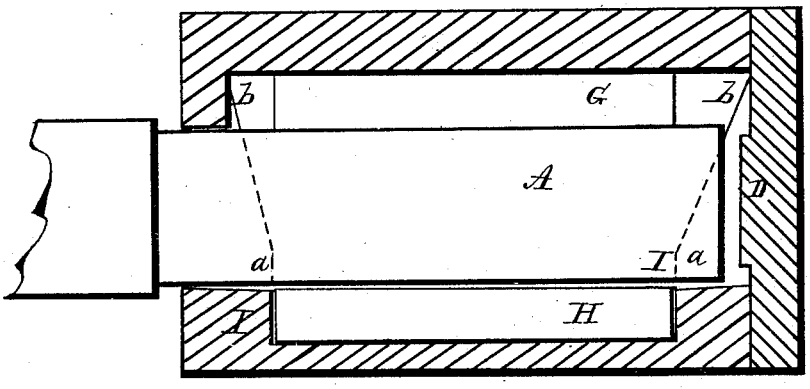
(No Model.)

A. M. WELLINGTON.

ANTI FRICTION JOURNAL BOX BEARING.

No. 342,488. Patented May 25, 1886.

Fig. 1.



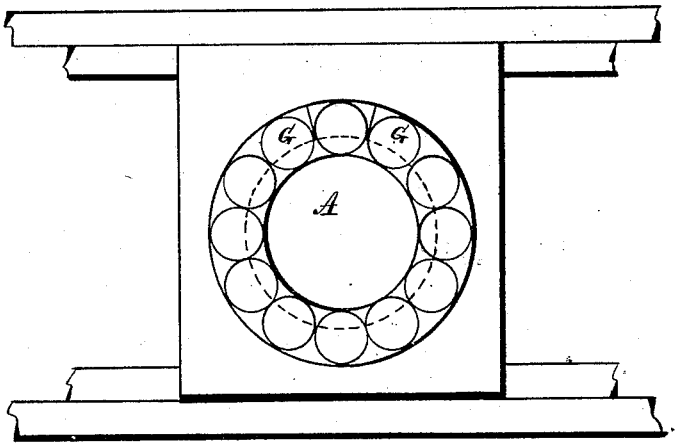


Fig. 2.

Witnesses.
J. H. Burridge.
J. H. Bateman

Inventor.
A. M. Wellington
W. H. Burridge Atty.

UNITED STATES PATENT OFFICE.

ARTHUR M. WELLINGTON, OF NEW YORK, N. Y.

ANTI-FRICTION JOURNAL-BOX BEARING.

SPECIFICATION forming part of Letters Patent No. 342,488, dated May 25, 1886.

Application filed February 8, 1886. Serial No. 191,138. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR M. WELLINGTON, of the city, county, and State of New York, have invented a new and useful Improvement in Anti-Friction Journal-Box Bearings, of which the following is a full and true description, reference being had to the drawings hereunto attached.

My invention relates to that class of journal-bearings which rely upon the aid of movable rollers surrounding the axle, and more directly to those which use such rollers wholly disconnected from each other. The device is more especially intended for the journals of wheeled vehicles, but is equally applicable to any other journals in which all or the greater portion of the load is concentrated upon one side of the bearing.

The novelty claimed lies in the device by which the rollers are enabled to take such course as they may independently of each other while sustaining the load, but are brought back into their proper place when they have passed from under the load, and hence oppose no resistance to motion in any direction.

In the drawings like letters denote like parts, in which Figure 1 is a transverse section of the box through the center of the axle; and Fig. 2 is a front view of the box with the face-plate C, Fig. 1, removed.

The axle A is surrounded by a series of rollers, G and H, of any convenient size, H representing those rollers which have passed from under the load. The rollers may be somewhat chamfered or rounded off at their ends to prevent any sharp angles. The number of rollers should be such as to completely surround the axle A, with as little unoccupied space as possible for practical use, although considerable latitude is admissible in this respect, if other necessary conditions are complied with. The interior of the axle-box B is cylindrical, and of an internal diameter very slightly greater than the united diameter of the journal and surrounding rollers. The axle A has preferably no end collar, any excess of end-play being taken up by an end plate, D. The axle-box B has guides or channel-bars I I attached to or otherwise connected with it, along that part of the interior which is opposite to the loaded side of the axle at such a horizontal distance apart as to barely leave free passage for the rollers H when passing around under the journal A. These guides I I are flared out at their upper extremities from *a* to *b*, being beveled, flared, or sloping faces, for a purpose to be described, and leaving a space at the upper part of the interior of the axle-box truly cylindrical for a considerably greater distance than the length of the rollers. When the axle A is in motion, the loaded rollers G G G move with it and push the loose rollers H H around with them through and between the faces of the guide-bars I I. If the loaded rollers G G should be displaced in any way from their normal path while sustaining the load, they are free to roll in any direction until they have passed from under the load, when the beveled or flared extremities *a b* of the guides I I bring them into their proper position transversely, while the pressure of the rollers against each other brings them evenly together into the proper position to take the load again in their turn. When the axle is in motion, the loose rollers H H H remain closely in contact with each other, and all the play allowed is distributed with approximate uniformity between the bearing-rollers G G G. It is essential for the most perfect action that the end-play of the rollers G G G should be considerably more than that of the axle; that the rollers should be as large as possible; that they should completely fill the annular ring as nearly as their ready insertion permits; that the guide-faces I I should reach at least as high as to the center of the rollers, and should be, for a little distance, at least, parallel with each other, to insure that the rollers shall not get out of parallel with the axle, and, finally, that the rolling surfaces should all be of hard and durable material, according to the load on the axle, and truly cylindrical. The surfaces then become cold-rolled by pressure, and lose little by attrition. Considerable latitude is possible in any one of these conditions; but any radical departure from any one of them is liable to prevent the best results.

The journal-box, as a whole, may be of any material and mechanical construction.

I have described what I regard as the best mode of applying my invention; but there are

undoubtedly other ways of applying it. I do not therefore wish to limit myself to the particular method herein described.

My invention consists, broadly, in the use of loose rollers, with beveled, flaring, or sloping guide-faces to bring the rollers, while unloaded, into proper position before taking the load.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In journal-bearings, the combination of beveled, flared, or sloping guide-faces with loose rollers, substantially as herein set forth, and for the purpose specified.

2. In journal-bearings, the combination of straight guide-faces with beveled or sloping ends with loose rollers, substantially in the manner described.

3. In journal-bearings, the combination of an axle, end stop or boss, beveled, flaring, or sloping guides, and loose rollers, substantially as described, and for the purpose herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR M. WELLINGTON.

Witnesses:
W. H. BOARDMAN,
W. H. HITCHCOCK.