

UNITED STATES PATENT OFFICE.

GASTON CORBETT LEWIS, OF BAYARD, FLORIDA.

AXLE-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 621,473, dated March 21, 1899.

Application filed June 8, 1898. Serial No. 682,912. (No model.)

To all whom it may concern:

Be it known that I, GASTON CORBETT LEWIS, a citizen of the United States, residing at Bayard, in the county of Duval and State of Florida, have invented a new and useful Axle-Spindle, of which the following is a specification.

This invention relates to lubricators for axle-spindles and the like of that class embodying an oil-reservoir within the spindle.

The object of the present invention is to provide means for maintaining a uniform feed of the oil, to return the surplus oil to the oil-chamber, and to clean or filter the returned oil.

To these ends the invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the drawings, Figure 1 is a perspective view of an axle-spindle having the improvements applied thereto. Fig. 2 is a longitudinal sectional view thereof.

Corresponding parts are denoted by like characters of reference in both figures of the drawings.

Referring to the accompanying drawings, 1 designates an ordinary vehicle-axle having the usual wooden cap 2 and provided with a spindle 3. This spindle is formed from a single piece, being hollowed out in its inner end, as at 4, to receive the end 5 of the axle. Integral straps or arms 6 extend from the upper and lower sides and from the hollowed end of the spindle and are adapted to embrace the axle longitudinally thereof. These straps or arms are secured to the axle by means of an approximately U-shaped clip 7, embracing the straps and the axle and provided with a transverse plate 8, connecting the threaded extremities of the clip. Suitable fastenings or nuts 9 are fitted to the threaded extremities of the clip and adapted to bear against the plate to clamp the latter and the clip tightly about the axle and the straps of the spindle. The upper face of the transverse plate is provided with a stud or lug 10, which passes through an opening 11, formed in the lower strap, and engages a recess 12, formed in the under side of the axle,

whereby the clip is held in place and prevented from slipping longitudinally upon the axle.

The outer end of the spindle is hollow to form the oil-chamber 13, and it is separated from the socket 4 by a wall or partition 14. The oil-chamber has a passage 15 extending into the reduced and externally-threaded outer extremity 16 of the spindle, and this reduced end has a transverse opening or supply-passage 17, communicating with the passage 15, whereby the lubricant may be introduced into the chamber or reservoir 13. A hub-attaching nut 18 is fitted to the reduced extremity of the axle and is provided with a transverse opening 19, which is normally out of alinement with the opening 17, as indicated in Fig. 1, to prevent ingress of dirt and foreign matter into the oil-reservoir. When it is desired to fill the reservoir, the nut is turned until its opening 19 is alined with that of the threaded extension, whereby a continuous passage is formed communicating with the oil-reservoir. To feed the oil to the bearing, a longitudinal series of graduated openings 20 is provided through the lower wall of the reservoir. A more uniform flow of the lubricant is maintained by having the openings graduated in size, for if they were all of the largest size a thin lubricant would be fed too quickly and if the openings were of the smallest size a thick lubricant would be fed too slowly, so to preserve a uniform feed and adapt the lubricator to thick or thin oil the openings have been graduated in size.

The inner end of the spindle is provided with annular shoulders 21, as is usual, and a longitudinal groove 22 is provided in the upper face of the spindle and extends throughout the entire bearing length thereof. An opening 23 is formed through the upper wall of the oil-chamber 13 and communicating with the groove 22, and waste 24 or other suitable material forming a strainer or filter is fitted in said opening. The purpose of this construction is to return the surplus oil to the oil-chamber through the straining or filtering material 24, whereby the returned oil is cleaned of grit, &c. Thus the excess oil is not lost, but is cleaned and used again, whereby clean

oil is fed to the bearing, and foreign matter, which might stop up the feed-openings 20, is prevented from entering the oil-chamber. It will thus be obvious that another advantage
5 is attained by reason of the graduated feed-openings in that foreign particles which cannot pass through the smaller openings can pass through the larger openings, and thereby stopping or clogging of the openings is reduced to a minimum. The filtering material
10 is not intended to engage with the body of the oil in the reservoir 13, and therefore does not feed the oil to the bearing, as is common, but conducts the oil to the reservoir and
15 cleans the returned oil, and the material should be changed from time to time, so as to keep the oil in a clean state.

The arrangement of the parts of the present device produces a simple and improved
20 lubricating device, resulting in a uniform feed of the lubricant and a straining or cleaning of the surplus oil, which is returned to the oil-reservoir.

Changes in the form, proportion, and minor
25 details of construction and arrangement may be made without departing from the spirit and scope or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed is—

A device of the class described comprising a hollow spindle having a longitudinal oil-chamber and provided at the bottom thereof with a longitudinal series of graduated openings, gradually increasing in size from the
35 outer end of the spindle to cause a distribution of the oil, said spindle being provided at its top with oil-grooves and having an opening communicating with the same and receiving straining material, the threaded end of
40 the spindle being hollow and provided with a transverse supply-passage, and a nut covering the outer end of the spindle and provided with a transverse perforation adapted to register with the supply-opening when the spindle is to be supplied with oil, said nut being
45 also adapted to cover the supply-opening, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
50 the presence of two witnesses.

GASTON CORBETT LEWIS.

Witnesses:

M. C. MONROE,
JAS. D. MONROE.