

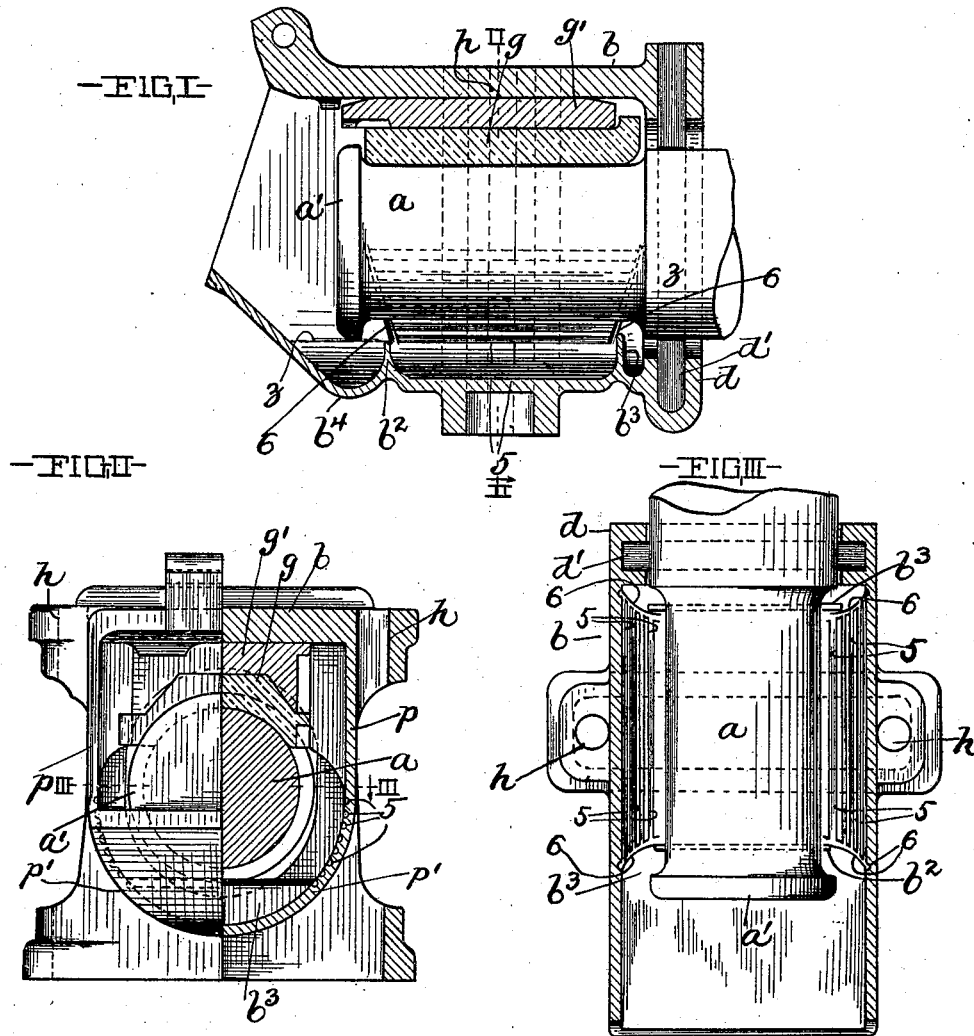
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Patented May 8, 1900.

J. R. RENIFF.
JOURNAL BOX.

(Application filed Feb. 8, 1900.)

(No Model.)



WITNESSES:

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JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 649,213, dated May 8, 1900.

Application filed February 8, 1900. Serial No. 4,540. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. RENIFF, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Journal-Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in journal-boxes for railway-cars.

The object of this invention is to reduce to a minimum the quantity of oil and waste or lubricating agency required for use in journal-boxes of the character indicated, to hold or sustain the waste in such a position relative to the journal as to effect the lubrication of the journal with the least possible expense in materials and labor, to prevent the carrying of waste upon the journal during the rotation of the latter, and to wring or squeeze the surplus oil out of waste that is carried from below the journal upwardly between the sides of the journal and the side walls of the journal-box.

With this object in view the invention consists in certain peculiarities of construction hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure I is a central vertical and longitudinal section of a journal-box embodying my invention, and this figure shows also an axle's journal that is to be lubricated within the box. Portions are broken away in this figure to more clearly show the construction. Fig. II is an outer end elevation, partly in transverse section, on line II II, Fig. I. Fig. III is a top plan in section on line III III, Fig. II.

