

No. 45,058.

PATENTED NOV. 15, 1864.

W. LOUGHRIDGE.
AXLE BOX.

Fig. 1.

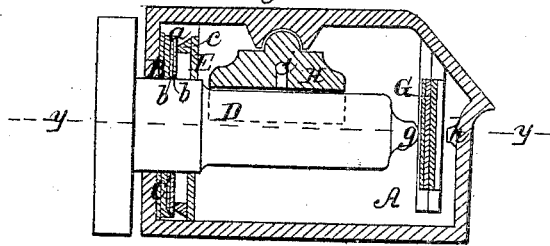


Fig. 2.

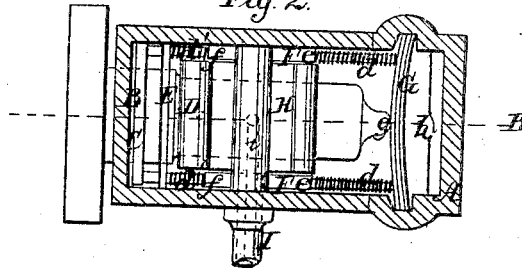


Fig. 4.



Fig. 3.

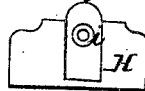
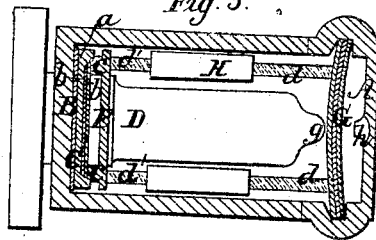


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM LOUGHRIDGE, OF WEVERTON, MARYLAND.

IMPROVEMENT IN AXLE-BOXES FOR CAR-TRUCKS.

Specification forming part of Letters Patent No. **45,058**, dated November 15, 1864.

To all whom it may concern :

Be it known that I, WILLIAM LOUGHRIDGE, of Weverton, in the county of Washington and State of Maryland, have invented a new and Improved Axle-Box for Car-Trucks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal vertical section of my invention taken in the line *x x*, Fig. 2; Fig. 2, a plan or top view of the same, the top plate of the box being removed; Fig. 3, a side view of the bearing of the same; Fig. 4, an end view of the bearing; Fig. 5, a horizontal section of the box, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate like parts.

The object of this invention is, to prevent the heating of the boxes; the delay of trains, to economize in the consumption of oil for lubricating, and to greatly diminish the amount of friction which is produced by the lateral motion of the cars and in turning curves.

The invention consists, first, in reducing the end of the axle-journal to a pivot or to a size much less than the portion of the journal on which the bearing rests, and thereby reduce the tendency to heat at the point where the axle comes in contact with the spring or check.

My invention consists, second, in the employment or use of a spring placed in the front part of the axle-box and at right angles with the journal, and so arranged as to receive the end-thrust of the axle and soften or ease the intensity of the blow of the axle arising from a quick lateral motion or side swinging of the cars, thereby reducing the tendency of the journal to heat at its end and relieving the axle from much strain.

My invention consists, third, in a peculiar stuffing-box, constructed and arranged to prevent the admission of dust within the box and the escape of oil therefrom.

My invention consists, fourth, in a novel and improved manner of lubricating the journal, whereby the latter may always be properly supplied with oil, even when the cars are in motion.

I construct the axle-box A of the usual form

externally, but free from all obstructions within, to admit of an ordinary leather packing, B, being slipped into the box to bear against its rear side, said packing being fitted on the journal.

C is a plate which bears against the packing B within the box, and has a circular opening in it for the journal D to pass through. This plate C has at its inner side an annular projection, *a*, around its opening, to form a socket to receive two or more rings of packing, *b b*. These rings may be of leather or metal. I prefer the latter material, and I design to have the rings cut to admit of them expanding and contracting like the ordinary metallic packing for pistons.

E is a plate which is provided with an annular projection, *c*, to bear against the packing-rings *b b*, and F F are two rods which are fitted at one end in a semi-elliptic spring, G, at the front end of the box, the opposite ends passing through the plate E and bearing against the plate C, as shown in Fig. 2. These rods F F have each two spiral springs, *d d'*, placed upon them, the springs *d* being between the spring G and a shoulder *e* on the rods. The springs *d* have a tendency to press the rods F against the plate C, which in turn presses against the packing B, while the springs *d'*, which are placed between the plate E and shoulders *f* on the rods F, have a tendency to press the annular projection *c* of plate E against the packing-rings *b b* and keep the same snugly in contact with the journal D, as will be fully understood by referring to Fig. 5.

The journal D is reduced at its end to a pivot-point, *g*, or to such a diameter as to have but a small surface in contact with the semi-elliptic spring G. This point *g*, as well as the portion of the spring G against which it bears, should be hardened steel, in order to prevent wear. At the inner side of the front of the axle-box A there is a lug, *h*, to limit the play or movement of the spring G.

H is the bearing, placed on the journal D as usual, and provided with an oil-passage, *i*, having a tube, I, communicating with it, which passes through the side of the box A and may extend upward within the car and communicate with an oil-reservoir therein, or a reservoir may be placed at the outer side of the car. The tube I may, if desired, be of flexible ma-

terial and provided with a stop-cock to regulate the flow of oil into the bearing and cut it off entirely when necessary. The discharge-orifice of the oil-passage *i* is directly over the journal D at the center of the bottom of the bearing H.

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

1. The stuffing-box composed of the leather B, or its equivalent, annular socket *a*, metallic packing *b*, and pressure-plate E, substantially as described.

2. The arrangement of the springs *d d'* and rods F F with the socket *a* and pressure-plate E, all arranged to operate substantially as and for the purpose set forth.

3. The combination of the pivoted axle with the semi-elliptical springs, slipped in between shoulders at the inner end of the axle-box.

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Witnesses:

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