

C. F. GILLETTE.

Axle-Box.

No. 62,126.

Patented Feb. 19, 1867.

Fig. 1.

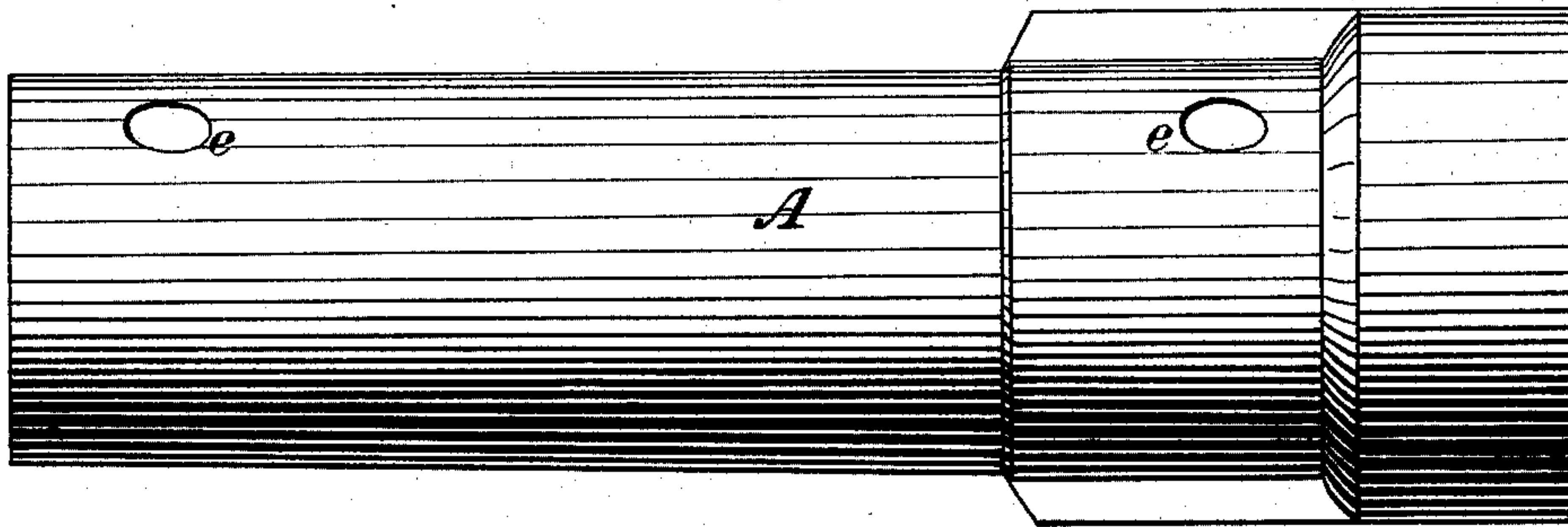


Fig. 2.

