(No Model.)

# L. GOULLIOUD & C. PAGÉ.

## JOURNAL BEARING.

No. 327,675. Patented Oct. 6, 1885.

Fig. 1

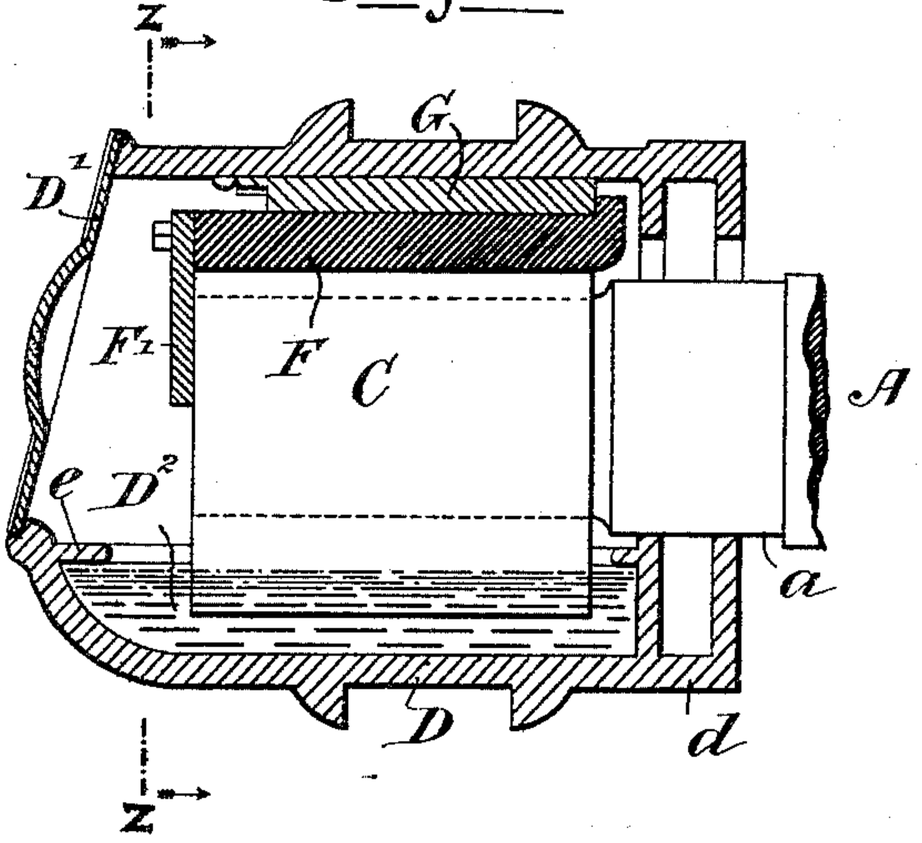


Fig. 2

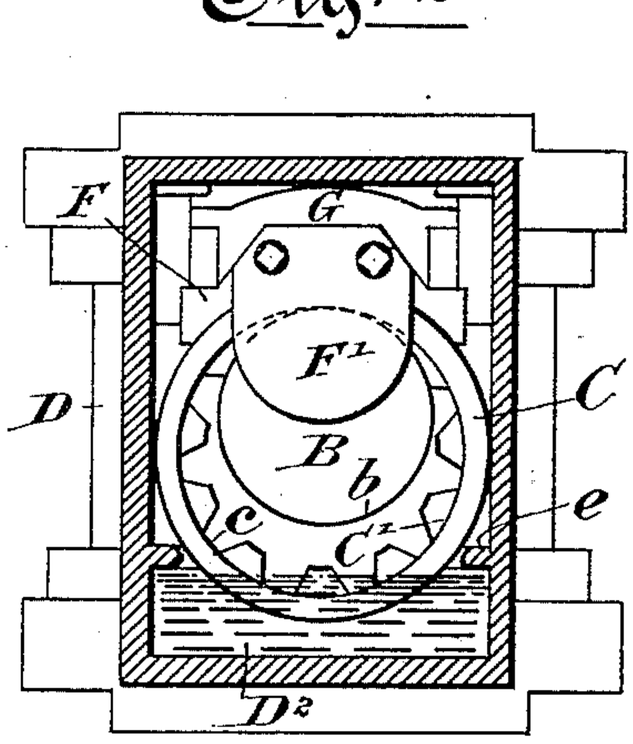


Fig. 3




Fig. 4




Witnesses

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# UNITED STATES PATENT OFFICE.

LOUIS GOULLIOUD AND CHARLES PAGÉ, OF MONTREAL, QUEBEC, CANADA, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE UNION BEARING AND LUBRICATOR COMPANY, OF SAME PLACE AND PORTLAND, MAINE.

## JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 327,675, dated October 6, 1885.

Application filed April 10, 1885. Serial No. 161,832. (No model.) Patented in Canada April 22, 1885, No. 21,484.

