



(No Model.)

2 Sheets—Sheet 2.

H. K. AUSTIN.

CAR AXLE BOX.

No. 336,685.

Patented Feb. 23, 1886.

Fig: 6.

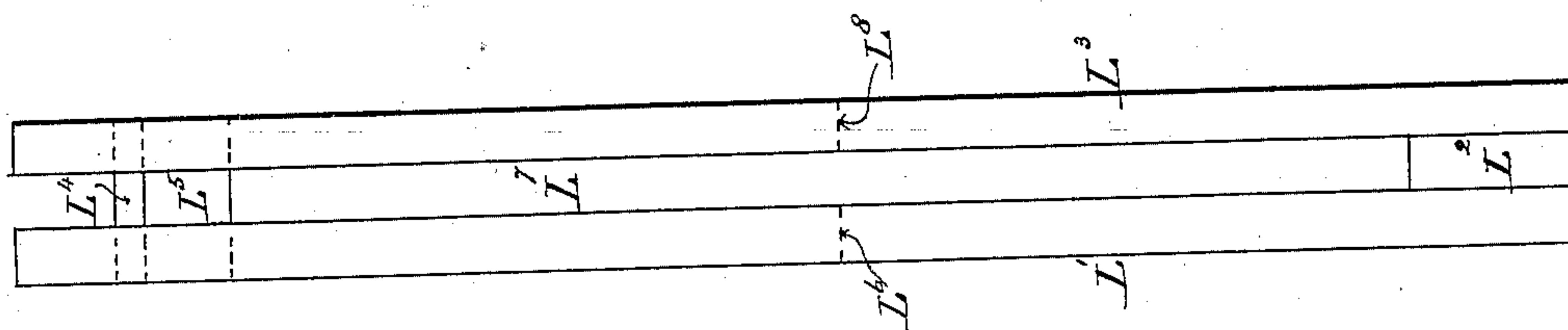
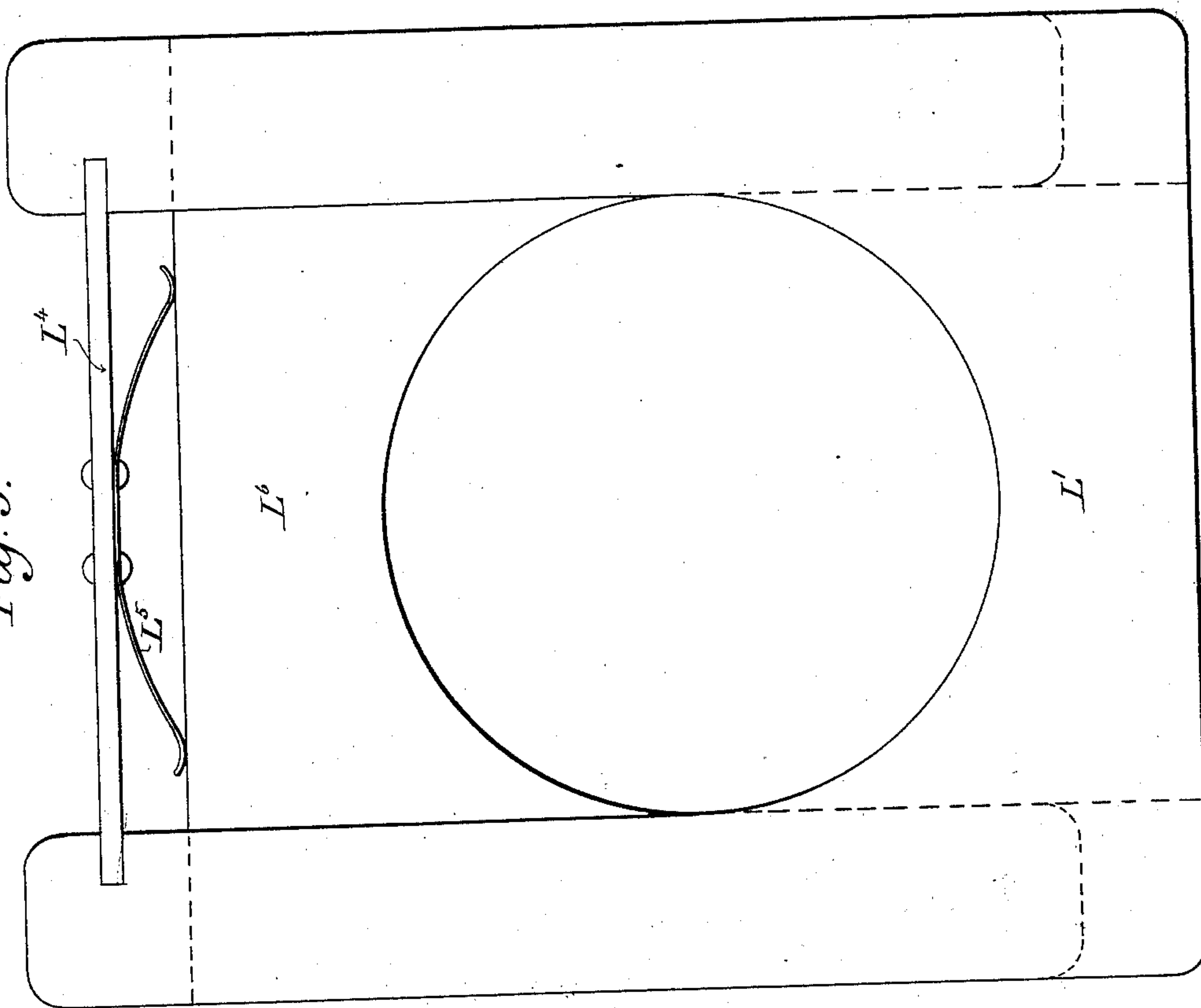


