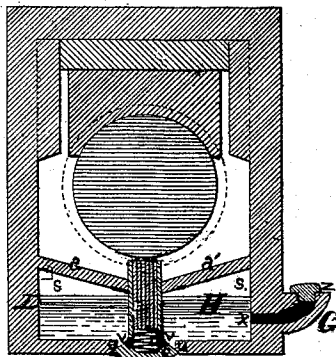
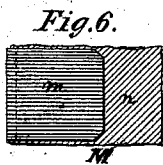
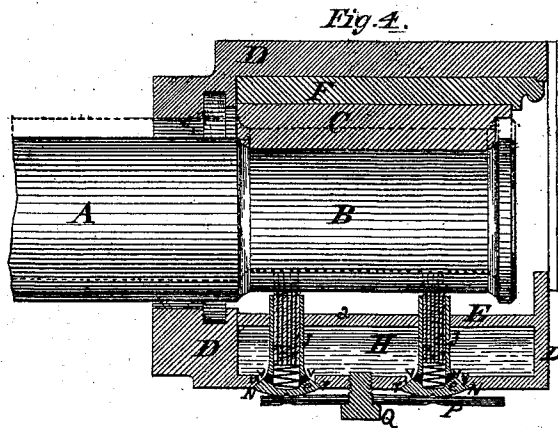
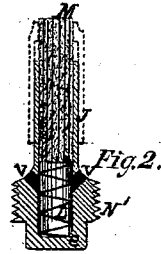
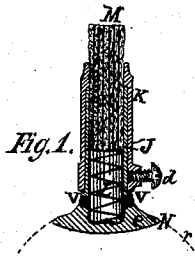


W. B. HOWE.
Car-Axle Boxes.

No. 143,763.

Patented Oct. 21, 1873.



WITNESSES.

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IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. 143,763, dated October 21, 1873; application filed August 1, 1873.

To all whom it may concern:

Be it known that I, WILLIAM B. HOWE, of the city of Troy, county of Rensselaer, State of New York, have invented certain new and useful Improvements in Lubricators for Railroad-Car Axles; and I do hereby declare that the following is a description thereof, reference being had to the accompanying drawings forming a part of this specification, in which—

Figure 1 represents a sectional elevation of the invention. Fig. 2 is the same modified. Fig. 3 is a horizontal cross-section. Fig. 4 is a sectional elevation of the axle-housing, journal of axle, and reservoir with this invention applied. Fig. 5 is a cross-sectional view of the same, taken at line 1 in Fig. 4. Fig. 6 illustrates the wick used, and forming a part of this invention, before its being rolled up. Fig. 7 illustrates the same in the operation of being rolled or formed.

My invention relates to a lubricator capable of being applied to the journal of a car-axle through an oil-box made in or with the usual housing of the journal from its lower and bottom side, which I will proceed to describe in reference to the drawings and the letters of reference marked thereon, the same letters indicating like parts.

In the drawings, A represents the axle of a car-wheel. B is the journal. C is the bearing-box. D is the usual housing, held in the usual jaws. (Not shown.) E is the oil-box. F is the usual spreading-plate, placed between the top of the housing D and the bearing-box C, to facilitate the placing of the several parts in position, and locking the box in its place. The oil-box E is made solid with the housing D, preferably, though it may be made detachable, and secured within the said housing from beneath in a firm and fixed manner. The top shell *a a'* is made with two inclines, commencing with the sides of the box, and gently sloping down and running into each other solid and continuous, as shown in Figs. 4 and 5. A reservoir, G, is made at some side of the box E, with its mouth *z* on the same plane with the lowest and central angle of the top shell *a a'*, as shown in Fig. 5, and with a discharge-port, *x*, communicating with the oil-chamber H, in such a manner that,

when the oil is poured into it, it will fill into the oil-chamber H until it rises up to the central intersection of the inclines *a a'*, constituting the top shell, and top of the mouth *z* of the cup G, when it will overflow, and the air-spaces *s s* will be preserved at the highest angles of the oil-chamber above the oil.

The lubricator used with the above-described oil-box consists in a wick-tube, J, Figs. 1, 2, 3, 4, and 5, made with a closed bottom, *e*, as shown in Figs. 1 and 2, and with a series of ports, *v v*, made at its base, through which the oil from the oil-chamber will pass into the tube. A second extension-tube, K, fitting over the tube J, and provided with a set-screw, *d*, for adjustment, is also provided, which extension-tube can be set up to any desired height, as may be required by the wear of the box C, which box, in its wear, will naturally permit the journal B to retreat from the oil-box below, and the upper end of the wick-tube J, in which case the extension-tube K is to be elevated, and secured in position with the said wick-tube, which will be vertically lengthened thereby. In the base of the tube J is placed the spring L, which is to serve as an elastic support to the wick M, which wick is to transfer oil from the base of the tube to the journal.

