

UNITED STATES PATENT OFFICE.

MILTON H. CAMPBELL, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN ALLOYS OR ANTI-FRICTION METALS.

Specification forming part of Letters Patent No. **154,317**, dated August 25, 1874; application filed June 11, 1874.

To all whom it may concern:

Be it known that I, MILTON H. CAMPBELL, of Syracuse, Onondaga county, State of New York, have invented certain Improvements in Anti-Friction Metal, of which the following is a specification:

The purpose of my invention is to make an alloy of certain metals properly proportioned and united, as herein described.

I employ, in the manufacture of my compound metal, copper, spelter, and aluminum, together with a small portion of silicon. The two latter metals would be too expensive for the purpose but for my method of obtaining and combining them with the other metals. For this purpose I take a portion of yellow-clay compound, generally of about twenty per centum of silex mixed with the clay.

To form a proper charge for a melting, I mix one pound of dry clay, a pound and a half of prussiate of potash, and one pound of common salt together, and put in the bottom of a crucible. To this I add thirty-three pounds of copper, and raise them to a proper heat to melt the copper. I then add, in the usual way known to metallurgists, twenty-seven and a half pounds of spelter, and just before casting

I add one and a half pound of tin, which completes the alloy. These ingredients thus compounded produce the strong, tough anti-friction alloy desired for axle-boxes and other purposes where applicable.

It is obvious that the proportions herein named can be somewhat varied within certain limits; for instance, a larger amount of clay can be added to increase the aluminum without detriment to the result; but the proportions I have named produce a metal sufficient for most purposes.

In the above-described anti-friction alloy, I claim—

1. The combination of metals herein described, and in the proportions substantially as and for the purposes set forth.

2. The admixture of aluminum and silicon with the other metals in the manner herein described, extracted directly from the ore in the crucible with the other metals and melted in conjunction therewith, as specified.

M. H. CAMPBELL.

Witnesses:

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