I. N. CAMP.

VEHICLE AXLE-BOX.

No. 192,677. Patented July 3, 1877.

Fig. 1.

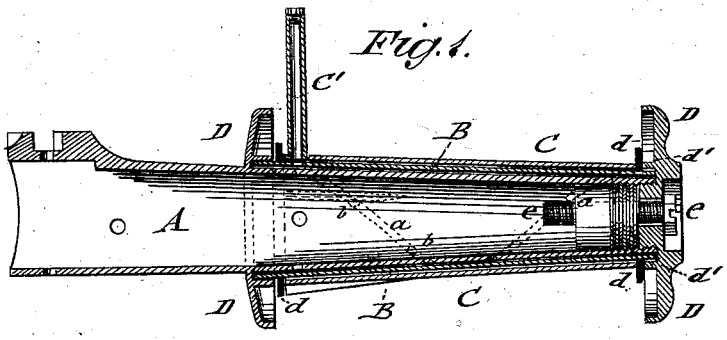


Fig. 2.

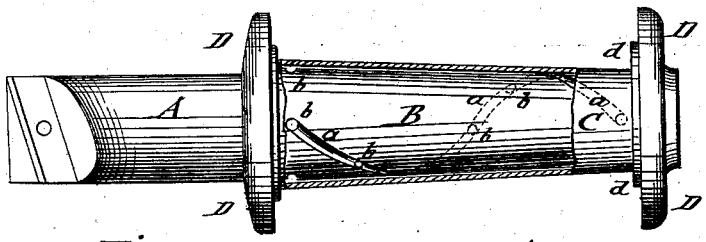


Fig. 3

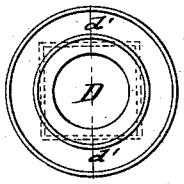
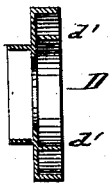


Fig. 4.



WITNESSES:

Francis McArdle.

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INVENTOR:

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BY

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UNITED STATES PATENT OFFICE.

ISAAC NEWTON CAMP, OF DEERFIELD, MICHIGAN.

IMPROVEMENT IN VEHICLE AXLE-BOXES.

Specification forming part of Letters Patent No. **192,677**, dated July 3, 1877; application filed April 2, 1877.

To all whom it may concern:

Be it known that I, ISAAC N. CAMP, of Deerfield, in the county of Lenawee and State of Michigan, have invented a new and Improved Wagon Axle-Box, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of my improved axle-box; Fig. 2 a top view, with parts broken off to show interior of box; and Figs. 3 and 4 are a front view and transverse section of the flanged box-retaining cap, seated on the square axle.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved self-lubricating axle-box for vehicles, shafting, and other purposes, by which the oil may be supplied without taking off the wheel, and confined securely within the box without admitting the entrance of dust, so as to economize the oil and save the time required for the frequent oiling of wheels.

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

In the drawing, A represents the axle, which is inclosed at the hub-section with a revolving box, B, provided with outer spiral or other grooves or channels, *a*, and, if desired, an inner returning groove for the oil. The groove or grooves *a* are provided at suitable distances with perforations *b*, through which the oil passes to the axle to lubricate the bearing of box and axle.

The box B is inclosed by a second outer box, C, that is retained, together with the inner box, by flanged caps D, at both ends, the flanged caps bearing against interposed leather washers *d*, to prevent the entrance of dust and the escape of oil.

The inner annular flanges *d'* of the caps D extend around the inner box B, and bear on the leather washer, and on the ends of the outer inclosing-box C, while the outer flanges of the caps enter corresponding grooves of the revolving hub. The cap D at the inner side of the hub is welded on to the round or square axle, being in the latter case provided with a square flange or seat, as shown in Figs. 3 and 4, while the outer is screwed into the same, and secured against turning loose by back motion, by an additional center screw, *e*. The oil is supplied to the box by a cylindrical cup, C', that passes through a perforation of the hub, and is securely closed by a screw-plug.

The box may be made of copper, brass, or other material, and be applied to vehicles of all kinds, being intended to take up all the wear, so as to be readily removed when worn out and a new box inserted.

The quantity of oil in box and cup holds out for a considerable length of time, as none of it is lost. The box is readily refilled by turning the wheel until the cup is in vertical position, when the plug is removed, the oil put in, and the cup closed again, which can all be done without taking off the wheel from the axle. The oil is distributed uniformly over the entire axle, by the supply channels and holes, and thereby a continuous and reliable, yet economical, lubrication of the axle obtained.

For the purpose of furnishing an additional safeguard against the entrance of dust to the box, a dust-cap is applied to the outer end of the box fitted over the band on the hub, and secured thereto by three or four screws seated in countersunk holes. This cap is made of sheet-iron for wagons, and of brass, copper, or silver-plated, for better class of carriages.

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

The combination of inner box B and outer box C with the caps D, having flanges *d'*, the washers *d* and the center screw *c*, as shown and described.

ISAAC NEWTON CAMP.

Witnesses:

HENRY E. COWLES,

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