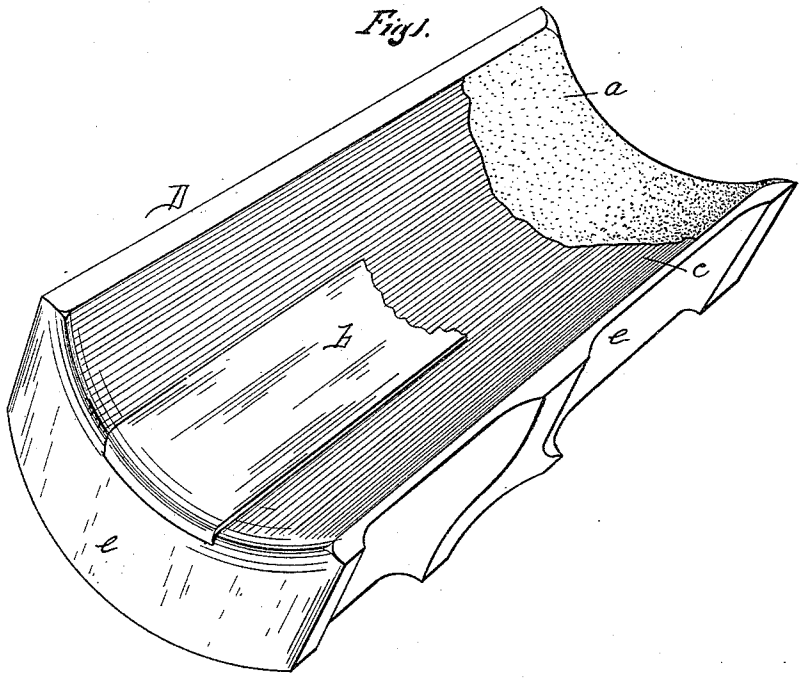
(No Model.) 2 Sheets—Sheet 1.

P. P. EMORY.

JOURNAL BRASS.

No. 330,389. Patented Nov. 17, 1885.

Fig 1.



WITNESSES:

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N. PETERS, Photo-Lithographer, Washington, D. C.

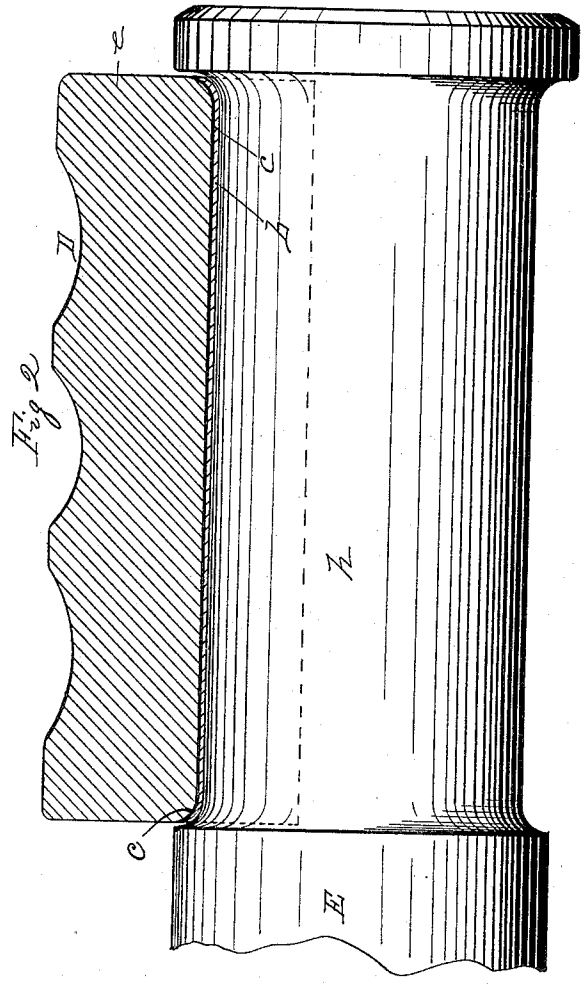
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UNITED STATES PATENT OFFICE.

PASCHAL P. EMORY, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO SUMNER A. BEMIS, OF SAME PLACE.

JOURNAL-BRASS.

SPECIFICATION forming part of Letters Patent No. 330,389, dated November 17, 1885.

Application filed July 20, 1885. Serial No. 172,061. (No model.)

To all whom it may concern:

Be it known that I, PASCHAL P. EMORY, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Journal-Brasses, of which the following is a specification.