Fig: 5.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 336,685, dated February 23, 1886.

Application filed October 5, 1885. Serial No. 179,046. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY KENNETH AUSTIN, a subject of the Queen of Great Britain, residing at Carn Brea Villa, Washwood Heath Road, Saltley, in the county of Warwick, England, have invented certain new and useful Improvements in Axle-Boxes, of which the following is a specification.

This invention has for its object improvements in axle-boxes, and relates especially to axle-boxes lubricated with oil, and in which the oil is applied to the axle by lateral pads, which are themselves fed by wicks dipping down into an oil reservoir or chamber beneath.

I provide the oil-reservoir chamber with a removable sheet-metal cover which extends horizontally from end to end of the box. At the ends it fits the box closely, but at the sides apertures are left for the wicks to pass freely. The oil is thus confined in the oil-chamber so that it cannot be thrown up out by the oscillation of the carriage, but can only be raised by the capillary action of the wicks. A cup is provided in the center of the cover or partition. It serves two purposes—as a receptacle for impurities, and as a socket or holder to receive a coiled spring by which the lubricating-pads are pressed up to the axle. The pads, which, as heretofore, are of felt, are attached to the inner side of a semi-cylindrical holder of sheet metal. There are slits in the sides of the holder, through which the feeding-wicks are passed. A hollow conical stud is fixed to the under side of the pad-holder. It enters within the coiled spring, and it serves to keep the holder in place, the spring itself being held by the socket which receives it. The oil-receiver is made to project from the end of the axle-box, and here an aperture closed by a screw-plug is provided. By removing the plug it is easy to ascertain if the box is sufficiently supplied with oil. To exclude dust from the box, I provide a dust-shield. It is inserted into a groove in the outer box. This shield consists of plates of carbonized fiber, hard wood, or other suitable material. It is made in two parts which close together and embrace the axle between them. One part is composed of two outer plates of U form superposed, but kept apart by a middle thick-

ness inserted between them at the bottom. The other part has a central portion of U form, but inverted, and to this there are fixed on either side blocks similar to the middle thickness of the first part. These parts fit together and inclose a circular space by which the axle passes between them. A spring tends to close the parts together, and it keeps the axle lightly nipped.

In order that my said invention may be fully understood and readily carried into effect, I will proceed to describe the drawings hereunto annexed.

