

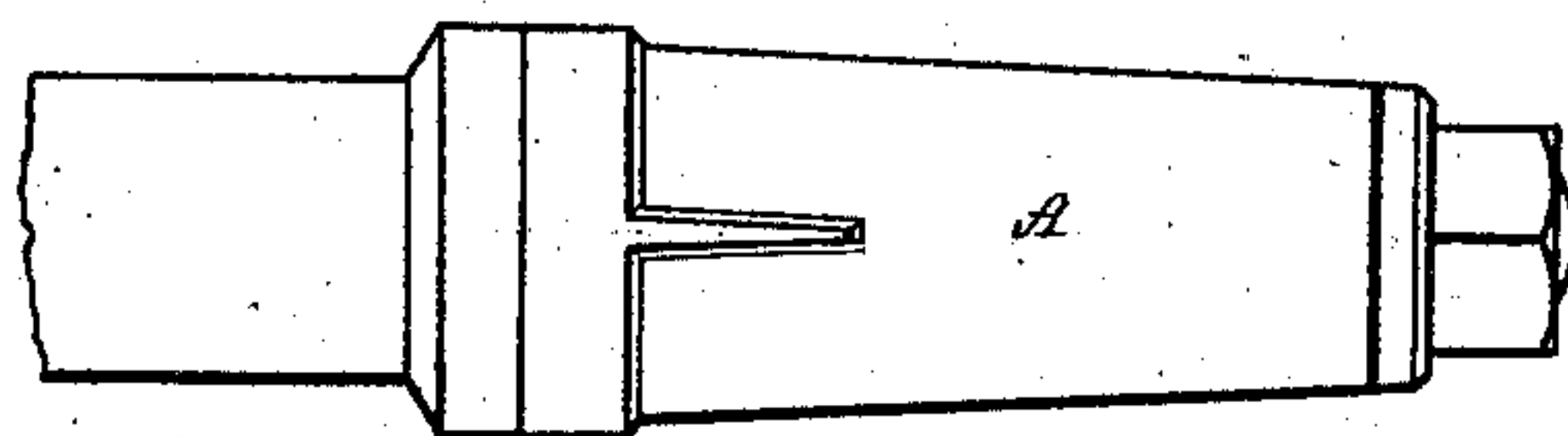
BAKER & ENNIS.

Axle Box.

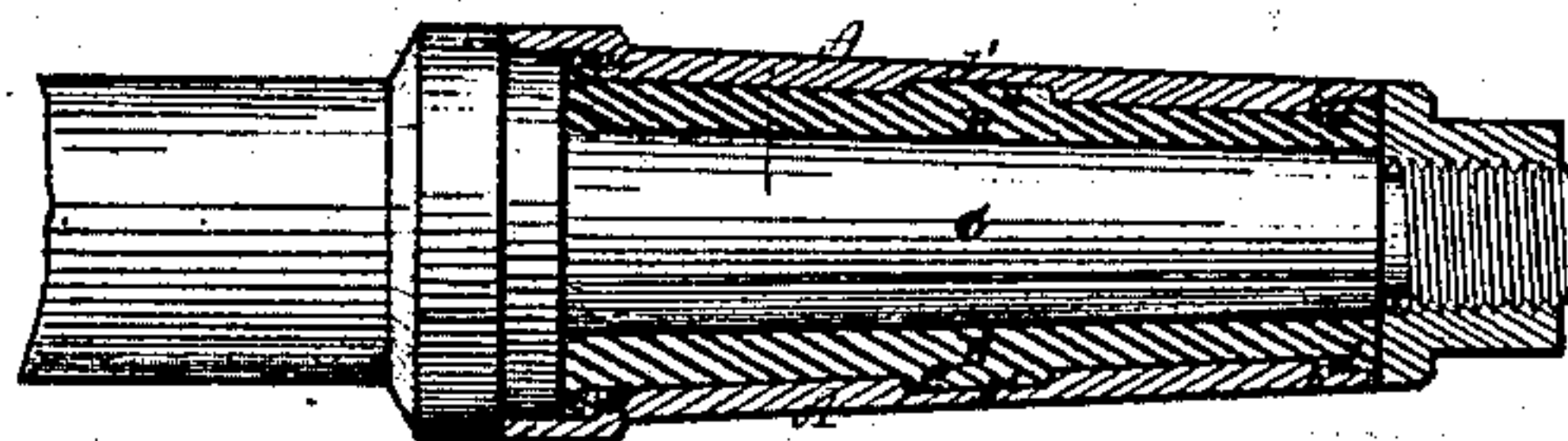
No. 98,543

Patented Jan. 4, 1870.

