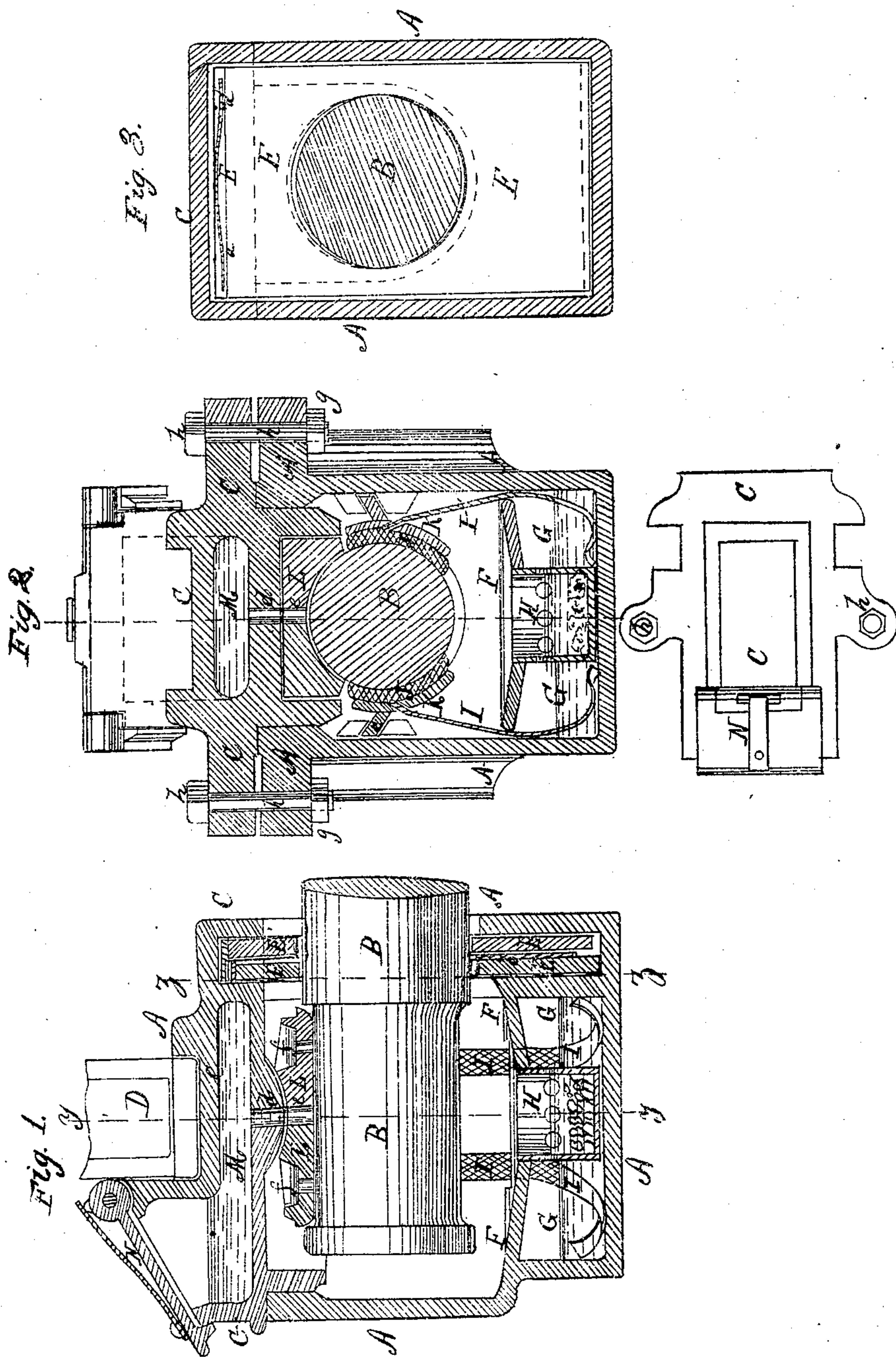


L. A. Dochez.

Axle-Box.

N^o 72821

Patented Dec. 31, 1867.



Witnesses.
 Theo Imeche
 W. Freuen

Inventor.
 L. A. Dochez
 Per Munnell
 Attorney

United States Patent Office.

LOUIS A. DOCHEZ, OF NEW YORK, N. Y.

Letters Patent No. 72,821, dated December 31, 1867.

IMPROVEMENT IN AXLE-BOXES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, LOUIS A. DOCHEZ, of New York, in the county and State of New York, have invented a new and improved Railroad-Axle Box; 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 part of this specification.

Figure 1 represents a longitudinal sectional view of my improved axle-box, the plane of section being indicated by the line *x x*, fig. 2.

Figure 2 is a vertical transverse sectional view of the same, the plane of section being indicated by the line *y y*, fig. 1.

Figure 3 is a vertical transverse sectional view of the same, the plane of section being indicated by the line *z z*, fig. 1.

Figure 4 is a plan or top view, on a reduced scale, of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new journal-box for railroad-axles, and its object is to prevent the waste of oil or other lubricating-material, to keep the dust from entering the box, and to make the lubricating-device self-indicating, so that the deficiency of oil can be ascertained at a glance.

The invention consists, first, in arranging an oil-chamber under a false bottom in the axle-box, and in connecting it, by means of wicks, with lubricating-pads pressed against the axle. The false bottom is made concave, so as to be lowest towards the centre. In the centre it is perforated, to receive a box, open on top, said box being for the purpose of collecting the drippings from the axle. Any impurities dripping off the axle will collect at the bottom of the box, while the pure oil may escape into the oil-chamber, through holes arranged in the sides of the box near to its top.

