

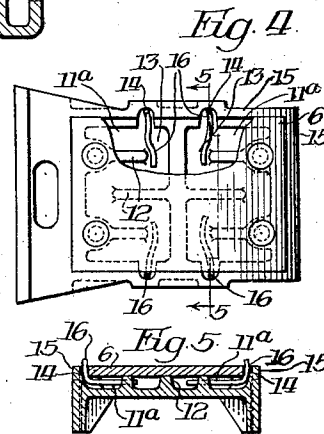
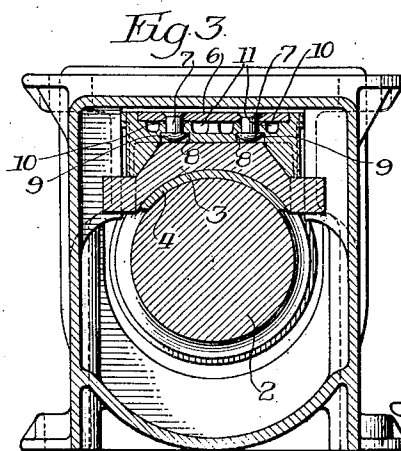
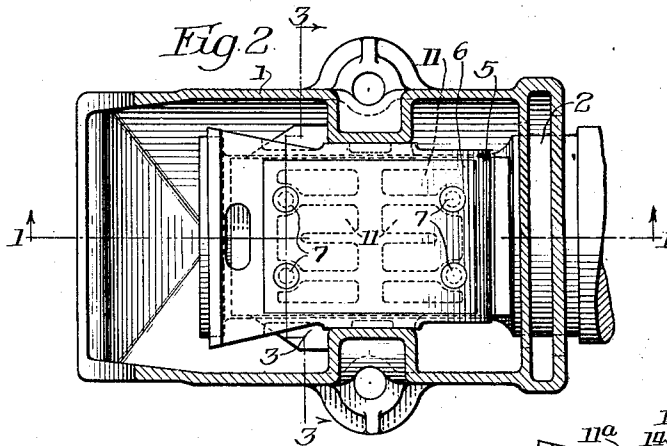
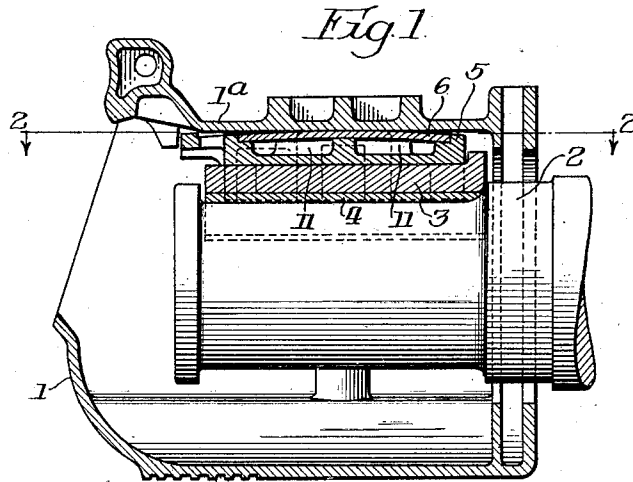
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T. K. CUMMINS

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JOURNAL BOX WEDGE

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UNITED STATES PATENT OFFICE

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JOURNAL-BOX WEDGE

Application filed March 8, 1928. Serial No. 259,935.

This invention relates to journal boxes for railway car axles, and particularly to the wedge member usually forming part of the journal box construction.

One of the objects of the invention is to provide a simple, practical and advantageous journal box and wedge member therefor.

Another object of the invention is to provide a wedge member construction which shall have a very long life and not be subject to the usual wear and necessary replacement of wedge members of this kind.

Another object of the invention is to secure the foregoing and other desirable results in a simple and expeditious manner.

Another object of the invention is to arrange for automatic lubrication of various parts of the journal box and associated elements.

In the accompanying drawings:

Fig. 1 is a longitudinal sectional view of a journal box embodying my invention and the end portion of a railway car axle therein, said section being taken on line 1—1 in Fig. 2;

Fig. 2 is a longitudinal section taken on line 2—2 in Fig. 1;

Fig. 3 is a cross section taken on line 3—3 in Fig. 2;

Fig. 4 is a plan view similar to Fig. 2 of a modified form of journal box wedge, the journal box itself and journal not being shown in Fig. 4; and

Fig. 5 is a cross section taken on line 5—5 in Fig. 4.

Referring first to Figs. 1 to 3 inclusive of the drawings, I show a journal box 1 which may be of the usual construction or design and a journal 2 therein. Also a brass 3 which may have a Babbitt metal lining 4 for the journal 2. A wedge 5 is shown between the brass 3 and the top 1^a of the journal box 1.

The wedge 5 is that portion of the device to which the invention more particularly relates. This wedge preferably has a malleable iron, steel or drop forged body portion and an upper wearing surface of a specially hard material such as high carbon or alloyed steel. While this arrangement may be provided in various ways, I show the wedge 5 provided with a top recess or chamber into

which is fitted a wear plate 6 which may be made of the specially hard material mentioned, such as high carbon or alloyed steel.

