R. MACDONALD.

CAR-AXLE LUBRICATOR.

No. 186,354. Patented Jan. 16, 1877.

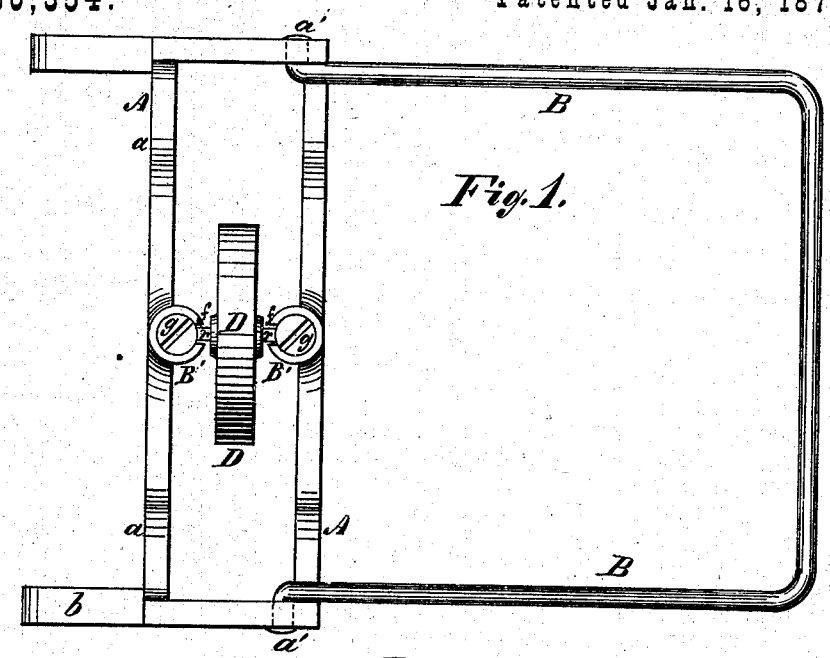


Fig. 1.

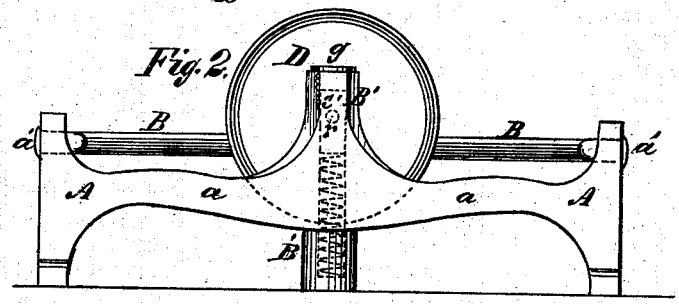


Fig. 2.

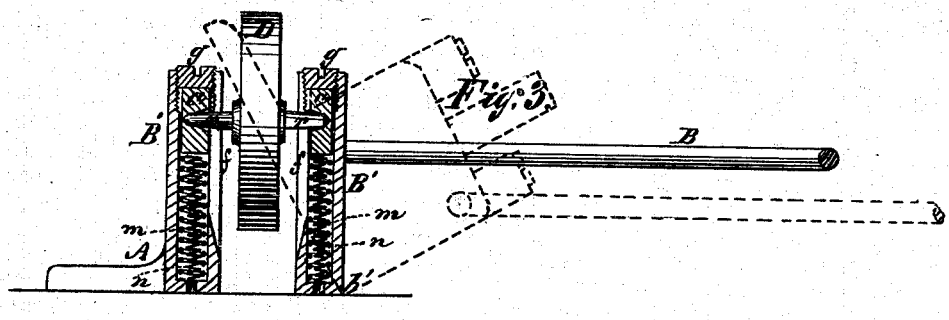
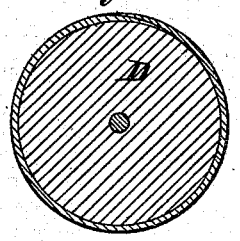


Fig. 3.

Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

RANALD MACDONALD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CAR-AXLE LUBRICATORS.

Specification forming part of Letters Patent No. **186,354**, dated January 16, 1877; application filed April 3, 1876.

To all whom it may concern:

Be it known that I, RANALD MACDONALD, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Lubricators for Car-Axles, of which the following is a specification:

This invention relates to that class of lubricators for car-axles in which a feed wheel or disk rotates with its lower edge or portion immersed in lubricating liquid, and its upper edge rolling in contact with the axle or journal to be lubricated, the lubricating material adhering to the wheel at its lower part being carried up and distributed to the aforesaid journal or axle.

The object of this invention is to provide a lubricator of the class mentioned which shall not only be perfect and effective in the feeding or transfer of the lubricating material to the axle, but which shall also be capable of ready insertion and arrangement in position within the ordinary axle-box without change of the latter; a cheap, simple, and effective lubricator being provided, which may be readily applied to, and used in connection with, the axles and axle-boxes of cars now in use.

