

G. W. THOMAS.
Axle-Box.

No. 224,971.

Patented Feb. 24, 1880.

Fig. 1

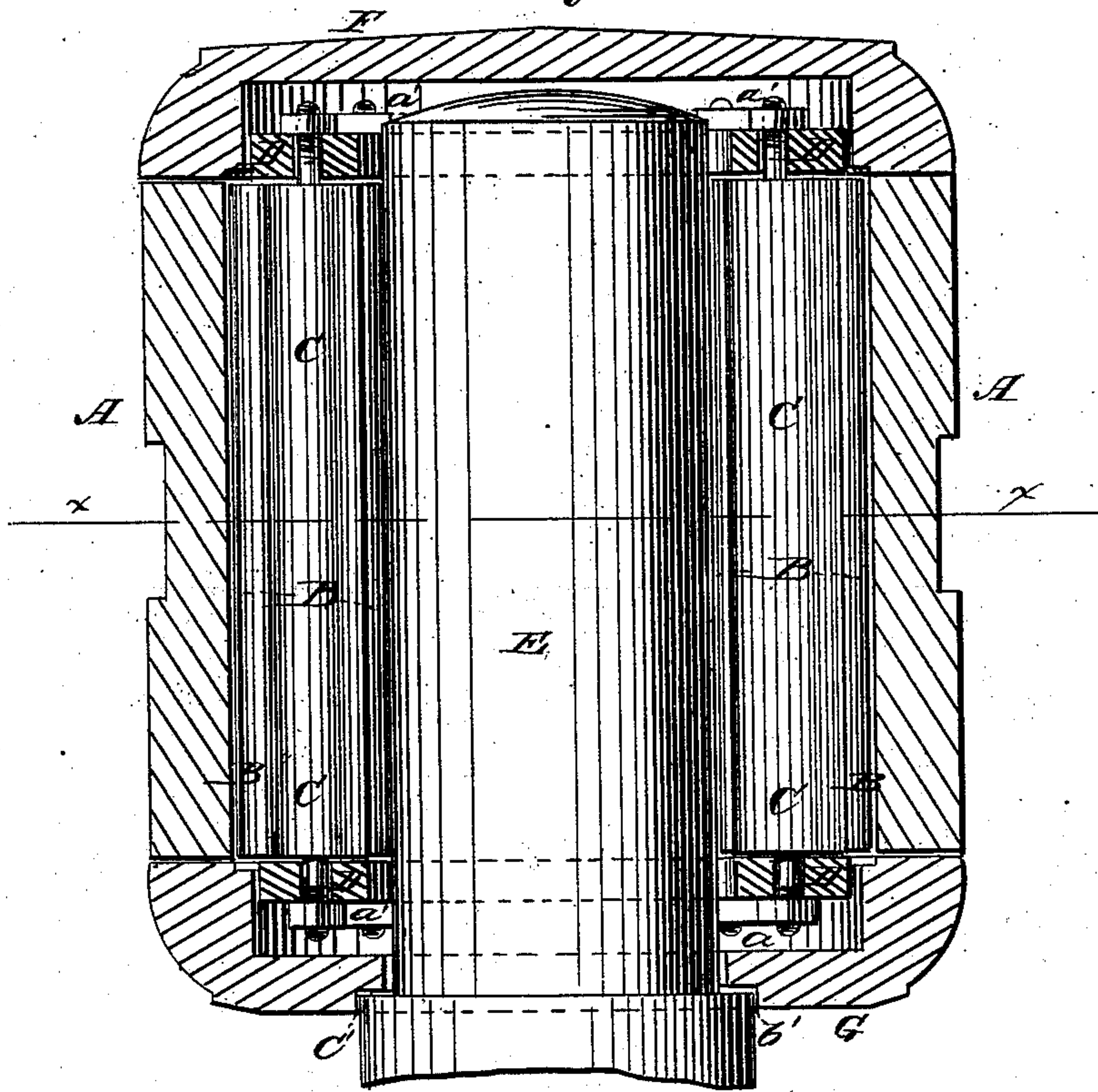
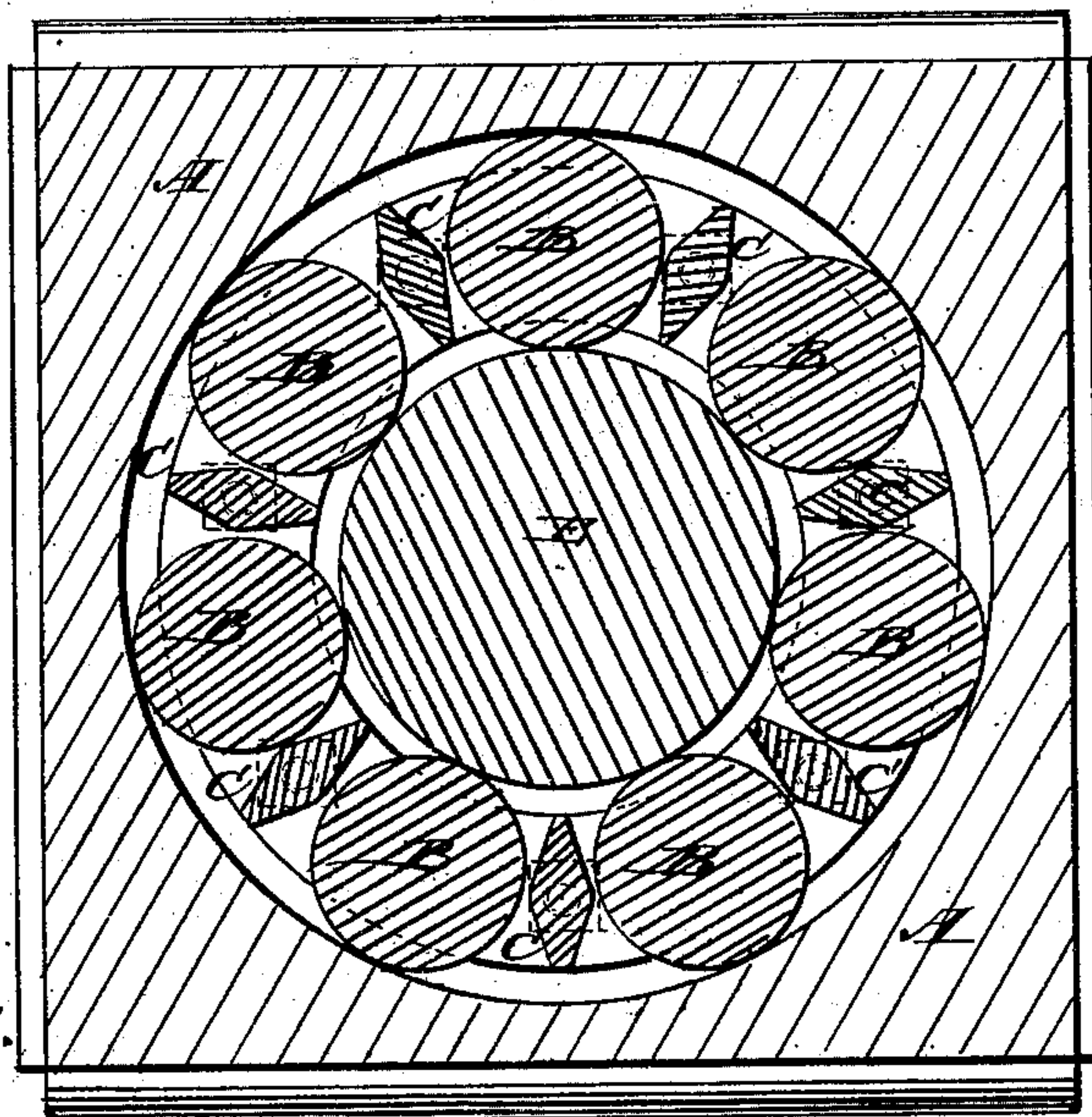


