(No Model.)

P. SWEENEY.

JOURNAL BEARING.

No. 421,783. Patented Feb. 18, 1890.

Fig. 1.

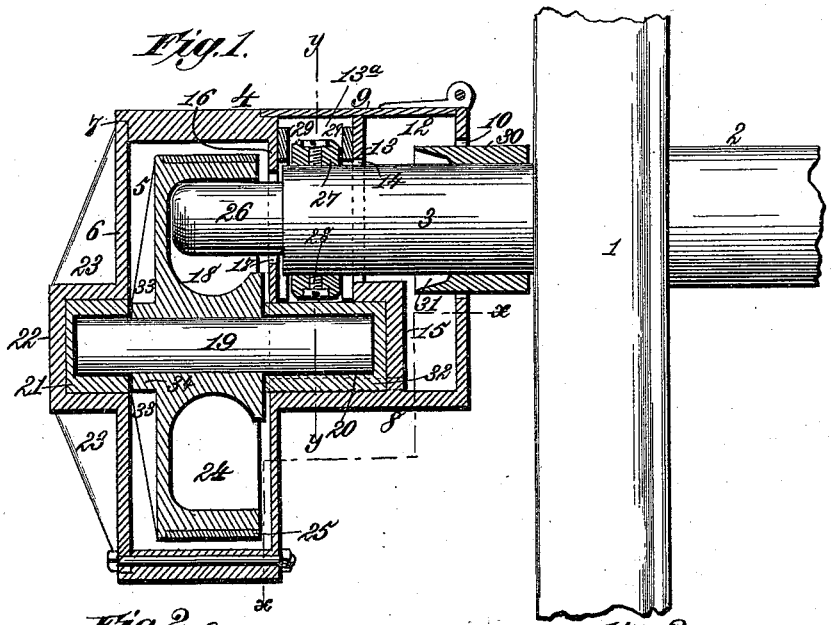


Fig. 2.

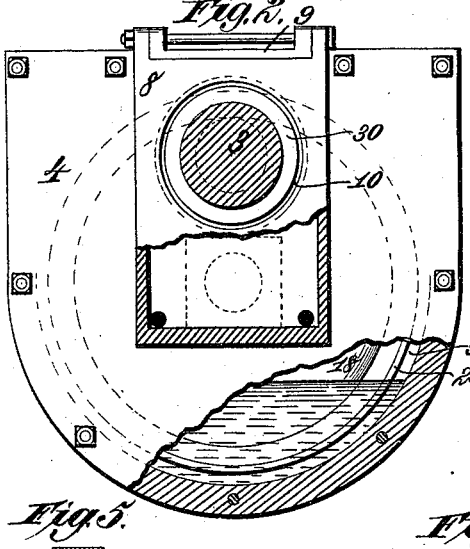


Fig. 3.

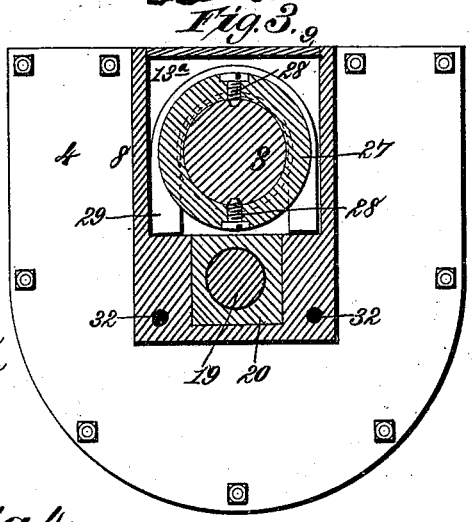


Fig. 5.

