J. M. LASSMANN.

AXLE BOX.

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1,179,846. Patented Apr. 18, 1916.

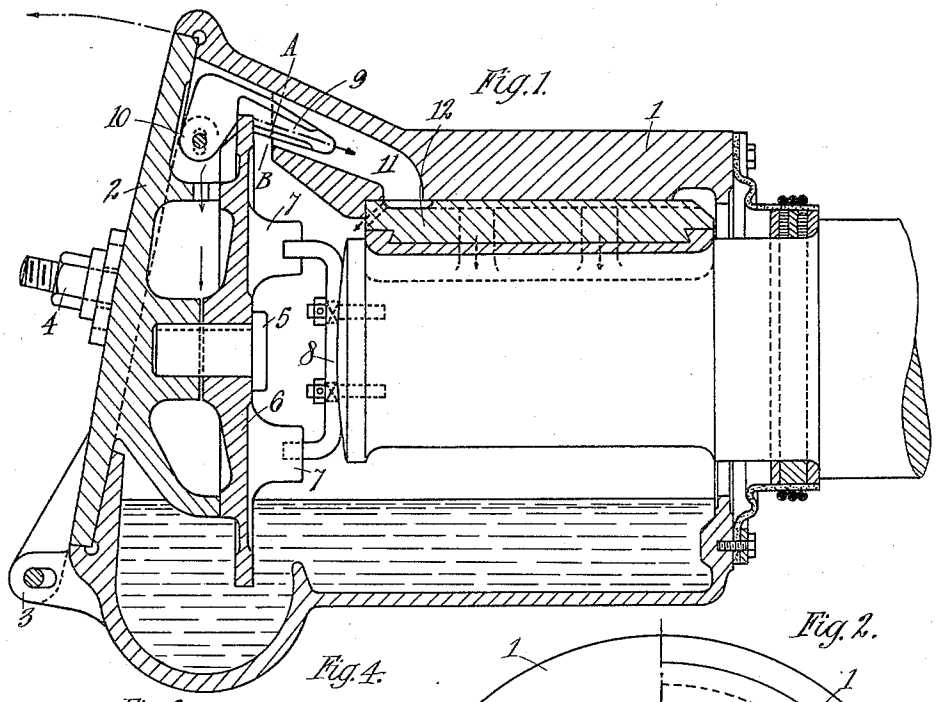


Fig. 1.

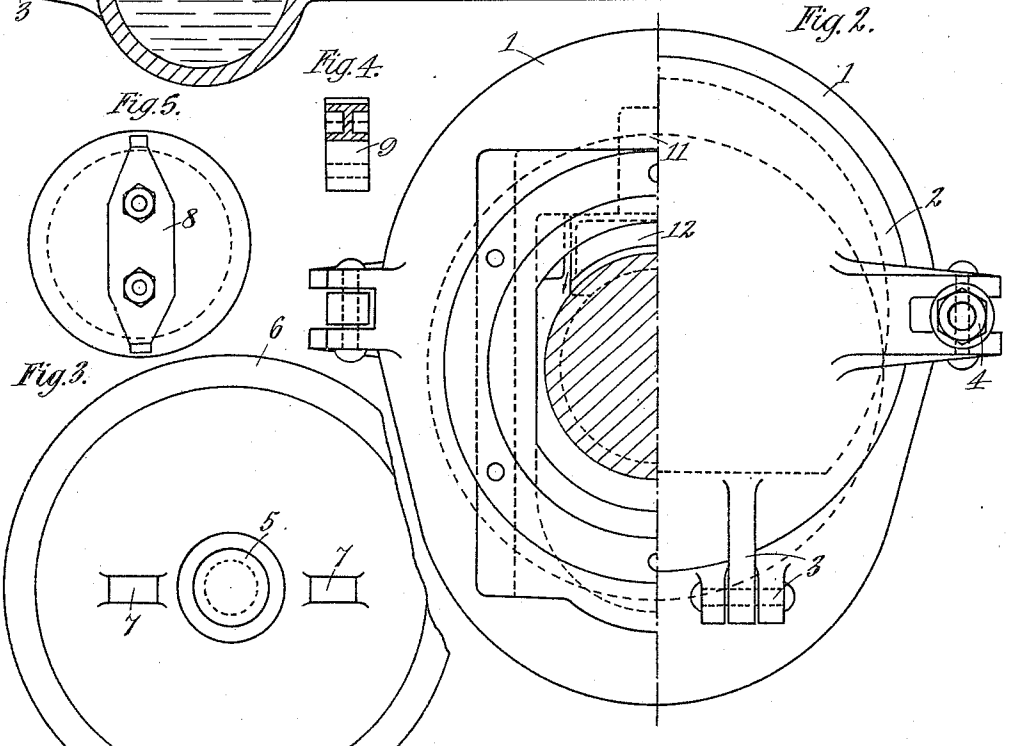


Fig. 2.

Fig. 4.

Fig. 5.

Fig. 3.

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AXLE-BOX.