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE W. THOMAS, OF BEAR RIVER, NOVA SCOTIA.

AXLE-BOX.

SPECIFICATION forming part of Letters Patent No. 224,971, dated February 24, 1880.

Application filed August 13, 1879.

To all whom it may concern:

Be it known that I, GEORGE W. THOMAS, of Bear River, in the county of Digby, Nova Scotia, have invented a new and Improved Axle-Box, of which the following is a specification.

Figure 1 is a sectional elevation of the box set on an axle. Fig. 2 is a transverse section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide a means whereby the friction caused by the contact of moving and stationary bodies—such as wheel hubs and axles, pulleys, and mill-shafting, &c.—may be greatly lessened.

Referring to the drawings, A is the box; having a cylindrical bore, fitting closely within which is a circle of rollers, B, alternating with diamond-shaped bars C, reaching the full length of the box. The rollers are pivoted at each end in the roller-rings D, that project into the ends of the box, which are hollowed out for this purpose, and the ends of the bars are cut away so that the rings may fit over them and rest on their shoulders, and on the ends that project through the rings are screwed the nuts *a'*, that hold the parts firmly together.

The rollers are of such diameter that they project laterally beyond the bars, and they alone come in contact with the interior of the box and with the axle or shaft E, that revolves within the circle formed by them. The outer end or cap, F, of the box is turned out to accommodate the inner ring and the extreme end of the shaft, while the inner end, G, is not only turned out to accommodate in its inner face the other ring, but is bored through for

the passage of the shaft or axle and provided with an annular recess, *b'*, to receive the corresponding shoulder *c'* of the shaft.

It will be seen that should a pivot of a roller break the bars would still hold the roller in position, so that it would continue to revolve; and it will also be observed that as the rings fit snugly within the caps of the box all the parts are held firmly in place.

The caps may be secured on the box by bolts or screws, or in any other desirable manner.

By the use of this device hot journals are avoided, much of the power expended in friction (a great loss in many instances) is saved, the wear upon the shaft or axle is reduced to a minimum, and the necessity for oiling is almost if not quite obviated.

This device is applicable to carriage, wagon, car, and all other axles, and to all shafting. Neither the box nor axle has any taper, and in this respect they differ from the common axles and boxes.

I am aware that the friction-rolls of an axle-box have been heretofore placed in a hinged or loose frame, as well as arranged loosely and without journals in a diaphragm; but

What I claim is—

The combination, with the friction-rolls of an axle-box journaled in rings D, of the diamond-shaped bars C, extending the whole length of box, having cut-away threaded ends that pass through the rings, and provided with end nuts, as shown and described.

GEORGE WELTON THOMAS.

Witnesses:

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