J. W. COLE.

Processes of Grinding Journal-Boxes or Bearings.

No. 139,772. Patented June 10, 1873.

Fig: 1

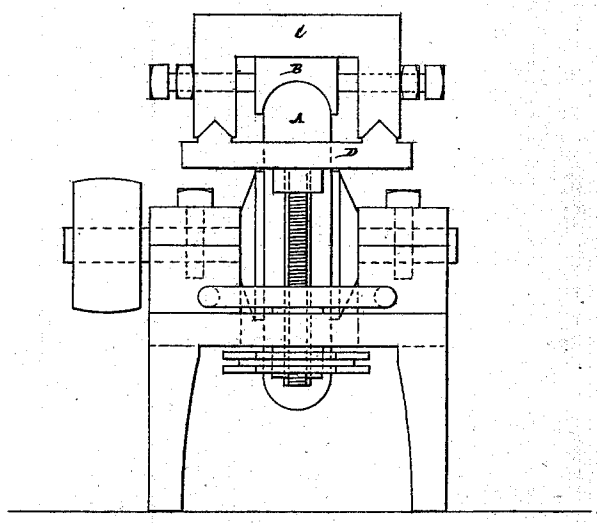
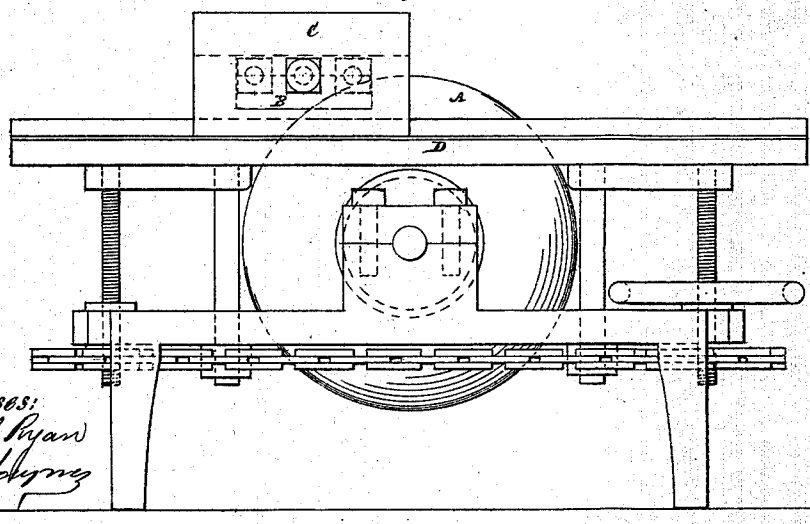


Fig: 2



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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNES PROCESS.)

UNITED STATES PATENT OFFICE.

J. WENDELL COLE, OF BROOKLYN, NEW YORK, ASSIGNOR TO "THE TANITE COMPANY", OF STROUDSBURG, PENNSYLVANIA.

IMPROVEMENT IN PROCESSES OF GRINDING JOURNAL BOXES OR BEARINGS.

Specification forming part of Letters Patent No. **139,772**, dated June 10, 1873; application filed December 7, 1872.

CASE A.

To all whom it may concern:

Be it known that I, J. WENDELL COLE, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Process of Grinding Journal Boxes or "Brasses" and Bearings for Axles and Shafting, of which the following is a specification:

Prior to my invention it has been customary to dress the working-surfaces of journal boxes or brasses for axles or shafting, either by boring them and afterward removing imperfections with the file, or to grind them by solid emery-wheels of contracted diameter corresponding with the required bore of the brass or journal-box, and arranged to revolve with their axis coincident or in the same line with that of the finished brass or bearing.

The first of these methods is unreliable as to "truth" as well as to evenness of surface, and is expensive, while by the grinding process above mentioned there were objections which, among other purposes, it is the object of my invention to remove. Thus the diameter of the grinding-wheel, arranged in relation with the journal-box, as described, was steadily and rapidly changing so that it could not grind a circle of the same size for any great length of time, and such wheel, being necessarily limited in diameter, could never attain that speed at its periphery which is desirable to do rapid and effectual work, without risking the heating of its bearings and causing other inconveniences. The cost, too, of such wheels for the amount of work capable of being done by them was very great, inasmuch as the larger portion of the wheel was waste, it being useless so soon as the diameter was reduced below that of the bearing or journal-box to be ground by it.

My improved process consists in grinding journal boxes or brasses longitudinally of instead of transversely to their axis, by means of an emery or other grinding wheel, having its axis in transverse relation to that of the journal-box and arranged to revolve in a plane or planes running in the same direction as the length of said box, said wheel being of a transverse curvature on its periphery corresponding with the cross-section of the interior or working surface of the box or brass, which is slid in transverse relation to the axis of the revolving wheel past or over its periphery, or, in case of the box being stationary, the wheel moved in like relation to the box, or both simultaneously moved in direction of the length of the box. By this process of grinding journal boxes or brasses, a grinding wheel of large diameter relatively to that of the box to be ground may be used, and the necessary speed be attained at the periphery of the wheel without risk of heating, and said process doing away with the other objections hereinbefore named, the grinding curvature of the wheel being in transverse relation to the axis of the latter, so that the diameter of the wheel is not restricted, and reduction of diameter by wear does not affect it, nor wear otherwise of the wheel impair for a great length of time its adaptability and accuracy.

In the accompanying drawing, which forms part of this specification, Figure 1 represents an end view of a machine for grinding journal-boxes in accordance with my invention, such machine serving as well as any other to illustrate my improved process. Fig. 2 is a side view of the same.

Similar letters of reference indicate corresponding parts, but only the leading parts need here to be referred to.

A is a revolving emery or other grinding wheel of transverse curvature on its periphery corresponding with the required curved cross-section of the interior or working surface of the journal-box. B is a journal box or brass to be ground, arranged with its axis in the plane or planes of the wheel's rotation, that is, in transverse relation to the axis of the wheel, and made capable of motion throughout its length past or over the periphery of the wheel in transverse relation to the axis of the latter, as by a sliding carriage, C, within which said box is held and made adjustable, and which travels along ways on a table, D, that also may be adjustable to adapt the work to the wheel.

This machine I do not here claim, as the same is the subject of a separate application

for patent made by me, and machines of a different description may be used to carry my improved process into effect.

What is here claimed, and desired to be secured by Letters Patent, is—

The process, substantially as herein described, of manufacturing journal boxes or brasses by grinding them longitudinally in relation with their axis, substantially as specified.

J. W. COLE.

Witnesses:
FRED. HAYNES,
MICHAEL RYAN.