In the drawings, Figure 1 is a plan, Fig. 2 is a longitudinal section, Fig. 3 is a transverse section, and Fig. 4 is an end elevation, of an axle box constructed in accordance with my invention. Fig. 5 is a front elevation, and Fig. 6 is a side elevation, of the dust-shield.

The journal A of the axle is inclosed by the cover B and the outer box or case, C, the lower part of which forms the oil chamber or receiver. The parts B and C are held together by means of bolts. The weight of vehicle is transmitted to journal by means of the rocking bearing D, which allows the axle-box to keep its correct position when running round curves. The weight of vehicle may, however, also be transmitted to the journal by means of a bearing which does not rock. It should have on its back and sides suitable channels for distributing the oil when poured into the axle-box.

The lubrication of the journal is effected by means of the lubricating-pads E E, which are constantly saturated with oil contained in the bottom of chamber C by means of the siphon-wicks F F attached to them. The lubricating-pads are held in correct position by means of a solid semi-cylindrical frame, G, this frame being kept in position by the journal A and spring I I, which surrounds the stud G' on the under side of the frame G.

The lower portion of the oil-chamber C is divided by the removable wrought-iron cover plate or partition K, which rests on supports in the part C, and has fixed into it at the center a circular cup, M, in which the lubricator-frame spring is contained. This loose division-plate receives and retains the oil which descends from the journal after it has completed



the lubrication. Any deleterious grit or sediment which this oil may contain collects in the cup M, and the heavy particles settle in the bottom, or are deposited on the dished surface of the plate K, while the clear oil flows back into the main oil-chamber. This division-plate also baffles back the sudden rush of oil to the end of axle-box when passing over uneven roads, which would otherwise cause the oil to escape from the axle-box.

When the axle-box has been running for any length of time, the oil-chamber will require to be cleaned out. The division-plate is then easily removed from its position, so that access may be had to the oil-chamber.

The axle-box is entirely closed around the axle by means of the dust-shield L, which works in grooves formed for its reception in cover B and oil-chamber C.

The dust-shield L is formed of plates of carbonized fiber, hard-wood, or any other suitable material.

As represented in Figs. 5 and 6, the lower part of the dust-shield is composed of three plates, L', L<sup>2</sup>, and L<sup>3</sup>, fixed together. L' and L<sup>3</sup> are of U form, and have sides or horns which project up on either side of the axle and extend above it; but the central part, L<sup>2</sup>, is of a width equal only to the diameter of the axle, and does not extend above its center. The side horns of the parts L' and L<sup>3</sup> are notched at their upper ends to receive a cross-bar, L<sup>4</sup>, which serves to support a spring, L<sup>5</sup>. The upper portion of this dust-shield is also in three parts which are fixed together. The external parts, L<sup>6</sup> and L<sup>8</sup>, are similar in form to L<sup>2</sup>, while the central part, L<sup>7</sup>, is similar to L' and L<sup>3</sup>. By the operation of the spring the

upper and lower parts of the dust-shield are drawn into close contact with the axle, gently clipping it, and thus securing the whole axle-box from entrance of dust.

The oil-chamber C has at the front a projection, N, fitted with a screw, O, and is arranged so that the quantity of oil remaining in bottom of chamber C may at any time be ascertained. The cover B is also fitted with a screw, P, for the purpose of supplying the axle-box with oil.

I claim—

1. In an axle-box, the removable division-plate or partition K, closing the oil-chamber below the journal from end to end, and having apertures for the passage of the siphon-wicks F, and a cup, M, serving to receive a spring, I, and also as a receptacle for the oil descending from the journal, substantially as described.

2. In an axle-box, the semi-cylindrical frame G, carrying two side pads, E E, having a space between them beneath the axle, and the siphon-wicks F F, supplying the side pads, substantially as and for the purpose described.

3. The combination, with the axle-box, of the dust-shield consisting of the plates L' L<sup>3</sup> L', of U form, the plate L<sup>2</sup>, fixed to the plates L' L<sup>3</sup>, the plates L<sup>6</sup> L<sup>8</sup>, fixed to the plate L<sup>7</sup>, and the spring by the action of which the dust-guard is caused to nip the axle, substantially as and for the purpose set forth.

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