J. D. WEBSTER, dec'd.
L. D. Webster, Adm'r.

No. 191,786. CAR AXLE-BOX. Patented June 12, 1877.

Fig. 1.

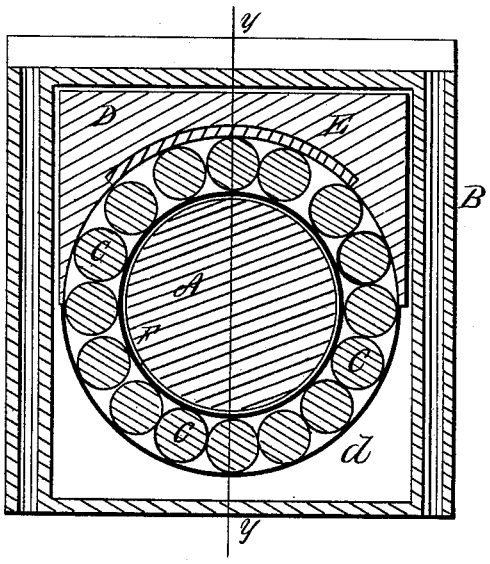


Fig. 2.

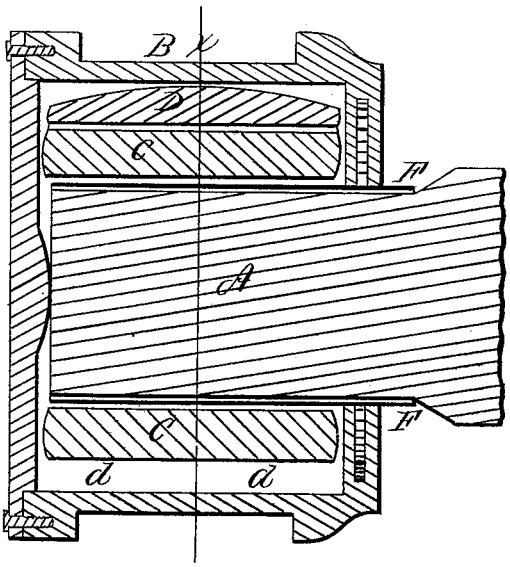


Fig. 3.

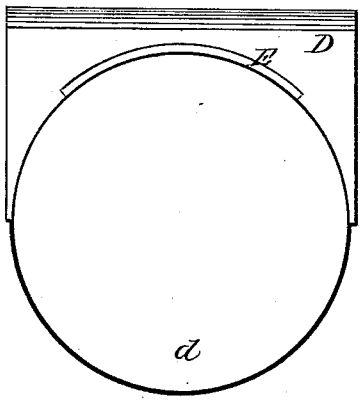
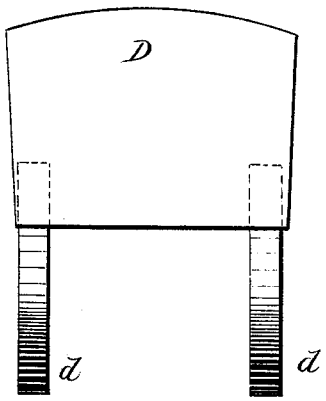


Fig. 4.



Witnesses:
E. E. Masson
H. L. Page

Inventor:
Lewis D. Webster administrator
of the Estate of Joseph D. Webster
by Chas. G. Page Atty.

UNITED STATES PATENT OFFICE.

LEWIS D. WEBSTER, OF CHICAGO, ILLINOIS, ADMINISTRATOR OF JOSEPH D. WEBSTER, DECEASED.

IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **191,786**, dated June 12, 1877; application filed April 5, 1877.

To all whom it may concern:

Be it known that JOSEPH D. WEBSTER, deceased, late of Chicago, in the county of Cook and State of Illinois, invented certain new and useful Improvements in Railroad Journal-Boxes; and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, in which—

Figure 1 is a transverse section, taken on the line *x x*, Fig. 2. Fig. 2 is a longitudinal section, taken on the line *y y*, Fig. 1; and Figs. 3 and 4 are side and end elevations of the rocking piece.

This invention relates to certain improvements in that class of railroad journal-boxes in which anti-friction rollers are employed for the purpose of diminishing friction.

The improvement consists in the combination of a rocking bearing with the rollers applied in a journal-box, for the above purpose, the object of the improvement being to secure parallelism between the upper bearing, the rollers, and the journal, so as to prevent the unequal wearing of any or all of said parts; also, in the construction and combination of certain parts hereinafter described and claimed.

Among the several ways in which this rocking bearing may be applied, in combination with the anti-friction rollers, that shown in the accompanying sheet of drawings is deemed the best.

Referring by letter to said drawings, A is the journal; B, the box; C, the rocking piece or bearing, the upper surface of which, on which the box rests, permits the wearing parts to take position parallel to each other. Attached to the rocking piece are two bands, *d d*, which pass around under the journal at a distance therefrom of a little more than the diameter of the roller C. These bands keep said rollers in place under the journal, and guide them in their course around it.

By this arrangement the rollers are kept parallel with the journal in their entire course. This parallelism is specially necessary in this box, as one of the advantages of using the rollers is that they render it feasible to use hardened surfaces on the journal, the rollers, and the bearing over the rollers, securing thereby durability, which is not practicable when the friction is that of rubbing-surfaces, instead of rolling, as herein; and without parallelism the hardened surfaces would be likely to "cut" rapidly.

It will be seen by a little calculation, that the rollers surrounding the journal, as described, will have more than three times the wearing-surface of the journal, or of that part of the bearing-surface over the roller where the principal friction comes.

To meet the wear of the bearing-surface over the rollers, it is proposed to insert a plate, E, of steel or iron, properly curved, which may be hardened to resist wear, and be readily replaced by a new one when necessary.

It is also proposed to adopt a similar expedient to resist and repair the wear of the journal—that is, to employ a thimble, F, of iron or steel, (shrunk on, or otherwise firmly secured, to the journal,) which may be hardened to resist wear, and may also be removed and replaced by another when so worn as to make it necesssary to change.

This protection is more necessary in this kind of box than in the ordinary one, inasmuch as the rollers present to their bearings a series of "knuckles" or blunt edges, instead of a continuous and concentric surface of softer metal.

It is known that anti-friction rollers and rocking bearings have been applied separately in various ways in railroad journal-boxes; but it is believed that the two have never before been combined, or that the wear of the bearing-surfaces of the box and journal by the rollers has been resisted and compensated, as herein proposed, by hardening and replacing the bearings.

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

1. The combination, with anti-friction rollers in a railroad journal-box, of a rocking bearing, D, within the box, to secure parallelism between the journal and rollers, substantially as set forth.

2. The rocking bearing herein described, composed of the rocking piece D and the bands *d*, constructed substantially as and for the purpose set forth.

3. The combination, with anti-friction rollers and rocking bearing D, of the removable bearing E, made and operating substantially as described.

4. The combination, with the anti-friction rollers and rocking bearing, of the removable bearing E in said rocking bearing, and the removable sleeve F on the axle or journal, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand and seal.

LEWIS D. WEBSTER. [L. S.]
Administrator of estate of
Joseph D. Webster, dec'd.

Witnesses:
JOHN G. SHORTALL,
A. W. PATTERSON.