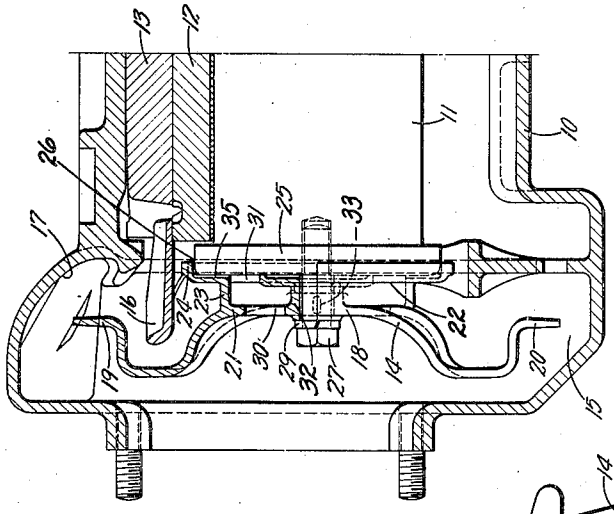


Fig. 3.

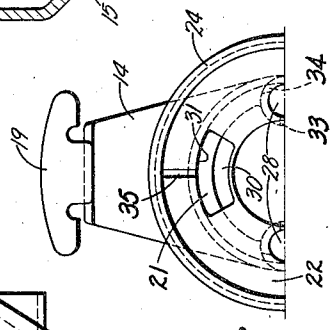
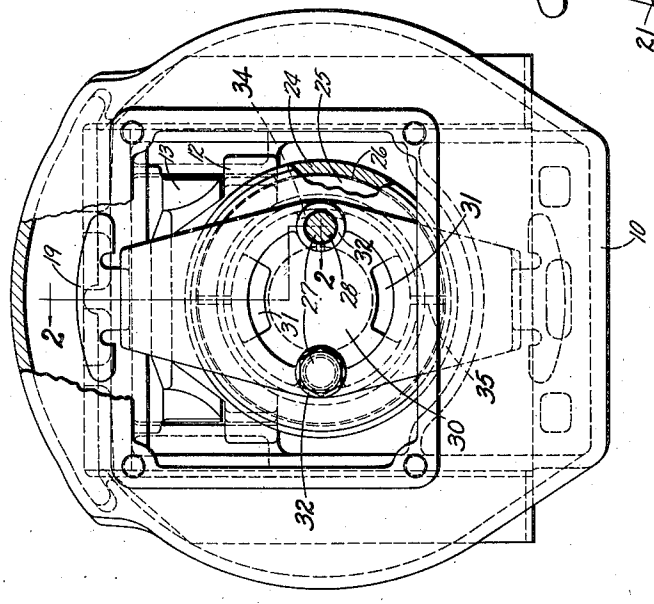


Fig. 1.



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OIL CONVEYING MEMBER FOR JOURNAL BOXES

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Application May 28, 1942, Serial No. 444,841

3 Claims. (Cl. 308—86)

This invention relates to journal boxes and more particularly pertains to means for mounting an oil conveying member on the end of the journal in such a manner that the shocks that are normally transmitted from the journal to the member are cushioned by a layer of oil between the member and the adjacent end of the journal upon which it is mounted.

When mounted on the end of the journal in the usual manner without provision for cushioning movement, shocks resulting from the wheel going over rail joints, crossings and the like and from wheel shell-outs and flat spots, are transmitted from the car wheel through the journal to the oil conveying member. As a result the member vibrates and in the course of time fails due to fatigue of the metal. This failure may partially or completely stop delivery of oil from the reservoir in the bottom of the box to points where it normally would be delivered to the bearing surfaces of the journal and bearing members and may ultimately result in a hot box.

While it is customary to secure the oil conveying member on the journal so that it is substantially immovable with respect to the journal, it has been found in practice that some movement always is present. I have found that by providing a layer of oil between the oil conveying member and the journal that it is possible to cushion this transverse movement of the member and substantially reduce the vibrations transmitted to the member.

In the accompanying drawing:

Figure 1 is an end view of a journal box embodying my invention, with certain parts cut away to disclose more clearly important features thereof.