Referring to the drawings, *a* designates an axle's journal that extends into and is to be lubricated within my improved journal-box, and *b* represents the casing of the box. The box at its rear end is provided with the dust-guard-forming holder *d*. The dust-guard is of any approved form and comprises packing *d'*, that embraces the axle at the rear end of the box. The box is provided with suitable means (not shown) for attaching it to the truck-frame of a railway-car, and the box in

the case illustrated has its side walls provided with bolt-holes *h*, (shown in dotted lines,) that accommodate the introduction of Bolts (not shown) employed in securing the box to a truck-frame. The bottom of my improved box forms the bottom of the oil-saturated-waste-receiving space below the journal-space and is arranged considerably above the lower end of the dust-guard holder, so as to form a shallower space below the journal, and thereby require less lubricant and waste in maintaining the axle properly lubricated.

By "journal-space" I mean the space actually occupied by a journal when the latter is in position within the box.

The upper portion of the side walls of the chamber of the box or casing are perpendicular, as shown at *p*, Fig. II; but the lower portions of the said walls curve inwardly or converge toward the bottom, as shown at *p'* in the said drawing, so as to avoid any unnecessary or superfluous space or objectionable corners in the waste-receiving space.

I would here remark that the waste before being placed in the box has been thoroughly saturated with oil and will not require additional oil when placed in the box, and if the waste has more oil than it can absorb the surplus oil will settle to and upon the bottom of the box between two partition-forming ribs *b²* and *b³*, formed upon and integral with said bottom and arranged a suitable distance apart longitudinally of the box below opposite ends, respectively, of the journal-space and extending transversely of the bottom between and contiguous to the converging portions *p' p'* of the side walls of the box. These ribs confine and prevent displacement of waste placed between them below the axle's journal. The rear rib *b³* is higher than the forward rib *b²*, so that should oil be extravagantly used there is no liability of an overflow at the rear rib; but the overflow would be over the forward and lower rib into the shallow dish *b⁴*, formed in the bottom of the box below the space occupied by the journal's outer end and forward of the said last-mentioned rib, and the bottom of the said dish is extended forwardly and upwardly to the forward extremity of the box, so as to hold any waste placed upon the bottom at the forward end of the said dish

against the collar a' , formed upon the journal's outer end. The presence of oil in the said dished portion of the journal-box's bottom would indicate extravagant use of oil, and the depression in the bottom formed by the said dish accommodates the lifting of the box, as required to accommodate the removal of the ordinary bearing-piece g and key g' at the top of the journal, in that it affords the necessary space for accommodating the location of the journal's outer collar a' during the removal and assemblage of the said parts g and g' .

It is obvious that in my improved box before any oil can run over the rear and higher rib, and hence out at the back end of the box through the packing of the dust-guard, it must first overflow at the lower and forward rib, and not until the oil has reached the level indicated by the broken line z could it flow outside of the box, and an overflow would be caused only by a very extravagant and tortuous use of oil.

The construction thus far described is substantially the same as that disclosed in an application for United States Letters Patent, Serial No. 696,843, filed November 19, 1898, for which the Letters Patent No. 642,490 were issued January 30, 1900.

The important feature of my present invention consists in providing the inner sides of the lower and downwardly-converging portions of the side walls of the box with channels 5, that are arranged, preferably, horizontally, or approximately so, and extend longitudinally of the said walls. The box illustrated has each of its side walls provided with a series of parallel channels 5, arranged longitudinally of the said wall, and the lowermost channel of the said series of channels is arranged between the ribs or partitions b^2 and b^3 —that is, the said lowermost channel has opposite ends thereof terminating within the space formed between the said ribs, so that any oil received by the said channel shall run into the said space and not over or at the outer sides of the said ribs. Each channel of each of the aforesaid series of channels above the lowermost channel of the respective series has opposite ends thereof extending somewhat beyond opposite ends, respectively, of the channel next below, and each of the channeled walls at each end of the series of channels of the said wall is provided with an upright groove or channel 6, that is in open relation with the longitudinally-arranged channels of the said series of channels—that is, two upright channels 6 and 6 are formed at opposite ends, respectively, of and connected with each of the aforesaid series of channels and converge downwardly and discharge at their lower ends into opposite ends, respectively, of the space or chamber formed between the ribs b^2 and b^3 . The uppermost channel of each series of channels is arranged, preferably, at or in close proximity to the horizontal plane that contains the axis

of the journal, and the said channel extends, preferably, the full length, or approximately the full length, of the bearing-surface of the journal, and consequently the downwardly-converging grooves or channels 6 and 6 terminate at their upper ends at opposite ends respectively of and communicate with the said uppermost channel.

When the journal is revolving waste in small quantities is carried upwardly and works its way in under the bearing g and results in what is known as a "hot box" in the destruction of the bearing and sometimes in the destruction of the journal, and not infrequently in the loss of a car or several cars. A lesser trouble is also caused by waste following the journal and afterward forced forwardly toward the front end of the box, where it ceases to properly lubricate the journal.

