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Patented Dec. 13, 1898.

G. W. LEWIS & LE ROY C. GODWIN.

CAR AXLE JOURNAL BOX.

(Application filed Dec. 15, 1897.)

(No Model.)

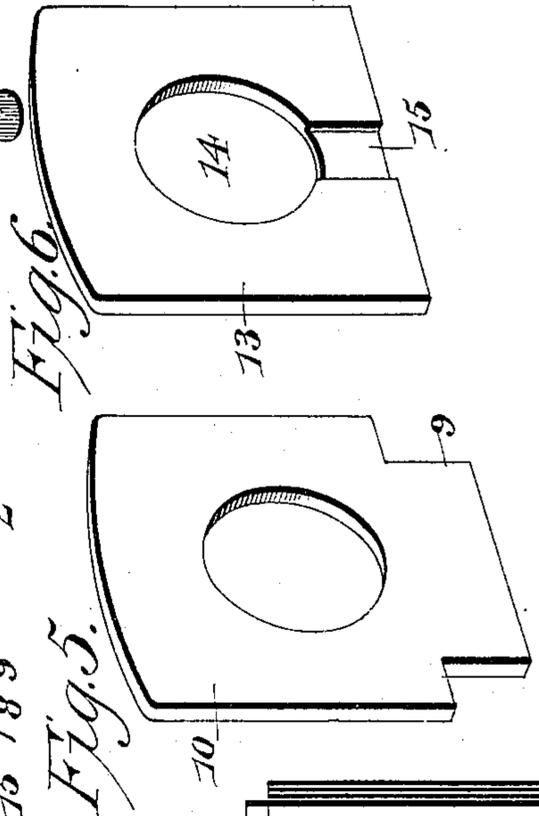
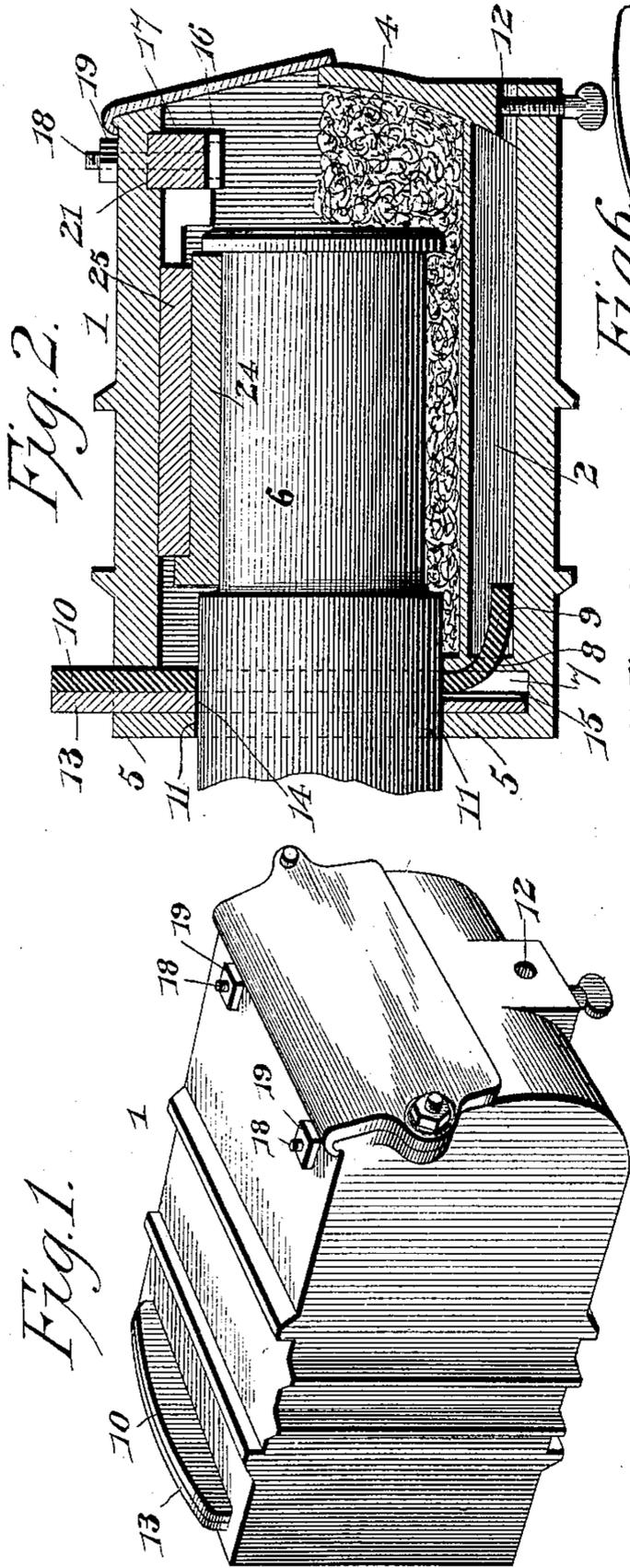