Figure 2 is a longitudinal sectional view, the section through the oil conveying member being taken on line 2—2 of Figure 1; and

Figure 3 is a partial view of the inner side of the oil conveying member.

Referring to the drawing, the journal box 10 receives a journal 11 upon which is supported a bearing member 12. Between the bearing member and the top of the journal box is a wedge member 13. An oil conveying member 14 mounted on the front of the journal is adapted to dip into an oil reservoir 15 at the bottom of the box and carry oil to the upper part of the box where it either drops into a trough 16 or is thrown by centrifugal force onto the inner wall 17 of the box, where in either case it is conveyed through suitable passages to the contacting surfaces of the bearing member 12 and journal 11. The oil conveying member comprises a central portion 18 and radially extending arms 19 and 20 which are suitably shaped to carry oil from the reservoir to the upper part of the box, as has been previously described. The central portion 18 of the oil conveying member comprises a pair of spaced walls 21 and 22 joined by a cylindrical wall 23. Extending axially inwardly from wall 22 is a lip 24 that overlaps collar 25 on the end of the journal. The inner wall of lip 24 is normally spaced from the outer surface 26 of collar 25 so that the oil conveying member can move radially a limited amount with respect to the journal. Retaining bolts 27 pass through openings 28 in bosses 32 formed on portion 18 and these openings are slightly larger than the bolts so as to allow the aforesaid movement of the oil conveying member. Lock-washers 29 may be provided to prevent the bolts from loosening.

As the journal rotates during movement of the car an abundant supply of oil is deposited in trough 16 and this supply is not only sufficient to lubricate the bearing surfaces on the journal and bearing member but also flows over the collar of the journal and works its way into the space between lip 24 and surface 26 of the collar. Oil also is splashed through opening 30 in wall 21 and opening 31 in wall 22 and works its way between the inner face of wall 22 and the end face of collar 25 into the space between lip 24 and surface 26. Openings 33 and 34 in bosses 32 permit oil to flow into the spaces between the bolts and the bolt holes of the oil conveying member. This oil layer between lip 24 and surface 26 and between the bolts and the walls of the bolt holes is sufficient to cushion the shocks transmitted from the journal to the oil conveying member and materially reduces the vibration of the oil conveying member. This has resulted in a considerable increase in the life of the member before it fails from fatigue of the metal.

If desired, oil grooves 35 may be cut in the inner face of wall 22 to conduct oil from the central portion of the member to the pocket between lip 24 and the collar, but I have found that the ridges and hollows resulting from normal machining operations are usually sufficient to allow the oil to work out to the pocket.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that

various modifications are possible within the scope of the invention claimed.

What I claim is:

1. In a journal box, a journal extending therein, an oil reservoir, an oil conveying member on the end of said journal adapted to rotate therewith and convey oil from said reservoir to the upper portion of the box, said member having a central portion for mounting said member on the end of said journal, said portion comprising a flange extending into overlapping relation with the end of said journal and spaced therefrom to form a pocket adapted to receive oil from said member, said central portion being formed with hollow bosses, and means received by said bosses for securing said member to said journal and allowing transverse movement between said member and said journal, said bosses having openings therein for passing oil from said central portion around said securing means, said oil in said pocket and around said securing means being adapted to cushion said transverse movement of said member.

2. In a journal box, a journal extending therein, an oil reservoir, an oil conveying member on the end of said journal adapted to rotate therewith and convey oil from said reservoir to the upper portion of the box, said member having a central portion for mounting said member on the end of said journal, a flange on said portion extending into overlapping relation with the end of said journal and spaced therefrom to form a pocket adapted to receive oil from said member, said central portion having an opening extending therethrough and a channel in said central portion adjacent the end of said journal extending from said opening to said flange for conducting oil that is thrown into said opening to said pocket.

3. In a journal box, a journal member extending therein, an oil reservoir, an oil conveying member on the end of said journal member adapted to rotate therewith and convey oil from said reservoir to the upper portion of the box, said oil conveying member comprising a central portion adapted to engage the end of said journal member, a flange on one of said members extending into overlapping relation with the other of said members and forming an oil receiving pocket therewith, said central portion having an opening adapted to receive oil thrown by said oil conveying member, and a channel between said members extending from said opening to said pocket for conducting oil to said pocket.

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