H. C. GAMAGE.

LUBRICATING DEVICE FOR CAR AXLE BOXES.

APPLICATION FILED OCT. 5, 1908.

931,053. Patented Aug. 17, 1909.

Fig: 1

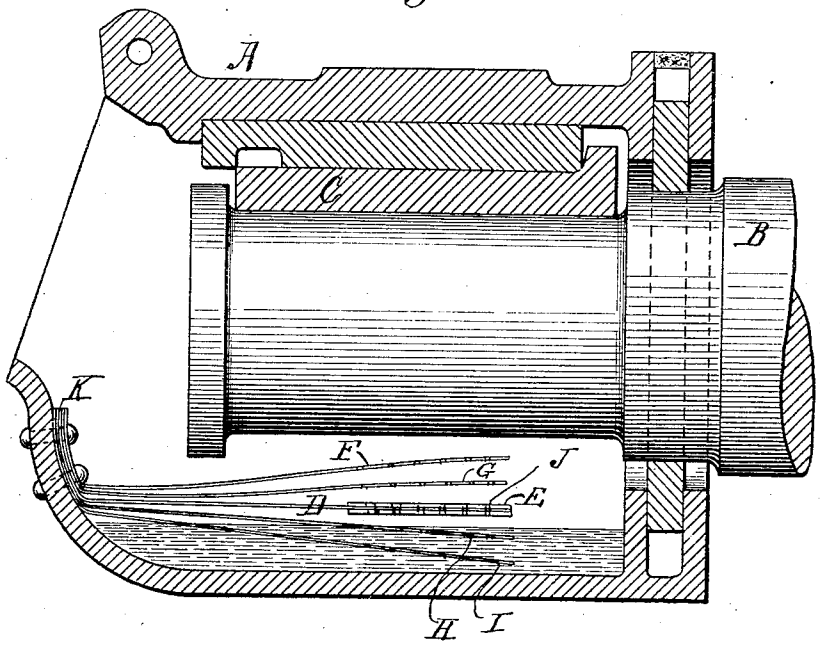
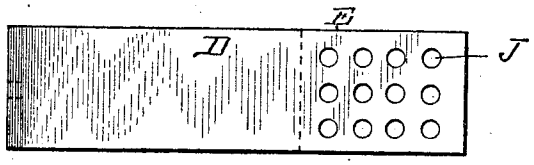


Fig: 2



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UNITED STATES PATENT OFFICE.

HARRY C. GAMAGE, OF NEW YORK, N. Y.

LUBRICATING DEVICE FOR CAR-AXLE BOXES.

No. 931,053. Specification of Letters Patent. Patented Aug. 17, 1909.

Application filed October 5, 1908. Serial No. 456,169.

To all whom it may concern:

Be it known that I, HARRY C. GAMAGE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Lubricating Devices for Car-Axle Boxes, of which the following is a specification.

The invention relates to lubricating devices for car axles, and has for its object to simplify and cheapen the construction.

The invention consists in the combination with the car axle box, and the axle journal of a resilient arm in said box, extending below the axle journal; the said arm being constructed and arranged to be set in up and down vibration independently of the rotation of the axle, and solely by the up and down movement of the box while the vehicle is in motion, to cause transference of the liquid lubricant, held in the bottom of the box, to the axle journal.

In U. S. Letters Patent No. 900,922 granted to me October 13, 1908, I have shown and described an arm actuated by gearing from the rotating axle for carrying lubricant to the axle journal, but obviously, in such case, the arm is not operated independently of the rotating axle. In my present device, all gearing for actuating the arm is entirely obviated, and the whole mechanism is reduced to simply the resilient arm or arms which are actuated by the up and down movement of the axle box as the vehicle passes over the usual inequalities of the track.

In the accompanying drawings Figure 1 shows a car axle box in longitudinal section with the axle journal and my lubricating device in place therein. Fig. 2 is a top view of one of the vibrating resilient arms, showing the openings disposed near the free end of said arm.

Similar letters of reference indicate like parts.

A is the axle box, B, the axle journal and C, the bearing, all constructed in the usual manner.

D is a resilient arm having its turned up end K bolted to a wall of the axle box, extending under the journal B, and carrying, preferably at its free end, a weighted portion E, which serves, by its inertia, to increase the amplitude of vibration of said arm. Above and below the arm D are similarly secured other resilient arms F, G, H, I, preferably not provided with weighted portions, two of said arms here being shown below, and two above the arm D. In all of the arms and preferably near their free ends are made openings J, here represented as circular perforations, but which may be slots, recesses or indentations of any desired shape, for permitting the liquid lubricant to pass through them, as hereinafter described. In the bottom of the axle box is placed a quantity of liquid lubricant into which the weighted arm D enters on its down vibration.

The operation of the device is as follows: The arms, and especially the weighted arm D, are set in up and down vibration by the up and down motion of the box, transmitted thereto from the axle as the car travels over inequalities, such as uneven rail ends, worn rails, switches, frogs, crossings or the like, in the track. In so vibrating, the arms which enter the liquid lubricant carry the same upward, and during this operation, the openings J perform certain special functions. If they were not present, the liquid between the arms would be ejected laterally and hence, not be properly directed upon the under side of the journal. But, by reason of their presence, and the contacting of the arms, said liquid becomes forced upwardly through said openings, and finally reaches the under side of the journal in the form of a shower or spray. An additional function of the openings in the arms which enter the liquid, is to permit said arms to become submerged without displacing or dashing the liquid side-wise in the box—a result likely to happen when the car is running at high speed, and the arms, in consequence, vibrating rapidly.

The resilient arms H, I below the arm D, serve to cushion said arm when moving down, and the arms F, G perform the same function when the arm D is moving up, and in this way, the violent impact and consequent wear and noise, due to said arms forcibly contacting with the bottom of the box or the journal, are prevented.

I claim:

1. In a car axle lubricator, in combination with the axle box and axle journal, a resilient arm in said box extending below the axle journal; the said arm being constructed to be set in up and down vibration independently of the rotation of the axle, and solely by the up and down movement of the box while the vehicle is in motion, to carry

on its upper surface liquid lubricant from said box directly to said journal.

2. In a car axle lubricator, in combination with the axle box and axle journal, a resilient arm in said box extending below the axle journal, and a spring for cushioning said arm interposed between said arm and said box.

3. In a car axle lubricator, in combination with the axle box and axle journal, a plurality of resilient arms having openings for the passage of liquid lubricant disposed in said box and extending below the axle journal: the said arms being constructed to be set in up and down vibration independently of the rotation of the axle, and solely by the up and down movement of the box while the vehicle is in motion, to cause transference of liquid lubricant from said box to said journal.

4. In a car axle lubricator, in combination with the axle box and axle journal, a weighted resilient arm and resilient arms disposed in said box above and below said weighted arm: the said arms having openings for the passage of liquid lubricant and extending below said axle journal, and constructed to be set in up and down vibration independently of the rotation of the axle, and solely by the up and down movement of the box while the vehicle is in motion, to cause transference of liquid lubricant from said box to said journal.

In testimony whereof I have affixed my signature in presence of two witnesses.

HARRY C. GAMAGE.

Witnesses:

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