2 Sheets—Sheet 1.

T. A. BISSELL.

CAR-AXLE BOX.

No. 193,593. Patented July 31, 1877.

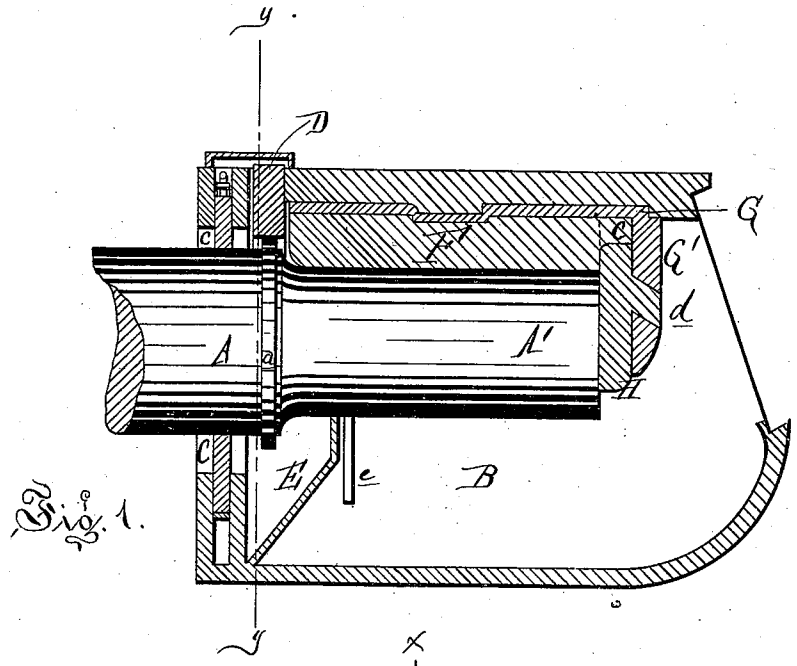


Fig. 1.

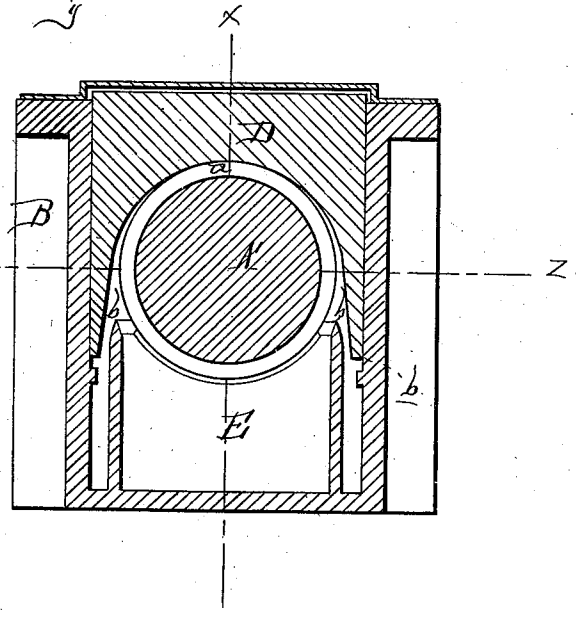


Fig. 2.

Witnesses:
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2 Sheets—Sheet 2.

T. A. BISSELL.

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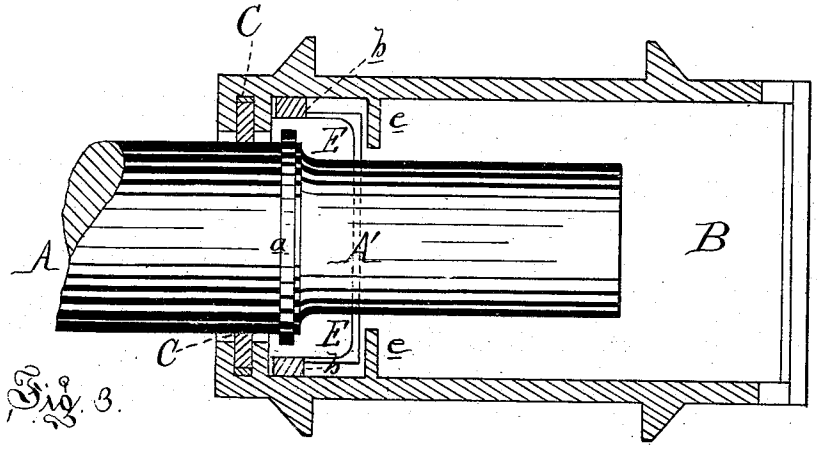


Fig. 3.

