

C. W. HARVEY.

Railway Car Axle-Boxes.

No. 134,801.

Patented Jan. 14, 1873.

Fig. I.

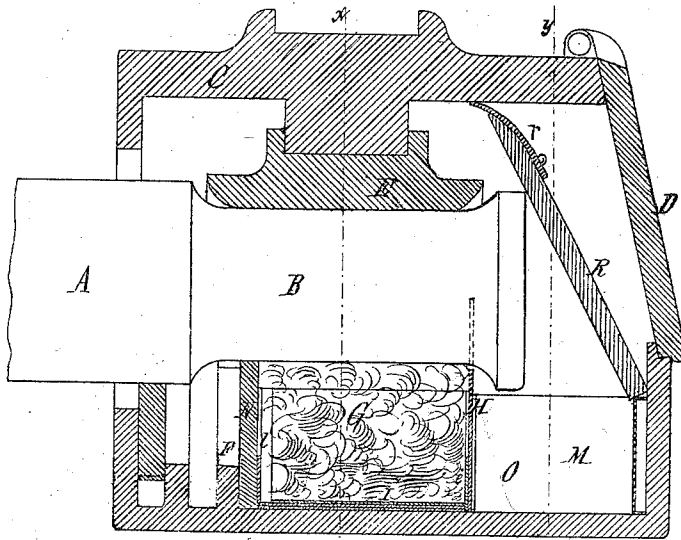


Fig. II.

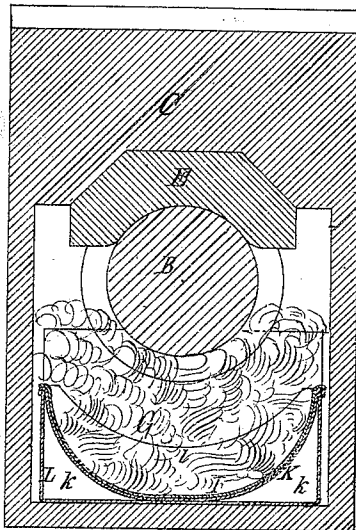


Fig. III.

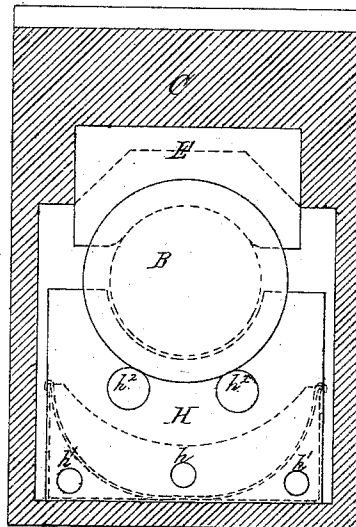
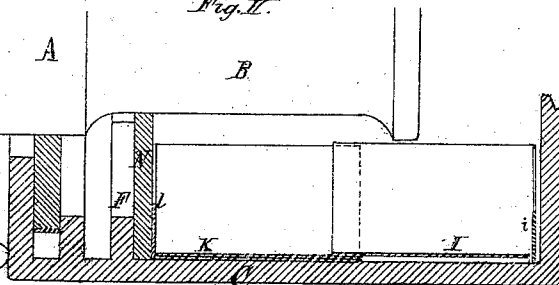


Fig. II.



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John J. Danner
Witnesses.

Chas W. Harvey
by Jay Dyatt ^{Inventor} atty

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Fig. V.

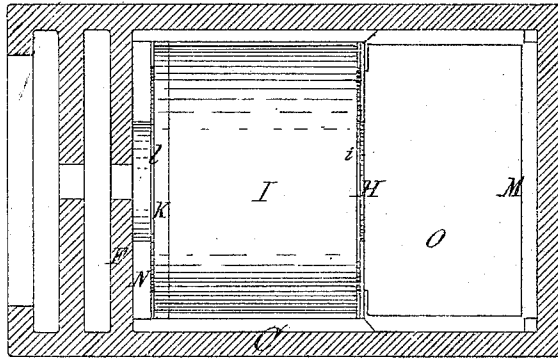


Fig. III.

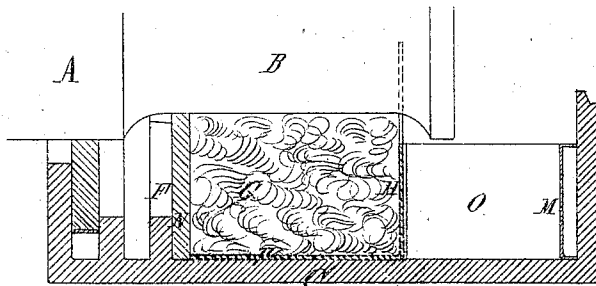


Fig. IX.