By the provision of the channeled walls hereinbefore described in connection with the journal the waste is prevented from following the journal. Any waste carried up between the journal and the channeled walls will be arrested between the journal and the said walls by engagement with the channels in the walls, and the bunching or accumulation of waste between the journal and the said walls will result in the wringing or squeezing between the journal and the said walls of surplus oil from the said waste, and instead of committing injury will improve the lubrication. The surplus oil wrung or squeezed from the said waste will be received and conducted by the series of channels 5 into the upright grooves or channels 6, and thence flow downwardly into the chamber formed between the partitions b^2 and b^3 . The upright grooves or channels 6 are preferably gradually increased in width from their upper ends downwardly and are widest at their lower ends. Obviously by the arrangement of grooves or channels hereinbefore described the oil flowing into the upright channels 6 increases in volume as it reaches the lower ends of the said channels 6, and the importance, therefore, of gradually increasing the capacity of the said channels 6 toward their lower ends is obvious. I would remark also that the channeled portions of the side walls of the box are arranged, preferably, somewhat eccentrically to the journal, and so that the width of the space between the channeled portion of each of the said walls and the journal shall gradually decrease upwardly, and thereby cause a bunch of packing carried up within the said space to wedge, as it were, or facilitate its entrance into and detention by the aforesaid channels.

By the construction hereinbefore described it will be observed that means for preventing the upward carrying of waste is provided at each side of the journal, that the channeled wall at one side arrests or checks the upward movement of waste when the journal is rotating in one direction, and the channeled wall at the opposite side arrests or checks

the upward movement of waste when the journal is rotating in the opposite direction. It will be observed also that the hereinbefore-described relative arrangement of the 5 channeled portions of the walls of the box and the oil-receiving chamber formed between the partition-forming ribs b^2 and b^3 is important, because by the said arrangement oil wrung or squeezed from waste between 10 the journal and the said walls is not permitted to escape at the rear end of the box or become otherwise wasted.

What I claim is—

1. In a journal-box of the character indicated, two internal ribs formed upon the bottom of the box below opposite ends, respectively, of the journal's space and extending transversely of the bottom between and contiguous to the side walls of the box, and 20 means for wringing or squeezing oil-containing waste carried up between the journal and the said walls and conducting the oil wrung or squeezed out of the waste into the space formed between the aforesaid ribs.

2. A journal-box of the character indicated, having the lower portions of its side walls converging downwardly and provided, upon their inner sides, with a series of channels extending longitudinally of the box and arranged 30 to cooperate with the journal in preventing waste from being carried up between the said journal and channeled walls, substantially as and for the purpose set forth.

3. A journal-box of the character indicated, having its side walls converging downwardly and provided with a series of horizontally-arranged or approximately horizontally-arranged channels extending longitudinally of the box, and upright channels connecting the 40 said longitudinally-arranged channels and having their lower ends arranged to discharge into the lower portion of the box below the journal-space.

4. A journal-box of the character indicated, having the lower portions of its side walls converging downwardly and provided, respectively, with a series of channels arranged longitudinally of the box; and upright channels arranged at the ends of and connected with 50 the channels of the aforesaid series of channels and gradually enlarged in capacity to-

ward their lower and discharging ends, substantially as and for the purpose set forth.

5. A journal-box of the character indicated, having the lower portions of its side walls converging downwardly, two internal ribs formed upon the bottom of the box below opposite ends, respectively, of the journal-space and extending transversely of the bottom between and contiguous to the side walls of the box, 60 a series of channels formed in and longitudinally of the aforesaid lower portions of the side walls, and upright channels formed in each of the said walls and connecting the longitudinally-arranged channels of the respective wall and leading downwardly and arranged to discharge at their lower ends into the space formed between the aforesaid ribs, substantially as and for the purpose set forth.

6. A journal-box of the character indicated, having the lower portion of the side walls converging downwardly; two internal ribs formed upon the bottom of the box below opposite ends, respectively, of the journal-space; two upright channels formed in each 75 side wall of the box and, converging from opposite ends, respectively, of the journal-space downwardly and arranged to discharge at their lower ends into the space formed between the aforesaid ribs, and a plurality of 80 channels formed in and arranged longitudinally of the aforesaid converging portions of the side walls and arranged between and connected with the first-mentioned channels, substantially as shown, for the purpose specified.

7. A journal-box of the character indicated, having the lower portion of its side walls converging downwardly and provided, upon their inner sides, with channels or recesses and arranged somewhat eccentrically to a journal 90 occupying the journal-space of the box, and the arrangement of the parts being such that the width of the space between the channeled or recessed portions of the said walls and the journal shall gradually decrease upwardly, 95 substantially as and for the purpose set forth.

Signed by me at Chicago, Cook county, Illinois, this 23d day of January, 1900.

JAMES R. RENIFF.

Witnesses:

HERMON F. COYKENDALL,
L. A. WHITE.