The wick used in this invention I denominate the metallic-fabric volute wick, consisting of a strip of thin sheet metal, *m*, and sheet fabric, *n*, Figs. 6 and 7, coiled around the central end *o*, so as to form a cylindrical wick, as shown in Fig. 3, with a diameter equal to, or slightly less than, the diameter of the wick-tube J K. The said wick is inserted into the wick-tube with its lower end resting on the spiral spring L, as shown, which spring maintains the wick in contact with the journal.

For the application and tight attachment of this lubricator with the oil-box, I make with the tube J a ball-base, N, Fig. 1, or a screw-threaded base, N', Fig. 2. If I use the former I perforate the bottom of the cup E directly beneath the axial line of the journal in two places, as shown in Fig. 4, and make a socket form of countersink, *r*, on the lower side of the said perforation *u*, corresponding with the ball-base N of the tube, when the said wick-tube can be inserted from beneath the oil-box, and

pass up through the top of the same, as shown, and be secured in place by means of the spring button-bar *p*, binding the ball-bases in their sockets tight through the medium of the central screw *Q*; and by slight projections made on the upper bearing-surfaces of the said button-bar, to engage with slight depressions made on the end of the ball-base beneath, as in Figs. 4 and 5, the button-bar will be prevented from being displaced.

If the screw-threaded base is used, I would tap in the bottom of the oil-box a screw-threaded hole to correspond with the said screw-threaded base, and in either case the tube would be inserted up through the reservoir from beneath in a secure and tight manner.

The manner in which the improvements in this invention operate, and the advantages secured by their use, are as follows: By the employment of the ball or screw base the lubricator can readily be applied from beneath without necessitating the opening of the oil-chamber, or its removal, or the removal of the face-plate covering the face of the housing, and the housing can be made permanently tight with or without packing, so as to exclude all dust or dirt that otherwise might enter to injure the journal. The wick-tube being capable of being lengthened, to be adapted to any desired distance between the top of the oil-box and the lower line of surface of the journal, the wear of the journal-box *C*, permitting the journal to lift above the said top of the oil-box, will not operate to effect a distance which would cause the wick to lop over and be without proper lateral support, as the wick-tube can be readily adjusted to suit such increased distance.

By the use of a closed bottom and a ball or screw base for attachment and jointure with the oil-box from beneath, and with ports communicating from the oil-chamber to the interior of the wick-tube, the said wick-tube can be readily taken out and thoroughly cleaned of all dirt which would naturally be drawn and deposited into the depressed closed bottom, which will effectually prevent any accumulation of dirt in the oil-chamber.

By the use of the volute metallic-fabric wick the capillary operation of the wick for feeding oil from the base of the tube to the journal is greatly increased, as the friction of the metal with the journal will induce a sufficient amount of heat to render the oil

thin, especially in cold weather, and to better use through the fibers of the wick between the coiled metal, and the wick is also supported stiff by its own structure without liability of being bent over.

The wick, having an elastic support at its base, will admit of the insertion of one of considerable length for a longer time of use, and will keep the feeding end in contact with the journal in all the wear of the bearing-box above; the lubricator being readily detached for the insertion of a new wick by withdrawing the lubricator from the oil-box, when all waste of oil may be prevented by holding beneath the box a pan, to be returned when the lubricator is replaced.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with a housing, *D D*, the oil-reservoir *E*, having its upper shell *a a'* made solid with the housing and box, and inclining from the lateral sides of the same downward toward their juncture, central with the housing, and directly beneath and parallel with the lower side of the axle to be lubricated, and an oil-receiving cup, *G*, communicating with the oil-chamber *H*, with its mouth on a plane with the lowest dip of the top shell, substantially as and for the purpose set forth.

2. A lubricator consisting of a wick-tube, *J*, with a closed bottom, *e*, and ports *v v*, and a wick, *M*, having an elastic support, and provided with a ball or screw-threaded base, for application to an oil-box from beneath, substantially as shown and described.

3. The combination of the extension-tube *K* with the wick-tube *J*, carrying an elastic supported wick, substantially as and for the purpose set forth.

4. The volute metallic-fabric wick *M*, composed of alternate coiled sheet metal *m* and fabric *n*, substantially as and for the purpose set forth.

5. The combination of a lubricator consisting of a wick-tube having a closed bottom and feeding-ports, and a wick having an elastic support, with an oil-box made with a housing, when said lubricator is applied from beneath, substantially as and for the purpose set forth.

WILLIAM B. HOWE.

Witnesses:

CHAS. J. SELKIRK,
GEO. A. THOMPSON.