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Witnesses

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By their Attorneys,

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UNITED STATES PATENT OFFICE.

GEORGE W. LEWIS AND LE ROY C. GODWIN, OF PORTSMOUTH, VIRGINIA,
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CAR-AXLE JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 615,724, dated December 13, 1898.

Application filed December 15, 1897. Serial No. 662,040. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. LEWIS and LE ROY C. GODWIN, citizens of the United States, residing at Portsmouth, in the county of Norfolk and State of Virginia, have invented a new and useful Car-Axle Journal-Box, of which the following is a specification.

Our invention relates to car-axle journal-boxes, and has for its object to provide an improved construction and arrangement of parts for maintaining the journal in an efficiently-lubricated condition and to provide improved means for catching waste oil carried inwardly by the journal and conveying it into a waste chamber or receptacle forming a part of the journal-box.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a preferred embodiment of our invention, showing the journal-box detached from the usual pedestal and contiguous supporting devices. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is an outer end view, partly in section. Fig. 4 is a view of the inner end of the journal-box. Fig. 5 is a detail view in perspective of the flexible dust-guard. Fig. 6 is a similar view of the rigid dust-guard.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a journal-box having a centrally-raised or longitudinally-ridged floor or bottom of hollow construction to form an oil receptacle or chamber 2, the ridge or apex of said floor being arranged longitudinally of the box to provide lateral oil-receiving depressions upon opposite sides thereof in which the lubricating material may be stored for subsequent absorption by the packing or waste 4.

The inner end of the journal-box is closed by a wall, forming a dust-collar 5, of which the opening for the reception of the axle-journal 6 is circular to fit approximately snugly said journal, and in this collar is formed a dust-chamber 7, of which the outer wall is provided with a transverse downwardly and out-

wardly inclined slot 8 for the reception of a tongue or extension 9 on the lower end of a flexible dust-guard 10, of leather or equivalent material. This dust-guard, as in the ordinary construction, is provided with an opening 11 for the reception of the axle-journal, and the tongue or extension at its lower end is extended forwardly and downwardly through the slot in the front wall of the dust-chamber to occupy a position within the waste-chamber 2 in the floor of the journal-box, whereby any oil which is fed inwardly upon the journal until it comes in contact with the inner surface of said flexible dust-guard is conveyed downwardly and outwardly by said guard through the port or passage in the front wall of the dust-chamber and into the waste-chamber, from which at suitable intervals the contents may be withdrawn by means of a plugged or valved opening 12, as clearly set forth in our former application, Serial No. 612,345, filed November 16, 1896.

In cooperation with the above-described flexible dust-guard we use an inflexible or rigid dust-guard 13, of wood, metal, or equivalent material, having a suitable opening 14 for the reception of the journal and being arranged in contact with the inner surface of the flexible guard. This rigid dust-guard preferably extends to the bottom of the dust-chamber, and it is provided in its outer surface, or that surface which is contiguous to the flexible dust-guard, with a vertical oil-channel 15, thus forming a vertical channel or passage between the dust-guards to allow oil which accumulates in the dust-chamber to rise between the guards until its surface is in the plane of the transverse slot in the outer wall of said chamber, when by contact with the flexible guard it will be led into the waste-chamber 2.