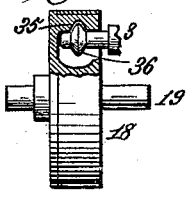
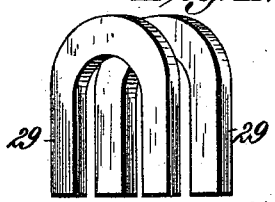
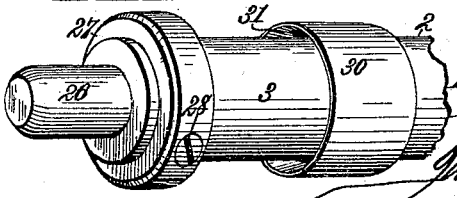


Fig. 4.





Witnesses.
Robt Ewett.
Percy B. Mills.

Inventor.
Peter Sweeney.
By
James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

PETER SWEENEY, OF NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES H. BOYER, OF BROOKLYN, NEW YORK.

JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 421,783, dated February 18, 1890.

Application filed October 12, 1888. Renewed January 4, 1890. Serial No. 335,924. (No model.)

To all whom it may concern:

Be it known that I, PETER SWEENEY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Journal-Bearings, of which the following is a specification.

My invention relates to journal-boxes for railway-cars, and the purpose thereof is to provide a simple, novel, and economical construction whereby the friction shall be diminished, the heating of the bearings avoided, and the movement of the car rendered much more easy and equable.

It is a further purpose of my invention to provide a construction whereby lateral displacement of the parts will be prevented, a thorough lubrication secured, and leakage and loss of oil or other lubricant avoided.

The invention consists to these ends in the novel features of construction and new combinations of parts hereinafter fully set forth, and then definitely pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal vertical section taken in the axial line of the car-journal. Fig. 2 is a transverse section upon the line *x x*, Fig. 1. Fig. 3 is a similar section on the line *y y*, Fig. 1. Fig. 4 is a detail perspective of the saddle-plates and the journal removed from the box and separated. Fig. 5 is a detail view showing a modified construction.

In the said drawings the reference-numeral 1 denotes the car-wheel mounted on an axle 2, having an outwardly-projecting journal 3, these parts being of any ordinary construction, save in those respects hereinafter pointed out.

The body of the car is supported upon an axle-box 4, consisting of a shell having the construction hereinafter described, and cast, with the exception of the front plate and cover, in a single piece. The general form of the axle-box 4 is nearly semicircular in front elevation, forming a chamber 5, which is closed in front by a plate 6, set in a gain 7, and secured in place by bolts and nuts. Projecting from the rearward face of this compartment is a rectangular extension 8, which drops somewhat below the center of the main portion and is of equal height, but comparatively narrow width, and is cast integral with the main portion 4. Upon the top of this extension is hinged, in any suitable manner, a cover 9, by which access is given to the interior.

In the rear wall of the extension 8 is formed an opening 10, to admit the car-journal 3, and within the chamber 12, formed by said extension, is cast a transverse wall 13, having an opening 14. Concentric with this opening 10, and below the former opening, is cast a rectangular rearward projection 15, the purpose of which will be shown hereinafter. The extension 8 is divided from the main portion by a wall 16, parallel with the wall 13, and having a similar opening 17.

Within the chamber 5 is arranged a wheel-bearing 18, supported upon an axis 19, one end whereof lies in a box 20, formed of Babbitt or other metal, and lying in the lower part of the extension 8, its end being received by the rectangular projection 15, while the other end projects through a rectangular opening in the wall 16. The outer extremity of the axis lies in a box 21, which is supported in a bearing 22, cast upon the front plate 6, which is strengthened by ribs 23, which radiate from the said bearing. The wheel 18 is cast with an annular recess 24, hollowed or concaved around the hub to lighten the construction, and provided with a strong peripheral band 25, which is shrunk on to give additional strength.

The journal 3 is introduced within the box through the openings 10, 14, and 17, and its diminished extremity 26 enters the recess 24 and sustains the weight of the box and its superstructure.