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To all whom it may concern:

Be it known that I, JOHANN MARTIN LASSMANN, a subject of the Emperor of Russia, and a resident of Petrograd, Russia, have invented new and useful Improvements in Axle-Boxes, of which the following is a specification.

One of the most important parts of railway and tramway rolling stock, upon which the even running of the vehicles depends to a great extent, is undoubtedly the axle box. Any irregularity in the supply of lubricating oil to the journal will cause heating, which eventually burns and damages the brasses, this in turn makes it necessary to withdraw the particular car affected from service in order to rebush the burnt-out bearing. Great importance therefore is attached to the efficiency of the axle boxes and all the bearing surfaces are examined before being assembled and the various parts of the box carefully measured. No matter how carefully the axle boxes and bearings are assembled, it is never possible to insure against heating of the journals. This is due to the fact that the method of introducing oil into the bearing is imperfect.

In known types of axle boxes, the oil is usually supplied through the medium of wool or cotton. In practice it is found that the yarn or thread tends to creep into the bearing and when this happens may not only cause the burning out of the bearing bushes but also melting of the latter. Moreover, oil escapes readily through the closures, and dust, sand and rain water penetrate into the box.

It appears from the aforesaid that an ideal axle box must comprise the following features:—1. A continuous automatic supply of oil in which wool or cotton, sponges, horse hair or saw-dust, are dispensed with, and in which frequent inspection is unnecessary. 2. The possibility of rapidly dismantling the bearing for the purpose of inspecting the same and the brasses. 3. A lengthy operation of the axle-boxes without necessitating inspection and additions of oil.

Axle-boxes in which oil is supplied by means of a plate are known but they have proved to be useless in practice as the supply plate was mounted on the journaled portion of the shaft. As heating of the bearing is produced not only by an insufficient supply of oil to the journal but also through bad fitting up of the bearing or deficient provision of Babbitt metal, the shaft upon which the plate is mounted is also heated and in this manner prevents and renders practically impossible the rapid removal of the bearing for the purpose of examining and rebushing it.

According to the present invention, the aforesaid very serious drawbacks associated with known types of axle boxes provided with plates, are completely eliminated by mounting the oil supplying plate not on the shaft but on the front cover of the axle box so that on removing the said cover, the bearing and the journal are freely accessible for inspection.

The accompanying drawing illustrates a construction of the novel axle box, in which:

Figure 1 is a longitudinal section. Fig. 2 shows on the left a rear view of the box and on the right a front view of same. Fig. 3 is a detail view of the plate. Fig. 4 is a section of the scraper on line A—B of Fig. 1. Fig. 5 shows a clamp mounted on the front portion of the axle, which serves to rotate the plate.

The axle-box consists of a main box 1 provided with a cover 2 mounted thereon by means of hinges 3 and secured by pivoted bolts or the like 4. Upon a small shaft 5 mounted on the inside of the cover 2, a rotatable plate 6 is mounted, the lower portion of which always dips in oil which is introduced in sufficient quantities into the lower portion of the box through an aperture formed in the cover of the box. The said plate 6 is formed with bosses or the like 7. A clamp or the like 8 fixed by means of screws or the like to the front portion of the journal, engages, when the latter rotates, the bosses 7 of the said plate and produces its rotation, the oil adhering to the plate being carried to the top where it is guided into a conduit 11 in the upper part of the axle box by means of a scraper 9 bearing on the aforesaid plate and secured to the axle box cover 2 by means of hinges 10; the oil then reaching the bearing 12 and lubricating same.

Owing to the hereinbefore described method of securing the plate 6 and the scraper 9 to the cover 2 of the box, it is possible, should such necessity arise to remove the bearing readily and rapidly.

I claim:—

1. The combination with a vehicle axle journaled in bearings within an axle box

having a well in the lower part of the said box containing a lubricating medium of a pivoted lid having on its inner face a central boss and an annular flange surrounding said central boss, a circular lubricating plate, located with the said axle box on the face adjacent the interior of the axle box lid, with a central boss and a surrounding annular flange, a pivotal connection between said plate and said axle box lid, and means for rotating the said lubricating plate.

2. A driving connection for vehicle axle boxes having an oil well in the lower part and a circular oil supply plate pivotally mounted upon the interior of the axle box lid, comprising a pair of bosses located at diametrically opposite points on the face of the oil supply plate adjacent the axle and a U-shaped member detachably secured to the said axle, each of the arms of the said U-shaped member engaging one of the bosses on the oil supply plate, substantially as and for the purposes set forth.

3. The combination with a vehicle axle journaled in bearings within an axle box having a well in its lower part containing a lubricating medium, of an oil supply plate dipping into the oil well with its lower part and rotatably mounted on the inside of the axle box lid, of means carried by the said axle for engaging the oil supply plate, and of a scraper also connected to the inside of the axle box lid for guiding oil from the oil supply plate into the bearings for the axle.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JOHANN MARTIN LASSMANN.

Witnesses:

ALEXANDER TSCHEXALAFF,

O. D. STURK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."