The invention consists in a supporting-frame constructed with slotted tubular standards and supporting spurs or arms, and provided with an adjusting-bail, in combination with spiral springs arranged within the aforesaid standards, a feeding wheel or disk, and sliding bearings, receiving the pivot of the aforesaid disk, and resting upon the spiral springs just mentioned; the whole constructed and arranged in such manner that the frame may be readily manipulated and pushed to its place within the extremities, to bring the feeding wheel or disk in the required relation with the journal or axle, when the wheel or disk, being thus brought into position, will be pressed snugly up with an elastic pressure in contact with the axle or journal, to insure the deposition upon said axle or journal of the lubricating material carried upward by the wheel, without liability of disarrangement from the jarring or concussion of the journal or axle, or of the axle-box, from the rapid motion of the train.

Figure 1 is a plan view. Fig. 2 is a side view of a car-axle lubricator made according to my invention. Fig. 3 is a longitudinal sectional view of the same, taken in a plane at right angles to Fig. 2. Fig. 4 is a detached view, showing a modification in the structure of the feeding wheel or disk.

A is the frame, preferably of rectangular form, except that at its near or inner side *a* it is provided with one or more horizontally-projecting supporting spurs or arms, *b*, to give it a broader base and make it more stable in its upright position. B is the operating-bail, the shape of which is more plainly shown in Fig. 1, the inner end of which is pivoted, as shown at *a'*, to the ends of the frame A. It will be noticed that the bail B being pivoted to the frame A, as just mentioned, the latter can be turned, upon its edge *b'*, into the position shown in dotted outline in Fig. 3, or, in other words, into a position more or less approaching right angles to its usual or normal one. At each of the opposite sides of the frame A is a vertical tubular standard, B', vertically slotted at its inner side, as shown at *f*, and closed at the top by a screw-plug, *g*. In each of the vertical standards B' is placed one or more spiral springs, preferably one spring, *n*, placed within a larger one, *m*, in order that combined strength and sensitiveness in said springs may be secured. Upon each of the springs is placed a sliding block or bearing, C', in the side of which is formed a socket, which receives the end of the pivot *r* of the feeding wheel or disk D.

It will be observed that as the feeding wheel or disk D is journaled in the blocks or bearings C', which are capable of vertical movement in the tubular standards B' and rest upon the spring *m n*, the aforesaid feeding wheel or disk is capable of an elastic vertical movement, so that when it is brought underneath and up against the axle to be lubricated the said feeding wheel or disk will be pressed snugly and continuously in contact with said axle or journal, the rotation of the axle or journal insuring the rotation of the feeding wheel or disk, and this motion of the said feeding wheel or disk carrying the lubricating material from the lower part of the journal-box (where in this class of lubricating apparatus said lubricating material is ordinarily placed) up to the axle or journal, and depositing it thereon,

thereby continuously lubricating said axle or journal so long as the same continues to rotate. The sliding bearings being capable of moving independently of each other insures the perfect contact of the circumference of the feeding wheel or disk with the surface of the axle or journal across the entire width of said circumference of the feeding wheel or disk, while the constant and continuous pressure exerted by the springs not only insures such contact of the disk with the axle or journal to be lubricated as will insure the transfer of the lubricating material to the latter, but also such pressure as will insure the continuous rotation of the disk from its contact with the axle or journal when the same is in motion, despite any jarring or concussion, which otherwise would tend to bring the disk temporarily out of contact with the axle or journal. Moreover, the frame A, with the disk and other adjuncts thereof, being capable of being turned on the edge *b'*, as represented in dotted outline in Fig. 3, the said frame, with the disk or wheel attached thereto, may be turned down so as to be thrust under the axle or journal until it is brought to the part thereof at which the lubricating material is to be applied, which done, by a simple manipulation of the bail B, the frame A and its adjuncts may be brought to its normal or vertical position, bringing the disk or wheel D into elastic contact with the axle or journal, to insure the lubrication of the same, as hereinbefore set forth.

It is to be expressly understood that when the frame A and the parts carried thereby are brought into position with the disk or wheel D, in contact with the axle or journal, as hereinbefore explained, the ends of the spurs or arms *b* will press against the inner end of the journal-box, while (the parts being duly proportioned) the bail will be pressed downward, with its outer end bearing against the outer end of the box, the lubricating apparatus being thus firmly pressed between the two ends of the box, and thereby held against any longitudinal movement of displacement, while the pressure of the disk or wheel against the axle is sufficient to keep it from vertical displacement.

The feeding disk or wheel D may be made either of wood or metal, and is provided with an external covering or band of leather, permeated or saturated with glue, and firmly fixed to the said wheel, the peculiar surface thereby given to the circumference of the disk or wheel D having greater adhesion for the lubricating material than the smooth metal, and consequently carrying a larger supply to the axle or journal to be lubricated, this increased adhesiveness also insuring a more perfect rotation of said disk or wheel from the rotation of the axle or journal with which it is in contact. The manner in which this band is applied to the disk or wheel D is illustrated in Fig. 4.

What I claim as my invention is—

The supporting-frame A, constructed with the solid tubular standards B′ and supporting spurs or arms *b*, provided with the adjusting-bail B, in combination with the spiral springs arranged within the standards B′, the feeding wheel or disk D, and the sliding blocks or bearings C′, supporting the ends of the pivot *r* of the disk D, and resting upon the spiral springs, the whole constructed, combined, and arranged for use and operation substantially as and for the purpose herein set forth.

RANALD MACDONALD.

Witnesses:

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