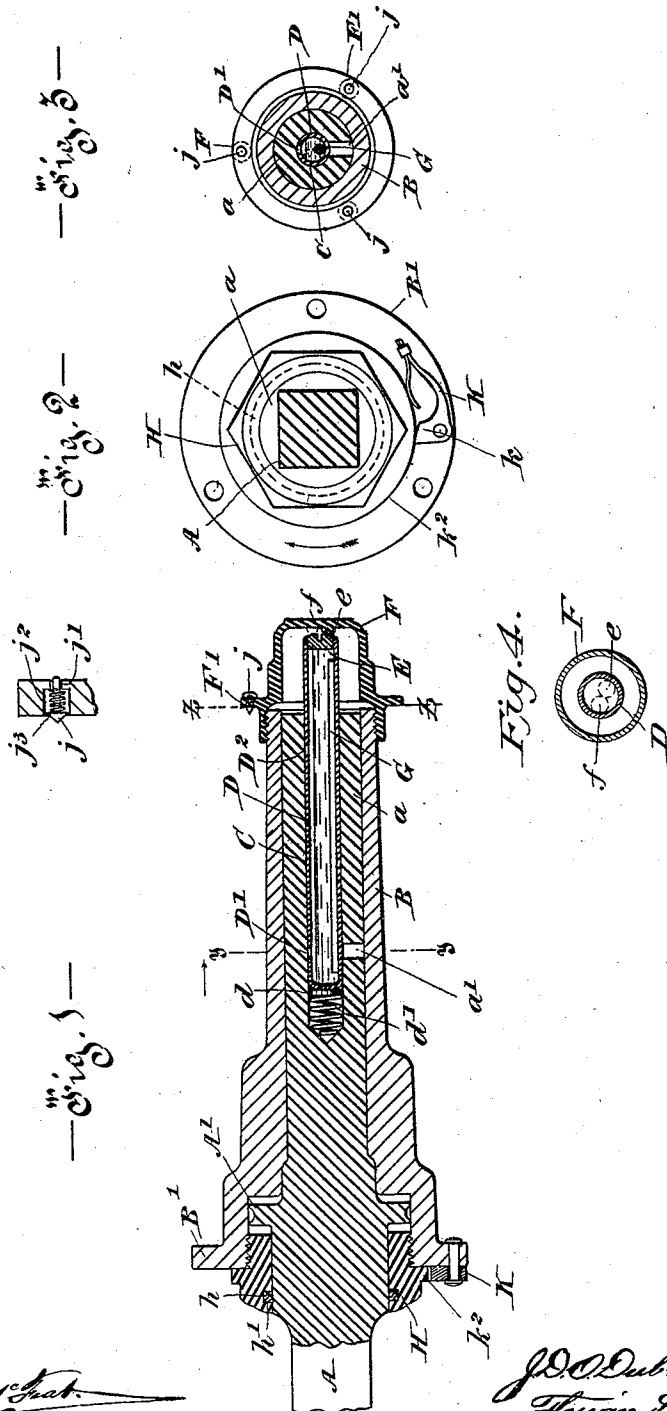


(No Model.)

J. D. O. DUBRULE & F. LEBEL.
AXLE LUBRICATOR.

No. 496,824.

Patented May 2, 1893.



Witnesses
Wm. H. Felt
And J. H. Sears

Inventors
J. D. O. Dubrule
F. Lebel
By *Wm. H. Felt* Attorney
Res. H. Key

UNITED STATES PATENT OFFICE.

JOSEPH D. O. DUBRULE AND FLORIAN LEBEL, OF MONTREAL, CANADA.

AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 496,824, dated May 2, 1893.

Application filed June 28, 1892. Serial No. 438,333. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH DANIEL OVIDE DUBRULE and FLORIAN LEBEL, both of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Carriage-Axles; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates more particularly to devices for supplying oil to the wheel bearings or journals of carriage axles and may be considered as an improvement on the construction shown in United States Patent No. 404,635.

In the construction referred to the axle contained an oblique boring from end to side in which worked an agitating needle having only a longitudinal reciprocating movement imparted to it by a spring acting in conjunction with the uneven surface of a cap screwed on the end of the axle box and forming a chamber for the oil.

The present invention has for its object first to secure an improved oil chamber and a more efficient agitation of the oil; second, to furnish the cap and nut, described in the patent referred to, with locking devices to prevent their unscrewing in the event of the vehicle having any considerable backward travel. For full comprehension however of the invention, reference must be had to the accompanying drawings forming a part of this specification in which like symbols indicate corresponding parts and wherein—

Figure 1 is a longitudinal section of one end of an axle and the axle box cap and nut on same; Fig. 2 a part section and inner end elevation of the same parts and Fig. 3 a transverse section on line $x-x$ Fig. 1, Fig. 4 being a transverse section on line $z-z$ Fig. 1.