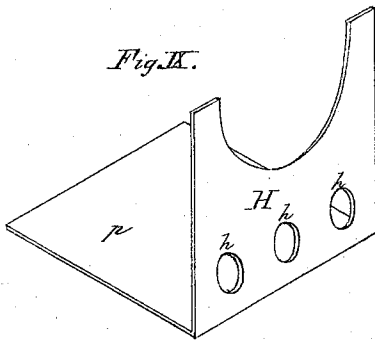


Fig. II.

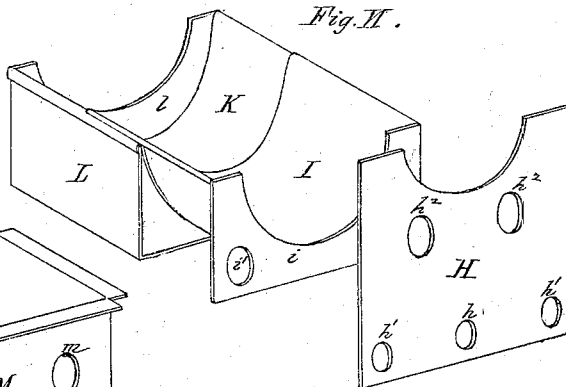
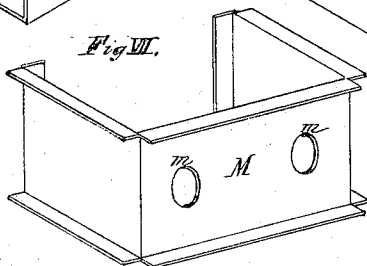


Fig. VII.



Edward Wilhelm
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Chas. W. Harvey Inventor.
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UNITED STATES PATENT OFFICE.

CHARLES W. HARVEY, OF BUFFALO, NEW YORK.

IMPROVEMENT IN RAILWAY-CAR AXLE-BOXES.

Specification forming part of Letters Patent No. 134,801, dated January 14, 1873.

To all whom it may concern:

Be it known that I, CHARLES W. HARVEY, of the city of Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Devices for Lubricating Railroad Journals, of which the following is a specification:

My invention relates to ordinary railroad axle-boxes, in which cotton-waste or a similar material is employed for feeding the oil to the journal. Sometimes the space in the axle-box below the journal has been entirely filled with cotton-waste, which would at once absorb all of the oil applied at a time and feed the same at first very fast to the journal, thereby causing a loss of oil by swashing through the joints and openings of the axle-box, while the supply of oil would gradually decrease and become less perfect, thus necessitating a frequent re-filling of the box. The cotton-waste, by the movements of the journal, also tends to settle and pack in the corners of the box, thereby destroying the close contact between the waste and the journal which is essential to a good lubrication. My invention is designed to remedy these defects; and consists, first, in the combination and arrangement transversely in the axle-box, below the journal, of a movable perforated partition or follower and a suitable stay-piece or fastening device, said partition being drawn to the front of the axle-box for the purpose of introducing the cotton-waste, wool, or other packing material, when it is moved back under the front end of the journal, so as to pack the cotton-waste tightly under the latter, the partition being held in this position by the stay-piece or fastening device placed between it and the front of the axle-box, whereby an open space or compartment is formed in the latter, which serves as a reservoir, in which the greater part of the oil is kept until gradually absorbed by the packing material and fed to the journal, thereby insuring a more uniform and pure supply of oil to the latter; second, in the combination, with the movable transverse partition, of a concave plate or trough fitting so as to slide thereon in a corresponding stationary trough arranged on the bottom of the axle-box under the journal, so that the packing material which is placed in said troughs tends, by the curvature of the same, to collect and pack tightly under the

journal, thereby insuring at all times the required close contact between the oil-feeding material and the journal, while at the same time the open spaces between the troughs and the bottom and sides of the axle-box are rendered available as oil-compartments; third, of a guard-plate, consisting of wood, metal, or other suitable material, arranged in the axle-box between the door and the journal, and provided at its upper edge with a flexible strip of leather, felt, or other flexible material fitting against the top of the axle-box, so as to catch the oil which is thrown from the front part of the journal and return it to the bottom of the box, thereby preventing the same from escaping through the joints of the door.

In the accompanying drawing, consisting of two sheets, Figure I is a sectional elevation of an axle-box provided with my improvements; Fig. II is a cross-section in line *x x*, Fig. I; Fig. III is a cross-section in line *y y*, Fig. I; Fig. IV is a fragmentary sectional elevation, showing the partition drawn to the front for filling in the packing material; Fig. V is a horizontal section, showing a plan view of the movable partition and concave plates; Fig. VI is a perspective view of the movable partition and concave plates; Fig. VII is a perspective view of the stay-piece; Fig. VIII is a fragmentary sectional elevation of an axle-box provided with a simple follower and stay-piece; and Fig. IX is a perspective view of this follower.

