No. 646,119. Patented Mar. 27, 1900.

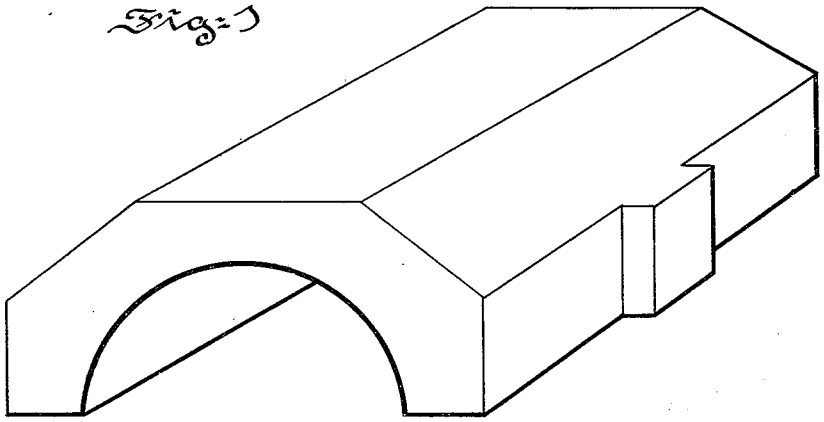
# G. H. CLAMER & J. G. HENDRICKSON.

## BEARING.

(Application filed Nov. 17, 1899.)

(No Model.)

Fig. 1



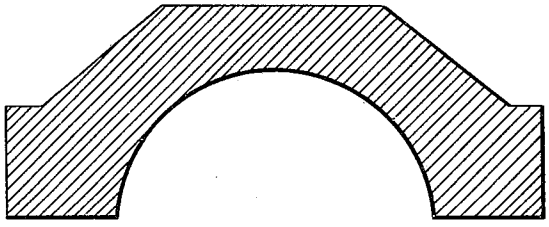


Fig. 2

Witnesses:
[illegible]
Dora Sternberger

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# UNITED STATES PATENT OFFICE.

GUILLIAM H. CLAMER AND JOSEPH G. HENDRICKSON, OF PHILADELPHIA, PENNSYLVANIA.

## BEARING.

SPECIFICATION forming part of Letters Patent No. 646,119, dated March 27, 1900.

Application filed November 17, 1899. Serial No. 737,305. (No model.)

*To all whom it may concern:*

Be it known that we, GUILLIAM H. CLAMER and JOSEPH G. HENDRICKSON, citizens of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Bearing, of which the following is a specification.

The object of the present invention is to provide a journal-bearing consisting of an alloy essentially of copper and containing lead in relatively-large and tin in relatively-small proportions, or even no tin, whereby the antifriction and wearing qualities of the bearing are greatly enhanced and the cutting action of the journal diminished; and to this end the invention comprises a bearing of such an alloy in which there is incorporated a small percentage of nickel, which when alloyed with copper causes it to set very quickly after pouring, due to the rise in the melting-point of the alloy. By this quick setting the lead which is only mechanically held and even when present in excessive proportions is held up and prevented from segregating to the bottom of the casting, as would be the case were the alloy to set slowly.

In the accompanying drawings, Figure 1 is a perspective view illustrating one of many types of bearings that can be made to embody our invention. Fig. 2 is a cross-sectional view of the same.

A bearing of our invention comprises copper, lead, and nickel, with or without tin, and it is characterized by the comparatively-large percentage of lead which it contains. Such comparatively-large percentage of lead is advantageous, but hitherto it could not be incorporated into the bearing. However, by the addition of a comparatively-small quantity of another metal, as nickel, it is possible to obtain the increased proportion of lead and the advantages which follow therefrom and which are well understood in the art. As an example of the proportions of the various ingredients which make up an alloy embodying the invention we may mention lead, more than fifteen per cent., by weight; tin, if present, aproximately less than eight per cent., by weight; nickel in very small proportion, such as one per cent., by weight, and the balance copper. Zinc or other metals and such nonmetals as arsenic and phosphorus may be added to the alloy and when added may make it more easily workable under a tool or may add other properties; but, however, we do not regard the addition of such metals as essential to the invention.

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is—

A journal-bearing consisting of a lead-copper alloy containing a relatively-small proportion of nickel, substantially as described.

In testimony whereof we have hereunto signed our names.

GUILLIAM H. CLAMER.
JOSEPH G. HENDRICKSON.

In presence of—
W. J. JACKSON,
DORA STERNBERGER.