As a preferred arrangement this wear plate 6 is secured in position in its recess in a firm and secure manner but not in such manner as to prevent its removal and replacement by another plate. Preferably it is secured in position by rivets, such as rivets 7, of which several are used. These rivets pass through suitable apertures formed in the wear plate and also through apertures in the body portion of the wedge, which is below the plate 6, as shown in Fig. 3. Recesses 8 are preferably provided in the underside of the wedge to accommodate the rivet heads 9 and prevent their touching the journal brass 3. In this way the plate will be held firmly and securely in position but may be removed and replaced, if desired, by cutting off the rivet heads.

The rivet holes in the plate 6 are preferably countersunk, as shown in Fig. 3, and these rivet holes are preferably punched with dies with sufficient tolerance to allow the metal to be pressed through so as to project slightly on the underside of the plate, as shown at 10. Also the rivet holes in the body portion of the wedge are preferably countersunk so as to receive these projecting rims 10.

As a matter of further and specific improvement the upper portion of the body of the wedge forming the seat for the plate 6, is preferably recessed or chambered as at 11 so as to make the wedge lighter and less expensive.

The wedge preferably has a radius at the top to engage the inside surface of the journal box to provide a uniform bearing on the journal irrespective of irregularities in the railroad track, or other conditions, and this radius is preferably provided by heating and rolling the plate 6 so as to give it the proper radius by forming or casting the seat of the wedge on which the plate rests with a corresponding radius so that when the plate is applied, ample bearing will be provided for it throughout its length.

The tops of the heads of the rivets 7 are preferably flush with the top surface of the wearing plate 6.

In this way an effective journal box structure is formed, and the highly undesirable wear on the wedge, reducing the length of life of the same is avoided, thereby giving not only high efficiency in the device, but also effecting substantial savings.

In the modification shown in Figs. 4 and 5 of the drawings, the recessed or chambered portions in the upper or seat portion of the wedge 5 are made to serve as a receptacle for a lubricant, such as oil, and provision is made for conveying this lubricant to different parts or elements of the device so that friction and wear are reduced and the life of both the journal box and wedge is increased.

While this arrangement could be worked out in various ways, I show chambers or recesses 11^a quite similar or recesses 11 of the previously described form of device and these chambers or recesses 11^a are connected with one another on opposite sides of the wedge, as by shortening or cutting away portions of intervening ribs 12 so that passageways 13 are formed to connect the recesses 11^a. Thus oil chambers extending substantially from side to side of the wedge are provided.

For permitting the escape or withdrawal of lubricant such as oil from these chambers, I show side ducts or passages 14, conveniently formed by cutting away portions of the side walls or partitions 15 of the wedge 5 so as to form ducts or passages 14 extending under and beyond the side edges of the wear plate 6. If desired, wicks 16 of felt or other suitable material may be arranged in the oil wells or receptacles and extended out through the side passages 14 and these wicks will serve to withdraw oil by capillary attraction and so lubricate the top and sides of the journal box and wedge with the advantages above noted.

It will be understood that changes and modifications may be made without departing from the spirit of the invention.

What I claim is:

1. A journal box wedge provided with a recess in its upper portion and a wear plate fitted and secured in said recess, said wedge having its body portion forming the seat for said plate and being provided with other recesses.

2. A journal box wedge provided with a recess in its upper portion and a convex wear plate extending substantially the length of the wedge and fitted and secured in said recess, said wear plate being of especially hard material.

3. A journal box wedge provided with a recess in its upper portion and a wear plate fitted and secured in said recess, said wedge having its body portion forming the seat for said plate and being provided with other re-

cesses, said wear plate being of especially hard material.

4. A journal box wedge having an upper recess and a wear plate fitted in said recess and rivets fastened through the wear plate and wedge to hold the wear plate in position, said wear plate having countersunk apertures for the rivets and also having downwardly projecting rims on its underside and the wedge having countersunk apertures for said rivets and also having apertures for the rivet heads.

5. A journal box wedge composed of two parts, including a body member, said member having a top recess, a wear plate fitted and secured in said recess, the seating portion of the wedge being provided with other recesses.

6. A journal box wedge composed of two parts, including a body member, said member having a top recess, a wear plate fitted and secured in said recess, the seating portion of the wedge being provided with other recesses, the wear plate being of especially hard material.

7. A journal box wedge composed of two parts, including a body member, said member having a top recess, a wear plate fitted and secured in said recess, the seating portion of the wedge being provided with recesses, the body portion of the wedge being made of malleable iron or steel and the wear plate being made of high carbon or alloyed steel.

8. A journal box wedge having its upper portion provided with a wear plate and having one or more recesses or chambers below said wear plate forming a lubricating chamber and also having ducts extending from the sides of said chamber under the wear plate and upwardly to the side of the same.

9. A journal box wedge having a hollowed-out portion having a lubricant chamber, a cover member removably secured on the upper side of the chamber, said cover constituting the upper contacting surface of the wedge.

10. A journal box wedge comprising a body portion, a lubricant reservoir formed therein, a cover for the reservoir removably secured in position, said cover also constituting a renewable wear-plate cooperable with the body portion for completing the wedge.

In witness whereof, I hereunto subscribe my name this 17th day of Feb'y, A. D., 1928.

THOMAS K. CUMMINS.