In connection with the lubricating devices we provide for constructing the dust-collar with a round opening which approximately fits the axle-journal to avoid the elliptical or vertically-elongated opening in the inner end of the journal-box, as in the present practice. The advantage to be derived from the use of a round opening is that the depth of the oil-containing lower part of the box may be increased to provide for carrying a larger supply of oil in the box, and also it is obvious

that the oil and the means whereby it is conveyed can be kept closer to the under side of the axle-journal. In the ordinary construction of elongated opening the normal or operative position of the journal is at the upper end of the opening; but in introducing and removing the fittings of the journal-box, such as the brass 24 and the wedge or key 25, the journal-box must be elevated to relieve the axle of weight and arrange the axle-journal in the lower end of said opening in the dust-collar. Hence after arranging a journal in the box and allowing the weight to come upon the journal the downward movement of the box with relation to the journal separates the lower side of the opening in the dust-collar and at the same time removes the journal from the bottom of the box. This interval may be filled by waste or packing in order to keep the oil in contact with the journal; but an interval of from three-fourths of an inch to an inch in vertical measurement between the under side of the journal and the bottom of the opening in the dust-collar provides an extensive means of escape for the lubricating contents of the box and makes it difficult to carry a sufficient supply, by reason of the shallowness of the oil-receptacle, to last efficiently during an ordinary run.

In order to avoid the necessity for relatively moving the journal-box and journal in order to relieve the journal brass and key, we employ lugs 16, depending from the upper wall or top of the journal-box contiguous to the opening at the outer end thereof, said lugs being connected by a reduced neck portion 17 to form with the lugs a plate which is removably fitted in the journal-box, with means whereby it may be secured in place or removed with facility when the removal of the other parts of the bearing is required. Said means whereby the lug-plate is secured in the box consist of bolts 18, rising from said plate through openings in the upper wall or top of the box and fitted with nuts 19. Furthermore, the lug-plate is countersunk or embedded by means of a transverse channel 21 in the upper wall of the box, whereby it is firmly braced against forward and rearward displacement.

We are enabled by the construction described to bring the top of the oil-receiving depressions close to the plane of the under side of the journal and maintain a sufficient quantity of lubricant in said depressions to supply the journal for a considerable time without the risk of involving a material loss by reason of leakage through said journal-opening.

It will be understood that the means above described for securing the brass and key in place form no part of our present invention, but are simply illustrated in the drawings as showing devices adapted for allowing the dismounting of the axle-journal from the box without a previous relative vertical move-

ment of any material amplitude of the journal and box.

Having described our invention, what we claim is—

1. A journal-box having a dust-collar, recessed to form a dust-chamber, and also having in its floor a waste-chamber communicating with the dust-chamber by an opening in the outer wall of the latter, substantially as specified.

2. A journal-box having a dust-collar, recessed to form a dust-chamber, and also having a hollow floor forming a waste-chamber which is in communication with the dust-chamber by an opening in the outer wall of the latter, in combination with a dust-guard fitted in said dust-chamber and provided with a tongue extending through said opening and into the waste-chamber, substantially as specified.

3. A journal-box having a dust-collar, recessed to form a dust-chamber, and also having a hollow floor forming a waste-chamber which is in communication with the dust-chamber by a transverse slot in the outer wall of the latter, said slot being downwardly and outwardly inclined, and a flexible dust-guard fitted in said dust-chamber and provided with a tongue or extension fitted in said slot and projecting into the waste-chamber, substantially as specified.

4. A journal-box having a dust-guard, recessed to form a dust-chamber, and also having a hollow floor forming a waste-chamber which is in communication with the dust-chamber by a transverse slot in the outer wall of the latter, a flexible dust-guard fitted in said dust-chamber and provided with a tongue or extension projecting through said slot into the waste-chamber, and an inflexible guard arranged in contact with the inner surface of the flexible guard and having its outer face channeled to convey lubricating material to the plane of the slot in the outer wall of the dust-chamber, substantially as specified.

5. A journal-box having a dust-collar, recessed to form a dust-chamber, and also having a hollow floor forming a waste-chamber which is in communication with said dust-chamber by a transverse slot in the outer wall of the latter, and outer and inner flexible and inflexible dust-guards seated in said dust-chamber with an interposed oil-channel, a tongue or extension of the flexible guard being fitted in said slot in the outer wall of the dust-chamber and projecting into the waste-chamber, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

GEO. W. LEWIS.
LE ROY C. GODWIN.

Witnesses:

JOHN D. NEW,
F. W. CLARK.