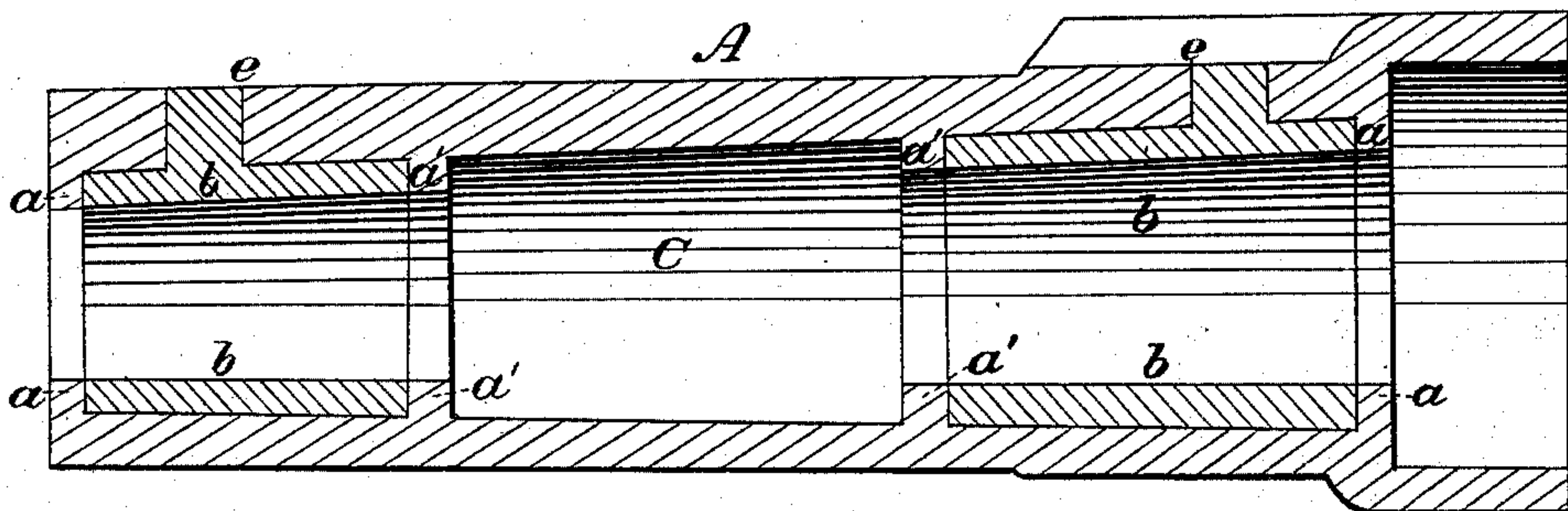
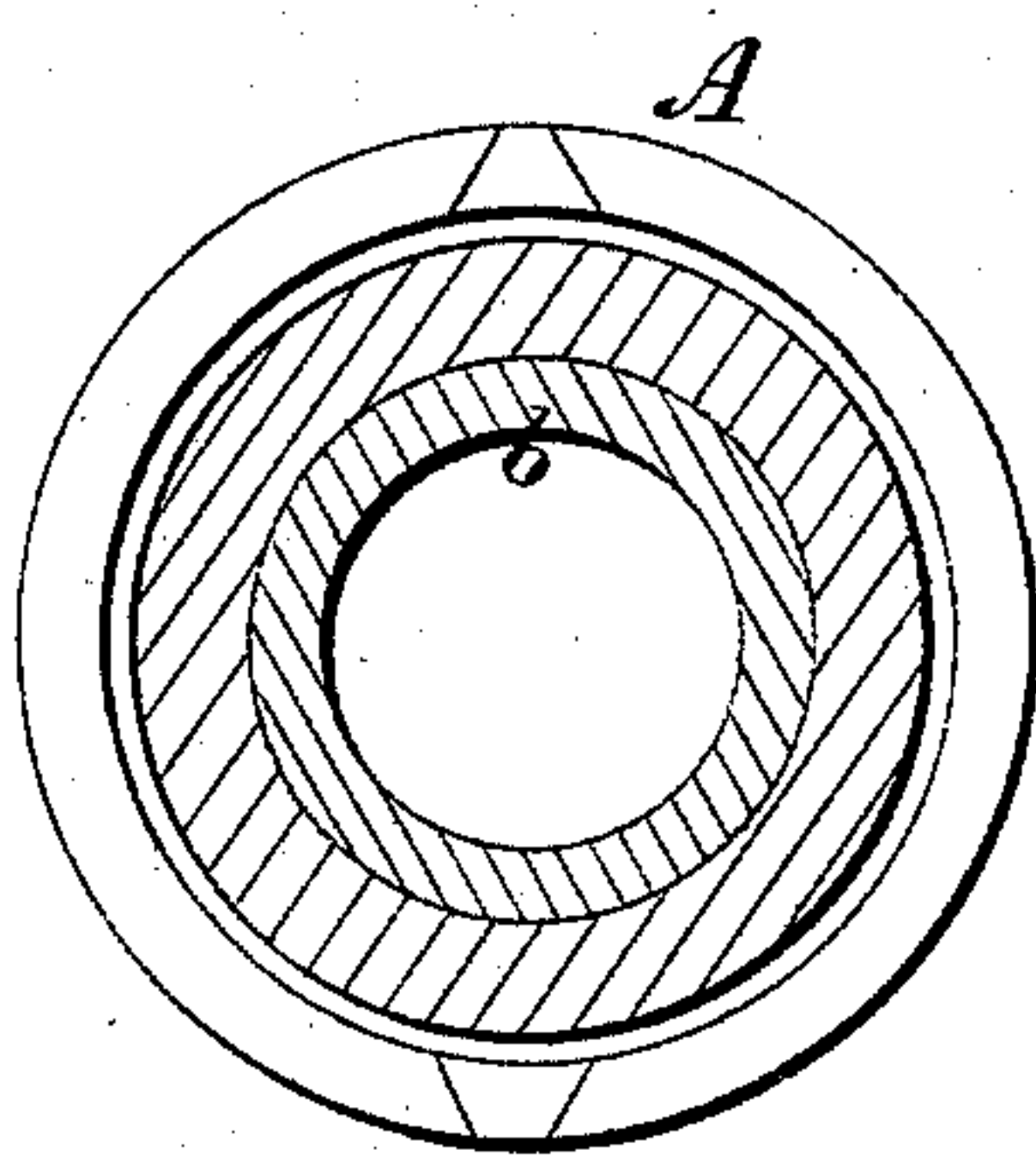