Like letters designate like parts in each of the figures.

A represents the axle; B, the journal; C, the housing; D, the cover or door thereof; E, the bearing-metal; F, the first partition near the rear end of the axle-box; and G, the packing material, consisting of cotton-waste, woolly rags, or other suitable material. All of these parts are old and well known. H represents the movable partition or follower, arranged transversely in the axle-box below the journal so as to rest on the bottom thereof, and separating the packing material from the main body of the oil. It is cut out at the top so as to fit under the journal, and provided, near the bottom, with perforations *h h* for the passage of the oil to the packing G, and, preferably, with openings *h*² or their equivalent, for facilitating the withdrawal of the

partition from the axle-box. I is the movable concave plate or trough, either firmly attached to the follower H or made separate therefrom, and stiffened by a low cross-piece, *i*, provided with perforations *i'*. K is the stationary concave plate, arranged on the bottom of the axle-box under the journal. It is preferably secured to a frame, L, provided with an end piece, *l*, for retaining it in its proper position on the bottom of the box with reference to the movable plate I. The plate K fits on the plate I so as to slide thereon, as clearly shown in Figs. IV and VI. N is a piece of felt arranged in the rear part of the axle-box against the partition F, in order to exclude the dust and other impurities from the packing material. M is the stay-piece or fastening device by which the follower is secured in its position under the journal. It consists, preferably, of an open rectangular frame, provided with openings *m* or equivalent for handling it in inserting and withdrawing.

The operation of this part of my improvement is as follows: The stationary trough K L is first introduced in the rear part of the box under the journal, when the movable trough I is inserted and engaged therewith. The trough I is fastened to the follower H when there is sufficient space in front of the journal to allow of the ready insertion thereof; otherwise the parts are made separate, as shown in the drawing, the movable trough I being placed in the front portion of the axle-box, as shown in Fig. IV, in which position its rear edge overlaps the front edge of the stationary trough K. The space below the journal is filled with waste, when the trough I is pushed back so as to pack the waste tightly under the journal, and the follower H introduced under the journal to retain the waste in this position, as shown in Fig. I. The stay-piece M is then placed in the front part of the axle-box so as to hold the follower H against the packing, whereby an open space, O, is formed in the box, which communicates, through the openings *h*¹ and *m*, with the spaces *k* under the concaves K and I. The oil is then introduced into the spaces O and *k*, whence it gradually passes through the openings *h* *h*¹ to the packing material, by which it is fed to the journal. In this manner the greater part of the oil is kept separate from the packing material until gradually absorbed thereby, whereby the oil is evenly fed to the journal, and loss by swashing prevented. The oil also remains purer

than when introduced directly into the packing material, where it commingles with the dust and other impurities contained in the latter.

The curvature of the concave plates I and K causes the packing to collect and settle under the journal instead of at the sides of the housing, whereby the same is always kept in close contact with the journal, and a good lubrication insured.

In Figs. VIII and IX is represented a simple follower, H, preferably provided with a base piece, *p*, for retaining it in an upright position, and held against the packing by the stay-piece M, so as to form an oil-compartment, O, in the axle-box in front of the journal, while the space behind the follower is entirely filled with packing material. R is the guard-plate, of wood, metal, or other suitable material, arranged in an inclined position in the axle-box between the door of the latter and the journal. Its lower end is shown resting upon the stay-piece M, while its upper end bears against the journal. *r* is the strip of leather, felt, or other flexible material attached to the upper end of the plate R, so as to form a tight connection between the latter and the top of the axle-box. Smaller strips of the same material may be attached to the sides and bottom of the plate R, if desired.

The oil which formerly was thrown from the revolving journal against the door of the axle-box, and escaped through the joints thereof, is caught by the guard-plate R, and returned to the compartment O.

What I claim as my invention is—

1. The combination and arrangement, in the axle-box and with the journal of a railroad-truck, of the perforated follower and partition H and stay-piece M so as to compact the packing material under the journal, and form an open oil compartment and reservoir in front of the same, substantially as hereinbefore set forth.

2. The combination, with the perforated bottom H, of the movable concave plate I and stationary concave trough K L, substantially as and for the purpose hereinbefore set forth.

3. The combination and arrangement in the axle-box, between the door thereof and the journal, of the guard-plate R, provided with the flexible strip *r*, substantially as and for the purpose hereinbefore set forth.

CHARLES W. HARVEY.

Witnesses:

EDWARD WILHELM,
JOHN J. BONNER.