

(No Model.)

2 Sheets—Sheet 1.

J. S. PATTEN.
AXLE LUBRICATOR.

No. 479,077.

Patented July 19, 1892.

Fig. 1.

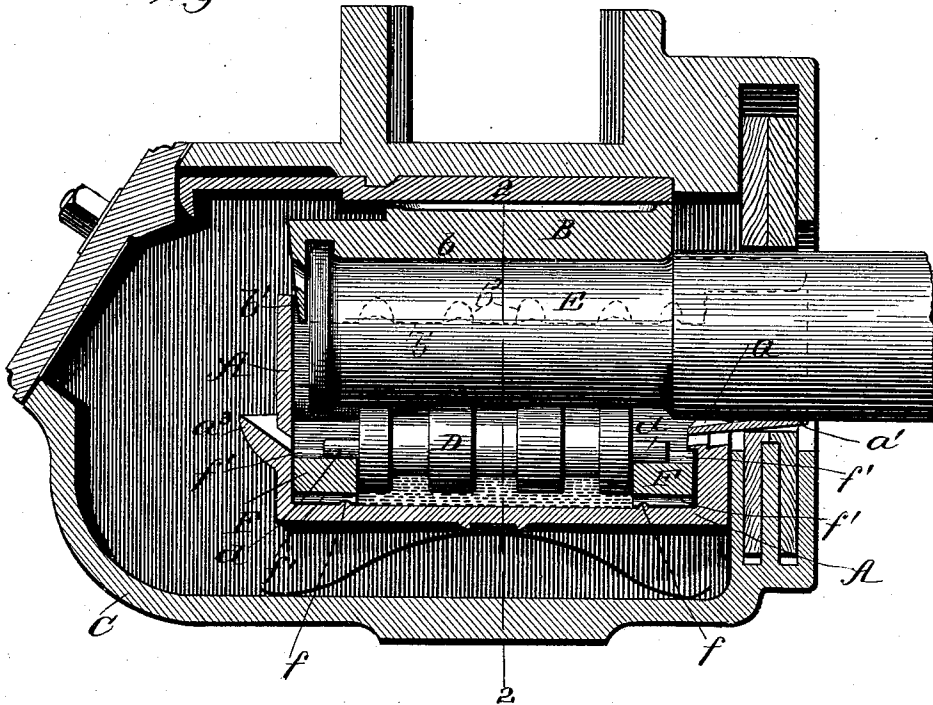
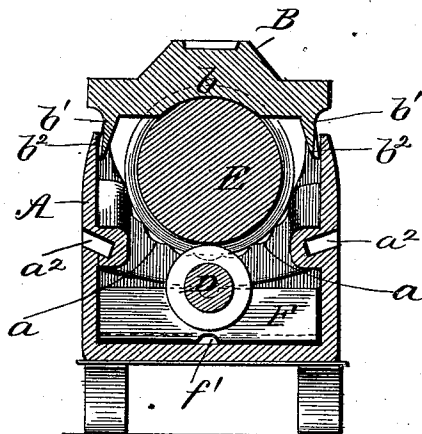


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

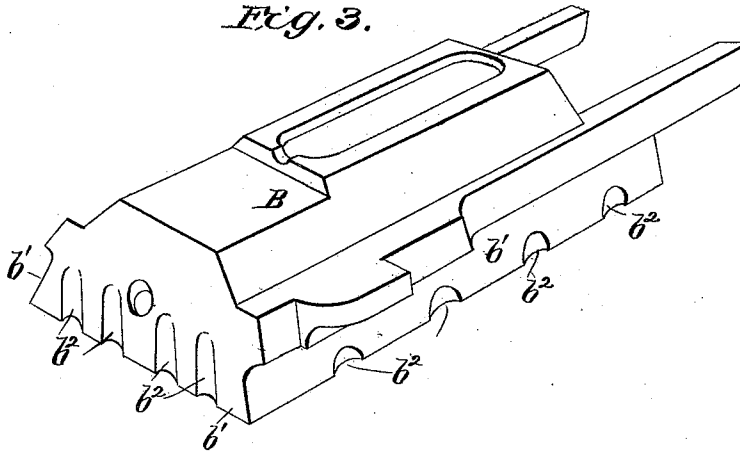


Fig. 4.