The invention consists, second, in securing the lubricating-pads to concave blocks, which are, by their own weight, pressed against the axle, and which can consequently accommodate themselves to any irregularities of the axle.

The invention consists, third, in a device for closing the rear end of the axle-box, so as to prevent dust from entering around the axle, and between the same and the surrounding edges of the box. This device is composed of two wooden or other rings, each having a circular central opening to admit the axle, and both pressed from opposite sides against the axle by a spring attached to one of the rings and acting upon both.

The invention finally consists in the arrangement above the axle of a reservoir for oil or grease, which has a hole in its bottom, closed by a sulphur plug. If the oil in the lower compartment is used up the axle becomes heated, melting the sulphur, and releasing the oil or grease in the upper compartment. The height of the contents in the upper compartment can be easily inspected from the outside, by means of a lid, or otherwise, and if decrease of the same is noticed, it is evident that there is no more oil in the lower compartment, and that the same has therefore to be refilled.

Complete exhaustion as well as a too plentiful supply of lubricating-compound is thus avoided by the use of my improved axle-box.

A represents the shell or casing of an axle-box, made of cast iron or other suitable material, of ordinary or suitable form or shape. B is the end of the axle. The same is fitted through the open rear end of the box, and sustains the cover C of the same, upon which the spring D, fig. 1, is secured, by which the body of the car is supported. The rear end of the box A is closed by means of two thin plates, E E', which are made of wood, or other suitable soft material, and which are perforated, to allow the axle to pass through. These two plates are guided in grooves provided in the sides and bottom of the box, and to the lower or upper edge of one of them is secured a spring, *a*, as shown in fig. 3. This spring forces the plate E, to which it is not attached, against the under or upper side of the axle, and draws the plate E', to which it is attached, upon the axle, and thus the axle is completely enclosed by the plates, and no dust or other impurities can enter the box. A leather plate, *b*, is secured to one of the plates E E', for the purpose of preventing the wood from being split by friction. Above the bottom of the box A is arranged a concave false bottom, F, whereby an oil-chamber, G, is provided. In the centre of the false bottom is a hole, through which a vessel, H, is inserted, to receive the drippings from

the axle. The sides of the vessel H are perforated near the upper edge, as shown, so that the contents of the vessel H may flow back into the chamber G. The oil is conducted, by means of wicks I I, which fit through holes in the false bottom F, to the lubricating-pads J, which are secured to the concave faces of blocks K, as shown. The blocks are provided with stems *c*, as shown in fig. 2, which fit into an inclined groove provided in the side of the box.

The pads J are made of worsted, and are secured to the faces of the blocks, and as the blocks are guided loosely in the grooves, the pads are pressed, by the weight of the blocks K, against the axle. Directly upon the axle, between the same and the cover C of the box, is interposed a block, L, made of brass, Babbit metal, or other suitable material. The lower surface of the block L is concave to fit the axle, as shown in fig. 2. The cover C of the box A is made hollow, forming an oil or grease-reservoir, M. The bottom of this reservoir is provided with one hole, *d*, which is continued through the block L, so that the grease will flow through this hole upon the axle. The hole *d* in the block L is closed by a plug, *e*, of sulphur or other suitable material, which will melt at a certain degree of heat. If the pads J are no more supplied with oil from the wicks, the axle will become heated, and by the heat thus created the sulphur plug will be molten. The oil in the reservoir M will then be liberated, and can flow upon the axle. At the ends of the block L may be arranged some cups, *f f*, to hold oil that may have flowed from the reservoir M through the hole *d* upon the block L, while the plug *e* was not yet dissolved. The cover C is provided with a suitable lid, N, through which the height of the oil or grease in the reservoir can be ascertained.

When it is seen that the reservoir is being emptied, it is certain that the plug *e* has been dissolved, and that therefore the oil-chamber G is empty. The box will then have to be taken off the axle, which is done by unscrewing the nuts *g* from the bolts *h*, whereby the cover C is secured to the box A, and by then drawing off the box.

I claim as new, and desire to secure by Letters Patent—

1. The arrangement in the axle-box A of the concave false bottom F, having central opening, vessel H, oil-chamber G, pads J, and wicks I, as herein described for the purpose specified.
2. The vessel H, fitted through a hole in the false bottom F into the oil-chamber G, and provided with holes near the upper edge, made and arranged as described, for the purpose of collecting the drippings from the axle, and of separating the dust and impurities from the oil.
3. The lubricating-pads J, secured to concave blocks K, which are provided with stems or ribs *c* guided in inclined grooves, substantially as and for the purpose herein shown and described.
4. An auxiliary oil or grease-reservoir, M, arranged above an axle in a journal-box, and provided with a fusible plug which will melt by the heat of the axle, when the same is no more supplied with lubricating-substance, as set forth.
5. The oil-chamber G, vessel H, wicks I, pads J, and blocks K, when arranged, as described, in combination with the perforated block L, hollow cover C of an axle-box, and with the plug *e*, which is soluble by the heat of the axle, when the same is no more supplied with oil, all made and operating substantially as herein shown and described.
6. The plate E E', when arranged as described, and when combined with the spring *a*, grooved axle-box A, and axle B, all made and operating substantially as herein shown and described.

LOUIS A. DOCHEZ.

Witnesses:

WM. F. McNAMARA,
ALEX. F. ROBERTS.