

# UNITED STATES PATENT OFFICE.

GEORGE I. SCHOENBERG, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN JOURNAL-BOXES.

Specification forming part of Letters Patent No. **179,616**, dated July 4, 1876; application filed October 29, 1875.

*To all whom it may concern:*

Be it known that I, GEORGE I. SCHOENBERG, of San Francisco city and county, State of California, have invented an Improvement in Journal-Boxes for Railroad-Cars; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to journal-boxes for railway-cars; and it consists in making them of an anti-friction metal, hereinafter described.

These boxes are generally made from brass, or some alloy forming yellow metal, and must be turned to fit the journal in order to be serviceable. They easily become heated if they fit too tight, and if they should not be wide enough sidewise they become cracked and split open.

My improved journal-box is formed by pouring the anti-friction metal around a shaft or journal, which is properly luted into the outer iron box.

No finishing is necessary, as the journal will gradually wear itself into perfect contact, but this wear takes place slowly, and the journal may travel over three thousand miles of railway without the box being ground to a perfect bearing. This, however, is not prejudicial, as the metal seems to unite all the valuable qualities of anti-friction without being so hard as to cut or mar the journal. It is also

tough, and if the journal should happen to bear upon the sides, instead of the bottom, there will be no danger of the box becoming split open.

In order to form this alloy, I use the metals copper, tin, and zinc, each of which is well known for various alloys; but my present compound differs from previous ones in the use of a very large proportion of zinc as compared with the other metals.

The proportions are as follows: One-half ( $\frac{1}{2}$ ) pound of copper, one-half ( $\frac{1}{2}$ ) pound of tin, and from three (3) to ten (10) pounds of zinc. These are melted and mixed in the usual manner.

For railway-journals I have found that a proportion of from five to eight pounds of zinc to one-half a pound of each of the other two metals is the most serviceable.

I am aware that heretofore copper, tin, and zinc, and copper, antimony, and zinc, have been compounded to make anti friction metals. These I do not claim, broadly; but

What I do claim, and desire to secure by Letters Patent, is—

A journal-box for railway-cars, composed of copper, tin, and zinc, in proportions herein set forth, substantially as and for the purpose described.

GEORGE I. SCHOENBERG.

Witnesses:

J. L. BOONE,  
C. M. RICHARDSON.