A is the axle, A' the fixed collar thereon at the inner end of its journal portion a .

B is the axle box bored to fit snugly upon the journal a and enlarged at its inner end to overreach the collar A'. The journal a is bored centrally from its outer end inward for about two thirds of the length to form a chamber C in which is fitted snugly but at the same time freely so as to have an easy movement therein, a tube D the inner end of which is

stopped and bears against a washer d interposed between it and a coiled spring d' at the end of the chamber. The outer end of the tube is closed by a plug E screwed into it and bearing a knob e formed on its outer surface, 55 eccentrically located and adapted to be engaged by a like eccentrically placed knob f formed on the interior side of the head of the cap F whereby upon the rotation of such cap the tube will receive both a longitudinally reciprocating movement and an intermittent rotation, from the intermittent rubbing together of said knobs, the plug F being easily renewed when its knob is worn. The tube D is provided with two openings D' D² which 60 serve respectively as air outlet and oil receiver when oil is being introduced, the spring d' serving to move the tube outward sufficiently, when the cap F is removed, to allow of the oil being poured into the opening D² 70 and the tube also contains a loose rod G which by the movement of the tube and the shaking motion of the axle is particularly effective in keeping the oil at the desired consistency.

a' is a vertical transverse passage from the chamber C to the periphery of the journal through which the lubricant finds its way. 75

To prevent any escape of oil at the rear end of the journal we cut a groove h on the interior bearing face of the nut H and insert 80 a washer h' of felt or like material therein to bear upon the axle.

As safeguards against the cap F and nut H unscrewing in the event of the vehicle being subject to any considerable backward travel and thereby allowing oil to escape we 85 form a flange or rim F' on the cap to bear against the face of the hub of the wheel and carry in such flange or rim a locking device in the shape of a headed pin j passed through a transverse hole j' bored in the rim and having an enlargement j^2 to accommodate the coiled spring j^3 for pressing such pin in against the hub. 90

The device for locking the nut H consists of a spring operated pawl K pivoted to a flange or rim B' at the inner end of the box B and having its free end k bearing upon an annular enlargement k^2 on the nut H. 95

The arrow in Fig. 2 represents the proper 100

forward traveling rotation of the box and it will readily be seen that any backward rotation of the parts would only tend to press such pawl into closer contact with the nut.

5 What we claim is as follows:

1. The combination with the axle journal having a longitudinal chamber parallel with the axis of said journal and extending from its outer end inward and a feed passage from
10 said chamber to the periphery of the journal, of a hollow movable oil carrier or tube with stopped ends and perforated perimeter located in said chamber and projecting beyond same and means for imparting a longitudinal
15 reciprocating movement to such carrier, as set forth.

2. The combination with the axle journal having a longitudinal chamber parallel with the axis of said journal and extending from
20 its outer end inward, and a feed passage from said chamber to the periphery of the journal, of an oil carrier or receptacle located in said chamber and means for imparting an intermittent rotary movement to said carrier, as
25 set forth.

3. The combination with the axle journal having a longitudinal chamber parallel with the axis of said journal and extending from its outer end inward and a feed passage from
30 said chamber to the periphery of the journal, of an oil carrier or receptacle located in said chamber and means for imparting a longitudinally reciprocating and intermittent rotary movement to said carrier, as set forth.

4. The combination with the axle journal 35 having a longitudinal chamber parallel with the axis of said journal and extending from its outer end inward and a feed passage from said chamber to the periphery of the journal and with the axle box cap having an interior 40 uneven surface of a perforated tube with stopped ends one of which is of uneven or irregular surface adapted to contain the lubricant and be located in said chamber, a spring device on the inner end of said tube and forcing its end having the uneven or irregular surface against the uneven surface of the said cap as set forth.

5. The combination with the movable oil carrier, located in the journal of the axle and 50 with the means for operating such carrier, of a free agitating rod lying loosely within such carrier for the purpose set forth.

6. The combination with the axle containing an oil chamber; an oil carrier located in 55 and projecting therefrom; cap F with interior uneven surface and having the flange F' with perforation j' , of the spring operated locking device j, j^3 , located in such perforation and having pointed inner projection to engage 60 the wheel hub for the purpose set forth.

Montreal, 21st day of June, 1892.

JOSEPH D. O. DUBRULE.
FLORIAN LEBEL.

Witnesses:

WILL. P. MCFEAT,
FRED. J. SEARS.