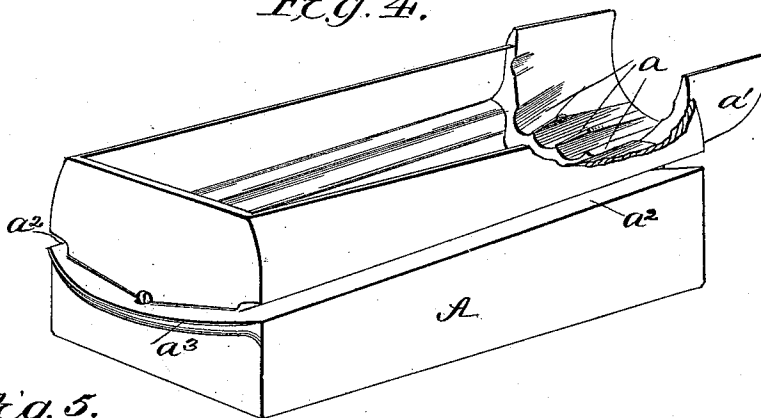


Fig. 5.

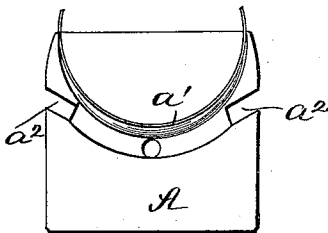
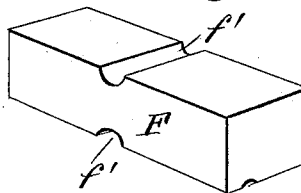


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES S. PATTEN, OF BALTIMORE, MARYLAND.

AXLE-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 479,077, dated July 19, 1892.

Application filed September 18, 1891. Serial No. 406,056. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. PATTEN, residing at Baltimore, in the State of Maryland, have invented a new and Improved Axle-Lubricator, of which the following is a specification.

The oil or other lubricant for a car-axle journal is usually placed, along with its vehicle tow or cotton, directly in the chamber of the box, which slides up and down in the hanger or pedestal as the springs of the car-truck expand and contract. By my invention I provide a separate or supplementary box for holding the lubricant, together with a roller for conveying it to the axle-journal, and such box is made of such reduced dimensions that it may be contained in the chamber of the sliding box above referred to.

My improvements consists, therefore, in the construction of such supplementary lubricant-holding box and its appurtenances or attachments, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved axle-box, together with a larger inclosing-box that slides in the hanger of a car-truck. Fig. 2 is a vertical cross-section of my improved box on line 2 2 of Fig. 1. Figs. 3 and 4 are perspective views of the cover and body, respectively of my improved box. Fig. 5 is a rear end view of the body of the same. Fig. 6 is a perspective view of one of the roller journal-blocks employed in the aforesaid box.

My improved journal-box consists of the oblong rectangular body portion A, which receives and holds the lubricant, and a cap or cover B, of which the ordinary brass or bearing-block *b* forms the top portion. Said box is of such dimensions that it may be introduced through the mouth of the ordinary axle-box C, that slides vertically in the car-truck pedestal or hanger. It is supported and pressed upward against the axle-journal by means of a spring or springs of any suitable form. The cover B has an end cap and a dependent flange *b'* on three sides. Said flange conforms to but fits loosely within the corresponding sides of the body portion A, as shown. Wings also project horizontally rearward to cover a part of the axle that would otherwise be left exposed. In the bottom of

