UNITED STATES PATENT OFFICE.

DAVID JACKSON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN ALLOYS FOR JOURNAL-BEARINGS.

Specification forming part of Letters Patent No. **217,946**, dated July 29, 1879; application filed November 4, 1878.

To all whom it may concern:

Be it known that I, DAVID JACKSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metallic Alloys for Journal-Bearings, &c.; and I do hereby declare that the following is a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain improvements in metallic alloys for packings, journal-bearings for car-wheel axles, and such like uses.

The object of my invention is to provide a metallic compound which will be more durable than the metals and alloys now in use for the above and kindred purposes, and which will combine and possess in a high degree the qualities of hardness, toughness, elasticity, and anti-friction, and which will not be liable to cut.

With reference to its use as a packing for cylinders of engines, it is stated that heretofore rings or sections for the piston-head have been made of various metals and metallic alloys, and also, in part, of glass, all of which, as a rule, have failed to give entire satisfaction in their use, some proving too soft, others cut, in which latter case it becomes necessary to rebore the cylinder, which, if frequently repeated, becomes unserviceable. To overcome this tendency to cut, and at the same time to secure an alloy possessing sufficient hardness and toughness, I have invented an alloy of copper, tin, nickel, and antimony, in the proportions hereinafter set forth.

For journal-bearings, and more especially for bearings for car-wheel axles, hardness, toughness, and non-liability to cut are very essential qualities, all of which are possessed in a high degree by my alloy.

The proportions of the component parts of said alloy I have found best for the aforesaid purposes and kindred uses are as follows: eighty-nine and seven-tenths (89.7) per cent. of copper, seven and three-tenths (7.3) per cent. of tin, two and five-tenths (2.5) per cent. of nickel, and five-tenths (0.5) per cent. of antimony.

By the addition of nickel and antimony the alloy is rendered homogeneous, exceedingly fine grained, and very tough and elastic, especially adapting it to the purposes herein named and kindred uses too numerous to recite in this application.

The alloy is compounded as follows: The copper is first melted in the crucible, and the nickel, tin, and antimony are each added separately in the order named, each being allowed to fuse before the next is added. After adding the antimony and all are melted, the mass should be thoroughly stirred in the crucible, when it may be poured directly into the molds.

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

An alloy consisting of eighty-nine and seven-tenths (89.7) of copper, seven and three-tenths (7.3) of tin, two and five-tenths (2.5) of nickel, and five-tenths (0.5) of antimony, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

DAVID JACKSON.

Witnesses:

A. P. LANTERMAN,

J. W. MACGEAGH.