G. WILLIAMS.
CAR AXLE BOX.

No. 193,064. Patented July 10, 1877.

Fig 1.

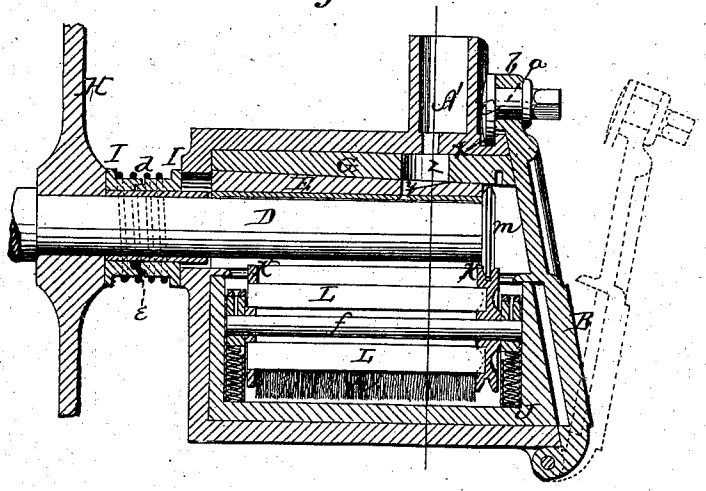


Fig 2

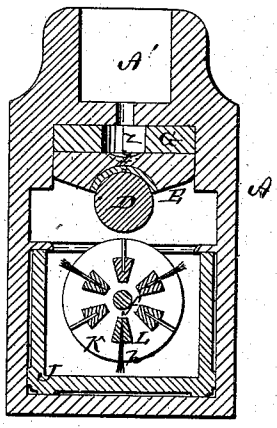


Fig 5

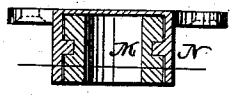


Fig. 6.

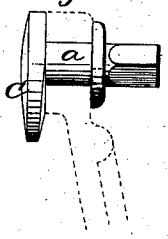


Fig. 7.

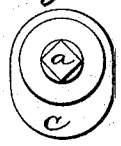


Fig. 3.

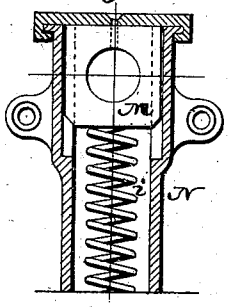
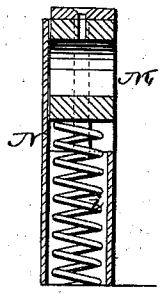


Fig. 4



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE WILLIAMS, OF MYSTIC BRIDGE, ASSIGNOR OF ONE-HALF HIS RIGHT TO FREDERICK A. HOLMES, OF STONINGTON, CONNECTICUT.

IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **193,064**, dated July 10, 1877; application filed June 26, 1877.

To all whom it may concern:

Be it known that I, GEORGE WILLIAMS, of Mystic Bridge, in the county of New London, and in the State of Connecticut, have invented certain new and useful Improvements in Car-Axle Journal-Box and Lubricator; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a car-axle journal-box and lubricator therein, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a longitudinal vertical section of a car-axle journal-box embodying my invention. Fig. 2 is a transverse vertical section of the same. Figs. 3, 4, 5, 6, and 7 are detached views of parts thereof.

A represents a car-axle journal-box of substantially the same form as those now generally in use. The outer end of the box A is closed by means of a door, B, hinged to the box below its lower edge, and provided in the center at the top with a projection, *b*, through which passes a short shaft, *a*, having its outer end made square, for the reception of a wrench or key. On the inner end of the shaft *a* is secured an eccentric, C, the end of which is made in the form of a part of a right-hand screw, so that when turned to the right it will enter a recess, *x*, made in the top of the box, and wedge tightly therein to fasten the door in its place.

It will thus be seen that the mechanism for fastening the hinged door is all on the outside; hence it will not become clogged with oil and dirt to prevent the easy working of the same.

D represents the journal; E, the upper bearing; and G the wedge placed above the journal in the usual manner. In the concavity of the bearing E is made a longitudinal groove, as shown in Figs. 1 and 2, and an aperture, *y*, is made in the bearing connecting with said groove.

The upper surface of the bearing E on one side of the aperture *y* is made inclined, and, with the aperture, is directly below an opening, *z*, in the wedge. On top of the journal-box A is formed a box, A′, with an aperture in the bottom leading into the opening *z*.

The box A′ is to be filled with such grease or other suitable material that will in ordinary temperature remain in a solid state. If the journal then should heat and the box become too warm, the grease will melt and pass down through the apertures *z y*, and by the groove in the bearing be distributed all over the journal, cooling the same.

On the axle D, between the car-wheel H and the end of the box, are placed two flanged collars, I I, the adjoining ends of which are formed with overlapping joints, as shown at *e*, and between the two flanges is placed a spiral spring, *d*, which spreads the collars, so as to close the inner end of the box, preventing the escape of oil and excluding dirt.

In the bottom of the journal-box A is placed a box or drawer, J, having cleats near each side under the bottom to form slides, so that said box or drawer can easily slide to correspond with the lateral motion of the journal. In this box J is placed a revolving cylinder composed of two circular heads, K, placed upon a central shaft, *f*, and connected by means of longitudinal bars L, in each of which is secured a brush, *h*, or its equivalent, for conveying oil to the journal. The center-shaft *f* has its bearings in boxes M, sliding vertically in guides N secured on the inside of the ends of the oil-box J, and the journal-boxes M are supported upon springs *i* held in said guides.

The outer head of the cylinder thus constructed is formed with a circumferential groove, into which fits a flange, *m*, on the end of the journal D, so that when the car is in motion the cylinder will be revolved directly therefrom by friction, and thus supply oil to the journal. The springs *i* hold the cylinder so as to be always tight enough on the flange *m* to revolve by friction.

By having the flange on the journal and the groove in the cylinder-head, the oil-feeding devices are brought in contact with the shaft

without any great amount of friction, inasmuch as there is but one (and that one a very small) frictional contact-point between the two. The cylinder is at all times perfectly guided by the devices set forth for the purpose, and it is not liable to twist or turn from its proper position, and hence cannot retard the free movement of the shaft.

In place of having the brushes running longitudinally, as above described, I may arrange them spirally around the cylinder, in which case the cylinder may be revolved by friction of the journal direct on the brushes.

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

1. In combination with the box A, having recess *x* at its top, the door B, hinged to the bottom of the box, extended above the top of the same, and provided with a short shaft, *a*, and eccentric C, to work in the recess *x*, as set forth.

2. The combination, with a car-journal, D, wheel H, and box A, of the two flanged collars, I I, constructed independent of the box or wheel, formed with overlapping L-shaped joints *e*, and the exterior spring *d* surrounding the same, substantially as and for the purposes herein set forth.

3. The combination, with a car-journal, D, having flange *m*, of the cylinder K L, with circumferential groove in the outer head, and with brushes *h*, journal-boxes M, guides N, and springs *i*, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of July, A. D. 1875.

GEORGE WILLIAMS.

Witnesses:
B. LATHAM MILLER,
C. L. EVERT.