This invention relates to improvements in journal-brasses for car-axles and other rotating shafts which are subject to rapid rotation under great weight, the object being to provide a journal-brass for unpolished but otherwise truly turned and finished axle-journals; or, in other words, a brass peculiarly adapted to be used with a new journal to at once, and without exciting friction, polish and perfectly finish its turned surface as left by the lathe.

A further object of this invention is to provide a journal-brass of peculiar construction relative to the surface thereof against which the journal rotates, whereby a cast brass journal is made, which requires no machine finish to fit it for the journal with which it is to operate, thereby saving the expense of said finishing and fitting to prepare a proper seat for the journal.

In the drawings forming part of this specification, Figure 1 is a perspective view of a journal-brass embodying my improvements. Fig. 2 is a longitudinal section of said brass and a side elevation of an axle-journal having such a surface as is adapted to rotate in contact with the bearing side of said brass.

In the drawings, E is a section of a car-axle having the journal *h* thereon, the latter being turned smooth and truly cylindrical, but not polished. This particular description of said journal is given to distinguish it from old or partially worn ones which are in an imperfect or bad condition by reason of deep rings being formed in them, which cause much friction, and my improved brass is not adapted to be used with such journals.

In the brass D as shown by Fig. 1, *e* indicates the body thereof, which is cast in the usual way, and thereby is formed the usual curved or arched side shown.

The mottled portion *a* of the bearing-surface of the brass D indicates its unfinished condition, or that in which it is left when it is cast. The parallel-lined portion *c* of said bearing-surface, which is shown partly broken away to expose to view said surface *a*, represents an excessively thin coating of tin; and *b* indicates a narrow strip of thin sheet-lead, one end of which is shown broken away. In making said journal-brass, it is cast with a journal-bearing surface of proper curvature to fit the journal on which it is to be placed. It is then properly cleaned and its curved surface *a* is covered with a film only of tin, *c*, which is applied in the usual way when the brass is heated for that purpose. Said coating of tin is in no sense a "soft-metal" lining or bearing for the brass, for it has not sufficient thickness therefor. A strip of thin sheet-lead, *b*, is then applied to the tinned surface *c* of the brass and attached thereto by "sweating" under the action of heat, in the usual way. Said lead strip *b* is applied longitudinally over the central portion only of the bearing-surface of the brass D and extends from end to end thereof, as shown, leaving on each side thereof a considerable surface covered only with said tinned coating *c*. The thickness of the lead strip *b*, which in practice is employed, is about one thirty-second of an inch.

The action of the journal-brass made as above described and of a truly-turned unpolished journal in practical use under a car is as follows: The brass is placed in any ordinary suitable axle-box and the journal is lubricated as usual, the latter having a bearing upon no other part of the brass except on the surface of said lead strip *b*. After the journal and brass have run for a few hours in contact, which they will do without heating, the lead will be found to have been spread over the surface of the brass between the latter and the journal, and the latter will have become perfectly polished and smooth and in suitable order for continuous running with the brass with no danger whatever from heating, the lead and tin gradually disappearing and the journal eventually finding its permanent seat on the surface of the brass, which, by the above-mentioned action of the journal and lead, has become perfectly polished. Thus it is seen that the said tin coating and the lead strip which are applied to the brass for temporary service only—*i. e.*, to polish the jour-

nal *h*, and in turn to enable the latter to polish the brass—do not constitute, either separately or together, what mechanics understand by the term "soft-metal packing" or "white-metal lining" for bearings, for lead alone is not suited to such uses, nor is pure tin, and what there is of said two metals, which are applied separately, and not mixed, to the brass, soon disappears from the latter after running a short time, as above described; and, furthermore, the thickness of said lead strip is quite insufficient to permit of exposing it to the action of any journal excepting one having a truly-turned cylindrical form. A partially-worn axle, or one having rings in it resulting from running it in contact with a hard bearing with insufficient lubrication, cannot be used with the brass herein described, for the softness of the lead strip *b* would permit such worn journal to come almost immediately in contact with the hard brass body *e*, thereby creating excessive heat and friction.

What I claim as my invention is—

A journal-brass consisting of a cast brass body having on the cast surface of its journal-seat a coating of tin, and having attached to said tinned surface a strip of lead extending centrally thereon from end to end of the brass, substantially as set forth.

PASCHAL P. EMORY.

Witnesses:
H. A. CHAPIN,
W. F. RICE.