R. R. MOORE.

Vehicle Axle-Lubricator.

No. 207,195. Patented Aug. 20, 1878.

Fig. 1.

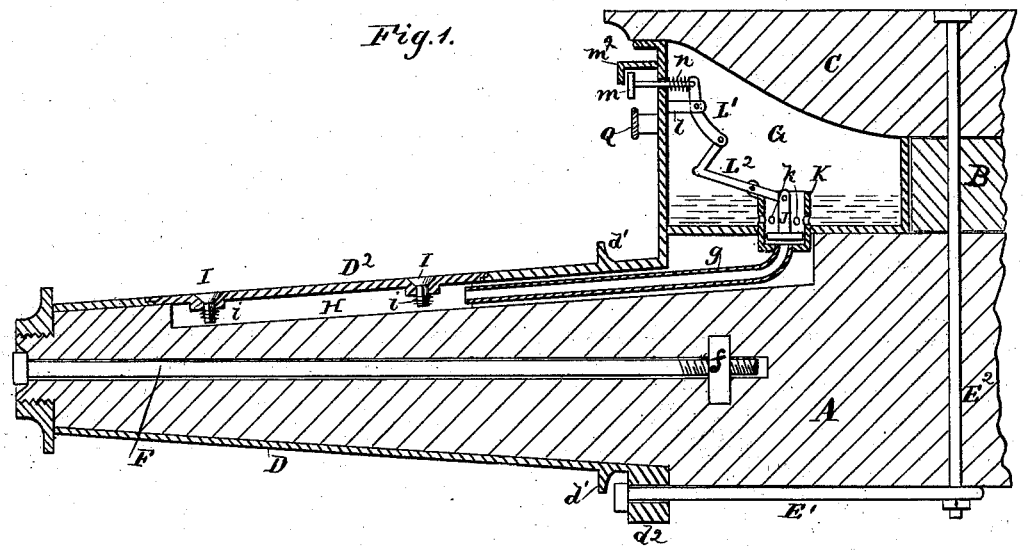
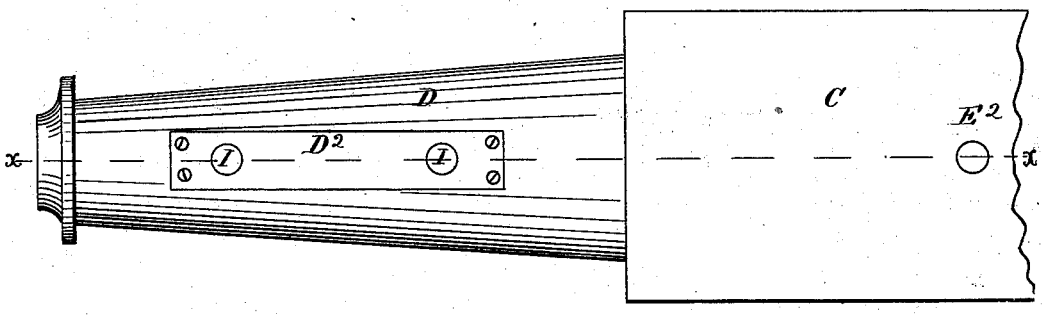


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT R. MOORE, OF LEWISVILLE, ARKANSAS.

IMPROVEMENT IN VEHICLE-AXLE LUBRICATORS.

Specification forming part of Letters Patent No. **207,195**, dated August 20, 1878; application filed May 11, 1878.

To all whom it may concern:

Be it known that I, ROBERT R. MOORE, of Lewisville, in the county of La Fayette and State of Arkansas, have invented new and useful Improvements in Axles, of which the following is a specification:

My invention relates particularly to means for lubricating the axles of vehicles; and it consists in certain novel details of construction, arrangement, and combination of a thimble-skein, an oil-reservoir, and devices employed in connection therewith, whereby provision is made for attaching and removing them, for holding them securely when in place, and for insuring the proper working of the parts, as hereinafter particularly described and set forth.

The manner of carrying out my invention is illustrated in the accompanying drawing, in which—

Figure 1 is a longitudinal vertical section of a portion of an axle embodying my improvements; and Fig. 2, a top view of the same.

Similar letters of reference indicate corresponding parts.

The axle A, hounds B, and bolster C may be of any suitable description. The thimble-skein D is provided with a flange or shoulder, d^1, for the bearing of the inner end of the hub of the wheel, and with a perforated lug, d^2, for holding it in place by means of bolts E^1 E^2.