Upon the journal, close to the shoulder formed by the diminished end 26, is placed a collar 27, formed of suitable metal and clamped in place by screws 28, which pass through the collar and into slight depressions in the journal, as shown in Fig. 3. This collar lies in the compartment formed by the two walls 13 and 16, and saddle-plates 29 are placed upon the axle upon each side of the collar to take up the wear and prevent undue lateral movement. These saddle-plates are shown in Figs. 1 and 3 and in detail in Fig. 4, and are formed of any metal suitable for the pur-

pose. They fit within the chamber 13ª, resting against the walls 13 and 16, and sustain the end-thrusts of the axle and take up the wear of the collar 27.

Upon the journal 3 is mounted a collar 30, lying partly within the opening 10 and having a flaring recess 31 in its end. This collar is intended to prevent the loss of oil by splashing through the opening 10 and the entrance of dust and dirt.

The oil is mainly contained in the bottom of the chamber 5, and is continually carried up to the journal by the revolution of the wheel-bearing, and from the latter it permeates to all the bearing-surfaces. The escape of the oil is in a great measure prevented by the walls 13 and 16, as well as by the outer or rear wall of the rearward extension 8.

In order to provide for the return of the oil to the main compartment 5, openings 32 are formed in the interior walls 13 and 16, as shown in Figs. 2 and 3 and in dotted lines in Fig. 1.

In order to strengthen the wheel-bearing 18 against lateral thrust of the journal, radial ribs 33 are formed on its outer face, running from the periphery to the projecting hub 34. The wheel is prevented from yielding to lateral thrust by the confinement of the ends of its axis in the boxes 20 and 21, which are held one by its seat in the front plate and the other by the rectangular rearward projection 15 and the wall 16. I may form a channel 35 in the inner face of the peripheral part of the wheel-bearing 18, and form or mount a collar 36 on the end of the journal 3 to run in said channel, as shown in Fig. 5.

What I claim is—

1. In a journal-bearing, the combination, with a casing cast in a single piece and consisting of a main compartment and a rearward extension separated therefrom by a wall having an opening for the journal and passages for the oil, of a journal entering the main compartment through said extension, and a wheel-bearing having an annular recess receiving the end of the journal, substantially as described.

2. In a journal-bearing, the combination, with a casing having a main compartment and a rearward extension separated by parallel walls into two chambers, both communicating by oil-openings with the main compartment, of a wheel-bearing journaled in boxes, one of which is seated in a removable front plate and the other in the rear extension, a journal lying in an annular recess in the wheel-bearing, a collar clamped on the journal, and saddle-plates lying on each side of said collar in a chamber formed by interior parallel walls of the extension, substantially as described.

3. In a journal-bearing, the combination, with a casing consisting of a main compartment having a rearward extension containing parallel interior walls, the latter pierced with oil-openings communicating with the main compartment, of a wheel-bearing having a peripheral band shrunk thereon and provided with an annular recess, a journal passing through the rear extension and entering said recess, a collar clamped on said journal, saddle-plates resting on the latter on each side of said collar and bearing upon the walls of the extension, and a collar on the journal lying partly in the opening in the outer wall of the extension, said casing having a removable front plate supporting one end of the axis of the wheel-bearing, substantially as described.

4. In a journal-bearing, the combination, with a casing 4, cast integral with a rectangular rearward extension 8, the latter having interior walls 13 and 16, with a rectangular projection 15 in the former wall, of a wheel-bearing 18, supported in a box 20, lying in an opening in the wall 16 and in the rectangular projection 15, and a similar box 21, lying in a seat 22 in the removable front plate 6, said seat strengthened by ribs 23, a journal 3, entering an opening 10 and having its small end lying in a recess 24 in the wheel, a collar 27, clamped on the journal and lying between the walls 13 and 16, and saddle-plates 29, straddling the journal on each side of the collar and resting against said interior walls, oil-openings 32 being formed in said walls, substantially as described.

5. In a journal-bearing, the combination, with a casing containing a wheel-bearing 18, provided with an annular recess 24 and a channel 35, of a journal 3, having a collar 36 running in said channel, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PETER SWEENEY.

Witnesses:
WILLIAM J. LACEY,
A. J. STEERS.