the chamber is arranged longitudinally a roller D, having several circumferential grooves. The axle-journal E rotates in contact with this roller, which is therefore rotated in turn with greater speed, and, being partly immersed in oil, it constantly takes up a portion of the latter and thus transfers it to the journal E, so that the friction-bearing between the journal and brass *b* is always well lubricated. The bearings of the grooved roller D are two blocks F, arranged transversely at the ends of the box A, and held in such position by means of projections *f* of the floor of part B, which fit in sockets in the blocks, as shown in Figs. 1 and 2. The journals *d* of the roller D fit and work in semi-circular grooves *f'*, that extend entirely across the respective bearing-blocks, whose width is twice the length of the journals. The said grooves *f'* being also formed in both the upper and under sides of the blocks F, it is apparent the latter may be reversed in position, end for end or bottom for top, when one portion of a groove becomes worn so as to require it. The oil carried up on the axle-journal E as it revolves tends to run over the shoulder of the latter and accumulate on the larger portion next the wheel. To remove it therefrom and thus prevent it from spreading farther, I provide a series of scrapers *a*, which consist of thin parallel ribs formed interiorly on the semi-cylindrical flange *a'*, that projects from the inner end of the body A of the oil-box. The said flange slopes inward and the grooves between the ribs or scrapers *a* become gradually deeper from the outer to the inner end, as most clearly shown in Fig. 4. Since the flange *a'* fits the body of the axle, the oil is scraped off from the latter as it revolves, and is received by the grooves, which convey it into the chamber of the box A. A portion of the oil that reaches the bearing *b* is rolled back and runs down the adjacent inner side of flange *b'*. I have found, however, by practical test, that some portion of it will not drip into the box A, but run up over its sides, and that by forming a series of shallow notches or scallops *b²* in the edge of the flange *b'* this result is mainly prevented, since such notches not only constitute spaces that break the continuity of contact of the parts A B, Fig. 2, but provide openings

through which oil may pass back into the box A. Such small quantity of oil as inevitably passes upward above the notches b^2 and flows down on the outside of the box A is received
5 by grooves a^2 , formed in the same and extending around three of its sides and inclined forward at a slight angle, so as to convey the oil into the concavity of the lip a^3 , that projects from the outer end of the box A, and whence
10 it flows back into the latter through a hole formed at the lowest part of said concavity.

Oil may be introduced into the box A B through the holes at the front or rear. It will be seen that a comparatively small quantity
15 is required to maintain a copious lubrication of the journal-bearing, and that in consequence of being continuously taken up and used and escape from the box A B being cut off the waste of the lubricant is reduced to a
20 minimum and practically to nothing.

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

1. In a car-axle lubricator, the combination,
25 with the lubricant-holding box and take-up roller, of the reversible bearing-blocks supported in the former, each of said blocks having a journal-groove extending entirely across its face, whose width is twice the length of
30 the journals of said roller, as shown and described.

2. In a car-axle lubricator, the combination, with the lubricant-holding box and take-up roller, of the bearing-blocks for the latter having journal-grooves arranged opposite and
35 parallel in upper and undersides, and adapted to be reversed top for bottom, as shown and described.

3. In a car-axle lubricator, the body portion of the lubricant-holding box, having the rear-
40 wardly-extended and inwardly-inclined semi-circular flange which conforms to the axle, provided with a series of ribs and a series of intervening grooves, which become gradually shallower as they extend outwardly to van-
45 ishing points, whereby they serve to reconvey into the box that portion of the lubricant scraped off the journal by the said ribs, as specified.

4. In a car-axle lubricator, the body A of
50 the lubricant-holding box, constructed integrally and having in its outer sides and outer end the oil-conducting grooves a^2 and a^3 , which incline downwardly, and an opening in said
55 outer end for allowing the lubricant received in the grooves to re-enter the box, as shown and described.

JAMES S. PATTEN.

Witnesses:

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W. M. STRAYER, Jr.