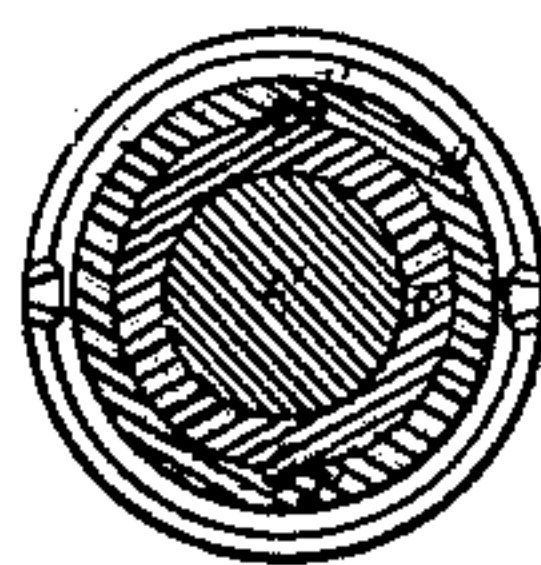
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses

S. H. Piper.

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A. G. Baker & G. M. Ennis.

by their attorney

N. W. W.

# UNITED STATES PATENT OFFICE.

ANSEL GRANVILLE BAKER AND GEORGE MORRIS ENNIS, OF NEW BEDFORD, MASSACHUSETTS.

## IMPROVEMENT IN AXLE-BOXES FOR CARRIAGES.

Specification forming part of Letters Patent No. 98,543, dated January 4, 1870.

*To all whom it may concern:*

Be it known that we, ANSEL GRANVILLE BAKER and GEORGE MORRIS ENNIS, of New Bedford, of the county of Bristol, of the State of Massachusetts, have made a new and useful Invention or Improvement Having Reference to the Axle-Boxes of Carriages; and we do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, and Fig. 2 a longitudinal section, and Fig. 3 a transverse section, of a carriage-axle journal and its box as provided with our invention.

The box is bushed with a soft metal, or a composition of soft metals, generally known to mechanics as "Babbitt metal."

For the purpose of holding the bushing in place we construct the box with two recesses or shoulders, one being at each of its opposite ends, and also with recesses at its middle, the latter recesses being to prevent the bushing from revolving within the box and the former ones being to prevent it from moving endwise therein.

In the drawings, A denotes the box, or "sleeve," as it is usually termed, it being made of cast-iron or other hard metal.

The shoulders or recesses in the box are shown at *a b* and *c d*, the Babbitt metal bushing being exhibited at B.

In casting the bushing into the box and about the journal C when therein, the said bushing, at its ends, is to extend into the recesses of the box or against the shoulders *a b* in manner as shown at *e d* in Fig. 2, and, furthermore, the bushing is to extend into the recesses *d' d'* in manner as shown at *e* in Figs. 2 and 3.

The above method of constructing the box and forming the bushing will cause the latter

when cast into the box and about the journal to be securely fixed in the box so as not only to be prevented from moving endwise therein, but of being revolved in and relatively to it.

We make no claim to anything, combination, or arrangement of parts as represented in either of the Patents Nos. 62,126, 62,356, and 74,029, as our box, although being similar in some respects to those described in such patents—that is, as having a metallic lining cast or otherwise fixed in it—differs in others, particularly in the arrangement of the lining and its supporting-cavities. Our lining goes from one shoulder to the other and beyond the two, and extends up into recesses arranged beyond the two shoulders, which is not the case with either of the linings of the boxes shown in such patents. Furthermore, our lining is cast into intermediate recesses, *d' d'*, which prevent it from turning around in the box.

By so arranging the shoulders *a b* and recesses *c d* no part of the metal of the box is projected against the bearing-surface of the axle to wear or cut the same or be worn thereby.

We save by our improvement the process of subjecting the box to an acid solution, and next tinning its inner surface preparatory to casting the metal into it, such process being described in Patent No. 74,029, hereinbefore referred to.

We claim, therefore—

In the soft-metal-lined box, the lining, as extended into recesses *d' d'* and beyond the shoulders *a b*, and into the recesses or grooves *c d*, arranged in the sleeve A, as set forth.

ANSEL GRANVILLE BAKER.  
GEORGE MORRIS ENNIS.

Witnesses:

R. W. PEIRCE,  
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