The bolt E^1 has a head at one end and an eye at the other, and the bolt E^2 has a head at one end and a screw-thread at the other. The bolt E^1 is passed through the lug d^2 in a horizontal direction until its head bears against the lug, and the bolt E^2 is passed downward through the bolster, hounds, and axle, with its head bearing against the top of the bolster and its lower end engaged with the eye of the bolt E^1, where it is secured by a nut, and by this means the skein is held securely in place.

A bolt, F, extends horizontally in the center of the axle for a distance equal to or greater than the length of the skein, with its head bearing against the outer end of the axle and its inner end secured by a nut, *f*, inserted in a mortise provided in the axle. This bolt adds greatly to the strength of the axle when the latter is made of wood.

The upper portion of the inner end of the skein is provided with an oil-reservoir, which may be cast in one piece with the skein or attached separately, as may be preferred. This oil-reservoir G is here represented as fitting in the space between the axle A and bolster C. It communicates, by means of a tube, *g*, with an oil-chamber, consisting of a recess, H, formed in the upper surface of the journal of the axle.

In the skein D, immediately over a portion of this oil-chamber, is an opening, provided with a cap or cover, D^2, which is made to fit closely, so as to be oil-tight, and is held in place by screws, so that it may be removed when desired. The cap D^2 carries two puppet-valves, I I, which are held snugly in their seats by springs *i i* coiled around their stems.

The upper end of the tube *g* connects with the reservoir G through a perforated cylinder, K, which serves as the valve-seat for a valve, J, of a piston-like form, working in said cylinder or seat, like a pump piston or plunger. The valve J has an upwardly-extending stem, *j*, which is pivoted to an elbow-lever, L^2, having its fulcrum or bearing in the upper part of the cylinder K. The long arm of the lever L^2 is pivoted to the short arm of a lever, L^1, having its fulcrum in an arm, *l*, projecting from the side of the reservoir.

The long arm of the lever L^1 is connected to the inner end of a rod or pin, *m*, which protrudes through the reservoir to the exterior thereof, and is provided with a head or thumb-piece, m^1, which, with the protruding portion of the rod or pin, is covered with a semi-tubular cap, m^2, attached to the reservoir. Surrounding the inner portion of the rod or pin *m* is a coiled spring, *n*, which is stronger than the combined strength of the two springs *i i*, surrounding the stems of the valves I I.

The reservoir is supplied with oil through a screw-cap, Q, of any suitable description.

When it is desired to supply oil to the axle-journal, the rod or pin *m* is moved inward by pressing on the thumb-piece m^1, so as to operate the levers L^1 L^2 and raise the piston-valve J above the perforations *k*, to allow oil to flow through said perforations into the cylinder K and through the tube *g* to the oil-chamber or recess H. The button is then released, whereupon the action of the spring

n immediately returns the parts to the former position. As the spring *n* is stronger than the combined strength of the two springs *i i*, and as the valve J fits the cylinder *k* with piston-like nicety, the effect of the action of the spring *n* is to force the valves I I upward from their seats, so as to allow oil to flow to the bearing-surfaces of the skein and axle-box, and thoroughly lubricate them. When sufficient oil has escaped, the springs *i i* return the valves I I to their seats. These valves are so arranged in their seats as to rise only sufficiently high to allow the oil to escape, but not high enough to obstruct the proper working of the bearing-surfaces or to collect and become clogged by any gummed oil which may have collected on said surfaces.

This lubricating device may be slightly modified, so as to adapt it to iron-axles of suitable construction, as follows: the oil-reservoir to be cast with a hinged lid, and fitted on the iron axle in the same position as the thimble-skein, and the iron axle to have a tube leading from the reservoir to the oil-chamber, formed in the upper surface of the journal, which has the valves, &c., as the thimble-skein.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The recess or oil-chamber H, formed in the upper surface of the axle-journal, in combination with the skein D, cap or cover D^2, and valves I I, substantially as and for the purpose shown and described.

2. The tube *g* and cylinder K, in combination with the oil-reservoir G and oil-chamber H, substantially as and for the purpose shown and described.

3. The combination of the cylinder K, having the perforations *k*, the piston or valve J, working in said perforated cylinder or valve-seat, the connecting-tube *g*, the oil-chamber H, and the valves I I, substantially as and for the purpose shown and described.

4. The combination of the rod or pin *m* and its spring *n*, the levers L^1 L^2, piston or valve J, cylinder K, tube *g*, oil-chamber H, and valves I I and their springs *i i*, substantially as and for the purpose herein shown and described.

ROBERT REA MOORE.

Witnesses:
ALEX. BYRNE,
J. B. YOUNG.