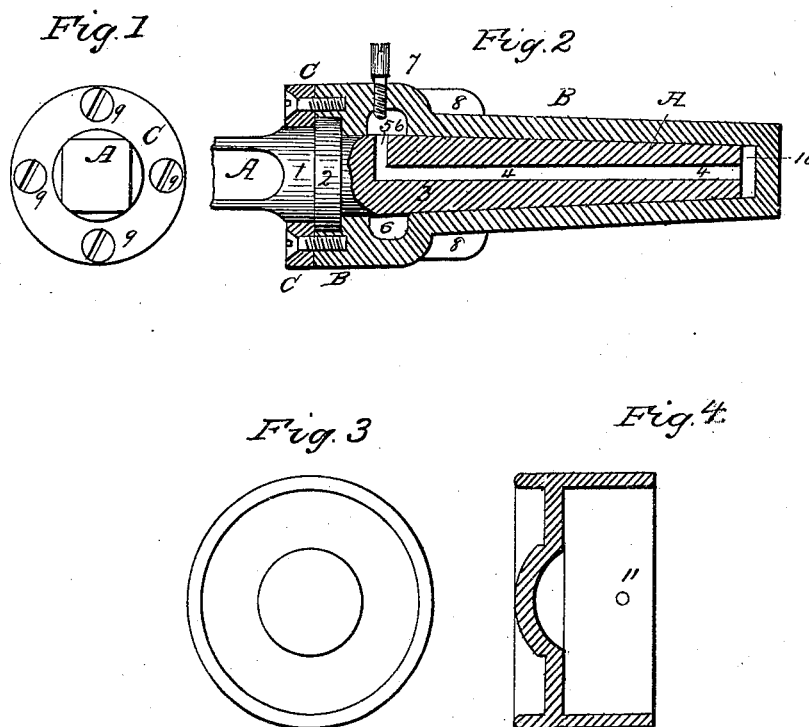


VON JEINSEN & McDONALD.

Axle Lubricator.

No. 113,116.

Patented March 28, 1871.



Witnesses
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UNITED STATES PATENT OFFICE.

ERNEST VON JEINSEN AND JAMES MONROE McDONALD, OF SAN FRANCISCO,
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IMPROVEMENT IN AXLES AND AXLE-BOXES FOR VEHICLES.

Specification forming part of Letters Patent No. **113,116**, dated March 28, 1871.

To all whom it may concern:

Be it known that we, ERNEST VON JEINSEN and JAMES MONROE McDONALD, of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Axles and Axle-Boxes for Vehicles; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates to certain improvements in axles and boxes of wheeled vehicles for the purpose of excluding dust, retaining the box on the axle, and thoroughly lubricating the various parts; and consists of certain details of construction and arrangement, hereinafter fully described and set forth.

In the drawing, Figure 1 is an end view; Fig. 2, a longitudinal section of an axle and box having this improvement. Fig. 3 is an elevation; Fig. 4, a section of a cap to cover the end of the hub of a carriage-wheel in which this invention is employed.

To enable others skilled in the art or science to which it most nearly appertains to make and use our invention, we will proceed to describe fully its construction and operation.

A is the axle, having a cylindrical part, 1, a collar, 2, and a conical or tapered part, 3.

The conical part of the axle, 3, is provided with a longitudinal cylindrical oil-passage, 4, concentric with or parallel to the axis of this part of the axle, and extending from the end of the axle to near the collar 2, where it joins a radial passage, 5, communicating with the annular recess or oil-reservoir 6 of the box.

B is the box.

The oil-reservoir 6 is filled by first revolving the wheel in which the box is placed until the screw 7 is uppermost, then removing the screw and pouring in the oil. The top of the head of the screw may be flush with the outer surface of the hub.

8 are feathers to prevent the box from turning on the hub.

The box has a recess at its inner end, into which the collar 2 fits, and the inner side of the collar is flush with the inner-end face of the box.

The box is prevented from slipping off the

axle by the plate C, which is firmly secured to the box by screws 9. A ring or rings of leather or india-rubber, or both, may be placed between plate C and the box, for the purpose of making an elastic joint and allowing more end motion, if required.

The oil from the reservoir 6 fills the passage 4, and, through the passage 4, fills any space, 10, that may be between the end of the axle and the end of the box; and the oil, being thus supplied at or near both ends of the conical part 3, will find its way to every part of the surface of said part 3; and the slight end-long or jarring motion of the parts will drive the oil with violence into any space that may occur between the axle and the box, and also force the oil with more or less violence back and forth through the passages 4 and 5, and prevent said passages from becoming choked or stopped, and provide a constant and effective means of lubrication of all the parts.

The cap (represented in Figs. 3 and 4) is secured to the wood of the hub by means of nails or screws passing through holes 11. Said holes may be countersunk on the outside for receiving the heads. This cap makes a neat finish for the outer end of the hub.

It will here be observed that in this construction of axles and boxes not only is the amount of friction reduced by lessening the wearing or bearing surfaces, but the axle is much less liable to break near the collar or shoulder, and is constantly supplied with lubricating material in the oil-tight reservoir or box, which seldom need be replenished.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The axle B, constructed specifically as described, with its oil-chamber 6 and projecting shoulder provided with screw-holes, in combination with the axle provided with the orifice 4 5 and flange, the parts being united by a collar, as and for the purpose set forth.

In witness whereof we have hereunto set our hands and seals.

ERNEST VON JEINSEN. [L. S.]

JAMES MONROE McDONALD. [L. S.]

Witnesses:

C. W. M. SMITH,

H. S. TIBBEY.