*To all whom it may concern:*

Be it known that we, LOUIS GOULLIOUD and CHARLES PAGÉ, both of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have jointly invented certain new and useful Improvements in Journals; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention is applicable to street-cars of all kinds, and to the rolling-stock of railways, including freight and passenger cars, sleepers, and the tenders of locomotives; and its object is to reduce the amount of wear between the bearing-surface of the journal and that of the brass, and at the same time to provide perfect lubrication of these parts.

The invention may be thus briefly described: At some distance from the end of the axle its diameter is diminished, the difference in size being about twice the thickness of a ring placed on the lessened end of the axle, so that the face of the ring and that of the axle proper are nearly on the same plane. This ring is of a larger diameter than the axle proper, being in the proportion to it, preferably, of nearly two to one, although this may be varied according to circumstances. The lower part of the ring dips down into oil or other lubricant contained in the bottom of the axle-box. On the inner periphery of this ring are formed, in the center, teeth which intermesh with similar teeth formed in the center of the journal, the plane surfaces of the axle and inner periphery of the ring on either side of the intermeshing teeth being in contact. The outer periphery of the ring forms the bearing-surface for the brass. By this construction the revolution of the axle proper imparts to the ring rotary motion, the number of revolutions of the latter per minute being fewer than those of the axle proper, the difference in number being in proportion to the difference in their diameter, and thus the several points on the bearing-surface of the ring are brought less frequently in contact with the under side of the brass than would otherwise be the case, thereby reducing the amount of attrition and consequent wear of the ring. The ring in its revolution dips into and brings up with it the lubricant, spreading it not only over the bearing-surfaces of its outer periphery and the brass, but also of those of the inner periphery and the journal.

For full comprehension of the invention reference must be had to the annexed drawings, in which Figure 1 is a side view of the journal, with the axle-box, &c., in section; Fig. 2, a sectional view on line *z z*, Fig. 1, showing end of axle, &c.; Fig. 3, a sectional elevation taken through ring, showing the journal or axle proper; and Fig. 4 a transverse section through journal, ring, and box.

Similar letters of reference indicate like parts.

A is the axle proper, formed, as shown at *a*, with a shoulder, the part B beyond such shoulder forming the journal and being, as shown in Figs. 3 and 4, cut away in its center to form teeth B′, of desired length, the outer faces of these teeth being slightly below the plane surfaces *b b* of the journal on either side.

C is a ring, of such greater diameter than the axle A as may be found convenient, placed on B, to the length of which its width will correspond, and of such thickness that when in position its outer or bearing surface will approximate closely to the periphery of the axle A. This ring C has, as shown specially in Fig. 4, formed on its inner periphery, teeth C′, corresponding in length to the teeth B′, with which they intermesh.

D is the axle-box, of suitable construction and size sufficient to allow of the rotation within it of the ring C, *d* being a dust-guard of the ordinary kind, D′ the door through which the lubricant is introduced, and $D^2$ the chamber in which such lubricant is contained and into which the ring C dips. *e e* are ledges around and above this chamber, serving to keep the oil or other liquid lubricant from splashing out by the motion of the cars, or being otherwise wasted. (The construction thus described—viz., the ledges *e*—forms no part of the present invention, and will be included in another application which we are about to make.)

F is the brass, to which is screwed or otherwise attached an end piece or flange, F′. G is the wedge, and H H the side pieces, these, with the brass proper, being of the ordinary construction.

It will be observed that the brass F bears entirely upon the outer periphery of the ring C, and that this in turn is carried by the bearing-surfaces *b b*, with which the surfaces *c c* of the inner periphery of the ring come in contact, and that the teeth B′ C′ simply serve to impart to the ring C rotary motion from the main axle A, and at the same rate of speed.

Again, although the ring C and main axle A move at the same rate of speed, it will be obvious that the greater diameter of the former will cause it to make a less number of revolutions in a given time than the latter, thereby insuring less wear to the ring and greater power.

Again, as part of the ring is constantly immersed in the oil-chamber $D^2$, the lubricant is carried up both on its inner and outer periphery and thereby both the surfaces of such outer periphery and the brass, and also those of the inner periphery and the axle or journal proper, are thoroughly lubricated.

Although the journal proper is shown and described as of less diameter than the axle, it may in some cases be desirable to have the axle its full diameter throughout and form on it a projection to keep in place the rotating ring, which must be correspondingly increased in diameter.

Having thus described our invention, we beg to state that what we claim is as follows:

1. The combination, with a car-axle having a journal of less diameter than the axle proper, of a ring of greater diameter than such axle, resting upon and rotated by such journal, and carrying the brass of the bearing, substantially as described.

2. The combination, with the journal, of a ring resting on and rotated by the same, forming a bearing-surface for the brass and acting as a lubricator, all substantially as herein set forth.

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