Fig. 3.



Witnesses:

Henry Sylvester
Edw. Schafer

Inventor:

Cyrus L. Gillett
by
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UNITED STATES PATENT OFFICE.

CYRUS F. GILLETTE, OF SPARTA, WISCONSIN.

IMPROVEMENT IN AXLE-BOX FOR VEHICLES.

Specification forming part of Letters Patent No. 62,126, dated February 19, 1867.

To all whom it may concern:

Be it known that I, CYRUS F. GILLETTE, of Sparta, in the county of Monroe and State of Wisconsin, have invented an Improved Axle-Box for Vehicles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of an axle-box. Fig. 2 is a diametrical section through the same, showing the hard-metal bushing or lining. Fig. 3 is a cross-section taken through the box at the point indicated by red line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to increase the utility of vehicle axle-boxes by lining or bushing them with a softer metal than that of which the boxes are made, as will be hereinafter described, my invention consisting in the peculiar manner of constructing the boxes and applying the softer metal between shoulders.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The axle-box A is constructed with four annular flanges, *a a' a'*, which form spaces for the reception within the box of the soft-metal lining *b b*, that forms the bearing-surfaces for the axle. Between the inner flanges, *a' a'*, a space, *c*, is left, which is not filled with soft metal, but which serves as a receptacle for oil for lubricating the bearing-surfaces. The soft metal may be the well-known "Babbitt metal," or any other alloy or composition which will afford a very smooth surface. This soft metal is put into the axle-box A by introducing into this box an axle or a metal form corresponding in shape and size to the axle for which the size of the box is adapted.

The axle fits snugly within the flanges *a a'* at both ends of the box, so that said flanges form, in conjunction with the axle, tight chambers for receiving the metal. The metal is then poured through the sprue-holes *e e*, which are made through the axle box at proper points, and when said annular chambers are filled and the metal cools and shrinks, perfectly smooth surfaces will be left, which will wear for a considerable length of time.

The metal being poured into the annular chambers around the metal core or axle, as above stated, its interior surface will be rendered very smooth, so that there will be comparatively little friction between the axle and the box when in use.

The flanges *a a'* of both linings *b b* may be brought very close together, so as to leave comparatively small bearing-surfaces of soft metal, and thus not only diminish the friction between the box and its axle, but also leave a large space for containing lubricating material.

The soft-metal linings *b b* cannot shrink loose from the box, as the metal will attach itself to the rough cast surfaces of the bore of the box; besides which the sprues or studs in the holes *e e* afford all the security required against looseness of the bushing. The axle-box A is cast in one piece with the flanges *a a'*, formed on its interior surface ready for receiving the bushing.

I am aware that it is not new to employ soft-metal linings or bushing for stationary bearings of various kinds and for various purposes; and I do not claim, broadly, the lining of bearings generally with soft metal by the mode described in J. Babbitt's patents of July 17, 1839, and September 4, 1840. It may have been proposed also to line axle-boxes with soft metal, but not in the manner herein described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A cylindric or conical carriage axle-box, cast in one piece, with flanges *a* and *a'* at each of its ends, and with separated Babbitt or other soft-metal bearing-surfaces *b b*, cast between said flanges, all substantially in the manner described.

2. Holding the cast soft metal in its proper position by the combined agency of the flanges *a* and *a'* and the sprue-lugs which fill the sprue-holes *e e*, substantially in the manner described.

CYRUS F. GILLETTE.

Witnesses:

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