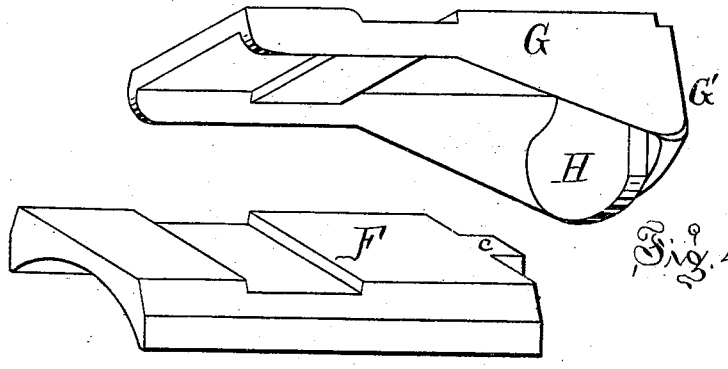


Fig. 4.

Attest:
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UNITED STATES PATENT OFFICE.

THOMAS A. BISSELL, OF DETROIT, MICHIGAN.

IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **193,593**, dated July 31, 1877; application filed May 26, 1877.

To all whom it may concern:

Be it known that I, THOMAS A. BISSELL, of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Car-Axle Boxes, of which the following is a specification:

The first part of my invention relates to an improvement in the axle-box, whereby all the oil passing back onto the axle-collar is returned to the oil-cellar, instead of passing back and out of the box, and which also secures a greater depth of oil in the cellar. It consists in a pocket or diaphragm in the box, under, and extending nearly up to, the axle, and in combination therewith a wooden leader straddling the collar and pocket, to conduct the drips to the oil-cellar again.

The second part of my invention relates to the shoe for incasing or holding the journal-brass, so constructed as to receive and secure a brass stop bar or plate, which limits the end play of the axle, and thereby relieves the back end of the axle-brass from collar-friction. Either brass can be renewed or replaced when worn without renewing the other.

Figure 1 is a longitudinal vertical section at *x x* in Fig. 2, which is a cross-section at *y y* in Fig. 1, looking toward the front. Fig. 3 is a sectional plan at *z z*. Fig. 4 is a perspective view of the shoe and stop-plate with the brass removed.

In the drawing, A represents the axle, having the usual journal A′ and collar *a*. B is the box, provided with the usual packing C, to exclude dust. In front of the packing-slot another one is cored in the top of the box, in which is inserted a wooden plate, D, hollowed out on the lower end to ride the axle-collar, and take up the oil running onto it, and which drips off from its ends *b b*, at the sides of the box, into the oil-cavity of the box on the outside of a pocket, E, cast in the bottom of the back end of the box. The front wall or diaphragm of this box extends close up to the journal of the axle, which thereby increases the capacity of the oil-cellar, and at the same time any dirt or dust coming into the back of the box through the packing is caught in the pocket, and prevented from mingling with the oil to abrade the journal and brass.

F is a light brass, which, in the present case, is cast with a lug, *c*, at the front end, and is held or incased in an iron shoe, G, cast with a pendent flange, G′, at the front end, strengthened by webs at the sides, forming extension of the side flanges. An inclined eye is cored in the flange G′, which receives a lug, *d*, cast on the back of a light brass stop-plate, H, against which the end of the axle comes, and which prevents end play in the latter. A socket is cast in the top of the plate H, to receive the lug *c* of the journal-brass, and thereby keeps the plate H from moving.

At each side of the box, in front of the pocket, there is cast a projecting guard-wing, *e*, to prevent the waste from being pushed around the pocket in packing the box, and thereby insuring a free flow of oil from the sides of the pocket to the body of the cellar.

What I claim as my invention is—

1. In an axle-box having the usual dust-excluding packing C, the combination of the oil-pocket E, extending close to the journal, and the forked plate D, adapted to ride loosely on the axle-collar *a*, and return its drip to the oil-cellar, constructed and arranged substantially as described and shown.

2. The shoe G, cast with a pendent flange, G′, at its front end, adapted to receive and secure the stop-plate H, substantially as and for the purpose set forth.

THOMAS A. BISSELL.

Witnesses:
H. F. EBERTS,
H. L. AULLS.