J. M. SMITH.

Vehicle-Axle Lubricator.

No. 213,461. Patented Mar. 18, 1879.

Fig: 1.

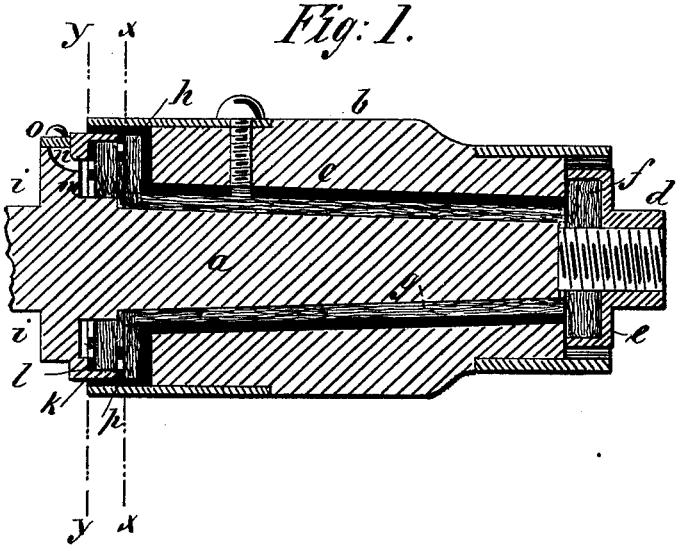


Fig: 2.

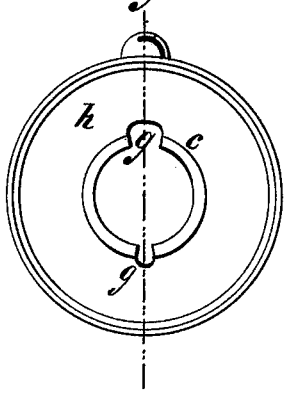
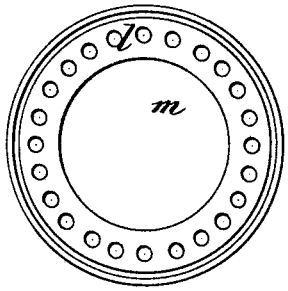


Fig: 3.



WITNESSES:

Achilles Schehl

C. Sedgwick

INVENTOR:

J. M. Smith

BY Munn & Co

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES M. SMITH, OF SYCAMORE, ASSIGNOR TO HIMSELF AND WILLIAM L. ISAAC, OF BERLIN, ILLINOIS.

IMPROVEMENT IN VEHICLE-AXLE LUBRICATORS.

Specification forming part of Letters Patent No. **213,461**, dated March 18, 1879; application filed September 2, 1878.

To all whom it may concern:

Be it known that I, JAMES M. SMITH, of Sycamore, in the county of De Kalb and State of Illinois, have invented a new and Improved Axle-Box, of which the following is a specification:

The invention will first be described in connection with the drawings, and then pointed out in the claim.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved axle-box and hub. Fig. 2 is a cross-section at the line *x x*, and Fig. 3 is a cross-section at the line *y y*, the packing being removed in the last two figures.

Similar letters of reference indicate corresponding parts.

a represents the journal of an axle. *b* is the wooden hub, lined with a metal box, *c*. The hub and wheel are retained upon the journal *a* by a nut, *d*, that is formed with a flange, *e*, that bears against the end of hub *b*. The inner face of the flange *e* is cut out, or has an annular groove formed in it, into which fibrous material is packed, as seen at *f*.

The metal box *c* has one or more grooves, *g*, cut in its surface lengthwise of the hub. These grooves *g* may be straight or spiral. The inner end of the box, where it comes next to the flange of the axle, is formed with an annular groove or cup, *h*. This cup *h* and the grooves *g* are filled with packing material.

i is a flange upon the journal *a*. It is cut out at the side next the hub *b*, cup-shaped, as seen at *k*, and the space filled with packing material.

l is a perforated ring in the bottom of the space *k*, in front of an annular groove or space, *m*, that communicates with a passage, *n*, from the outside of the flange *i*. The passage *n* is covered by a turning plate, *o*.

When the hub *b* is in place upon the axle, the packing in the space *k* of flange *i* and that in the cup *h* of the box *c* come contiguous, and are only separated by a perforated ring, *p*, on the journal *a*. This ring *p* is not, however, essential, as there may be direct contact between the surfaces.

Oil is to be poured in the passage *n*, and will saturate the material in the cup *k*, and from thence be communicated to the material in *h*, grooves *g*, and the packing at *f*. The axle may thus be oiled perfectly without removing the wheel from the axle.

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

The perforated plate *m*, in combination with the recessed flange *i* and box *c*, provided with grooves and recesses, filled with packing material, substantially as and for the purposes set forth.

JAMES M. SMITH.

Witnesses:

LUTHER LOWELL,

D. J. CARNES.