

(No Model.)

J. W. HYATT.

GUIDE FOR BEARINGS WITH LOOSE ROLLERS.

No. 522,214.

Patented July 3, 1894.

Fig. 1.

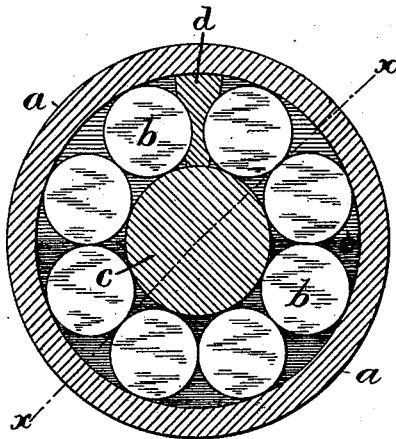


Fig. 2.

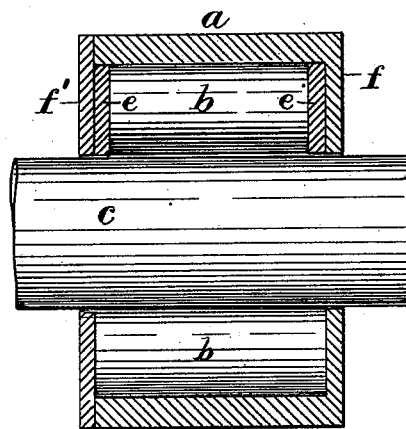


Fig. 4.

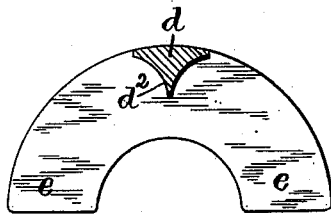


Fig. 3.

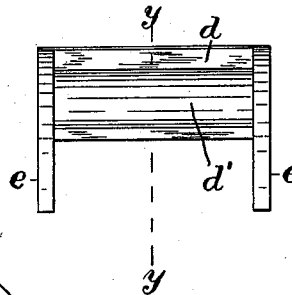
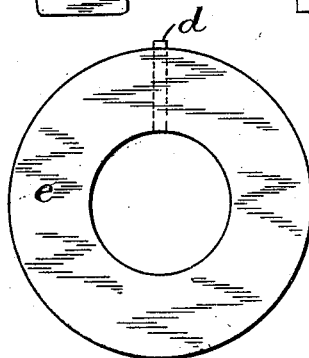


Fig. 5.



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UNITED STATES PATENT OFFICE.

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GUIDE FOR BEARINGS WITH LOOSE ROLLERS.

SPECIFICATION forming part of Letters Patent No. 522,214, dated July 3, 1894.

Application filed October 10, 1893. Serial No. 487,786. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HYATT, a citizen of the United States, residing at Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Guides for Bearings with Loose Rollers, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to preserve the parallelism of a series of rolls in an anti-friction journal box and to thus prevent the crowding and abrasion which result if the rolls are allowed to twist within the box.

Such twisting throws the ends and corners of the rolls into closer contact with the inner side of the casing and throws the middle portion of the rolls into closer contact with the axle, thus producing an unnatural pressure and grinding at such points, and by cramping the rolls, causes them to slide instead of roll as intended. Such sliding tends to wear flat places on the rolls and wholly destroys their efficiency.

The improvement consists in a longitudinal bar inserted in the casing between two of the rolls and provided at its opposite ends with circular yokes extended partly or wholly around the shaft and guided by the casing, or shaft, or both. The bar with the yokes moves freely around the journal with the rolls. The yokes thus operate to hold the bar and the rolls constantly parallel with the journal in their movement around the same.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is a cross section of a roller bearing provided with my improvements, the rolls not being in section. Fig. 2 is a longitudinal section, where hatched, on line x, x , in Fig. 1, the journal and rolls not being in section. Fig. 3 is a side elevation of the guide and yokes shown in Fig. 1. Fig. 4 is a cross section of a guide adapted to fit between the rolls without separating the same; and Fig. 5 shows an alternative construction.

The casing is shown with eight anti-friction rolls b around the journal c . The casing is shown at one end with a solid head f , and at the opposite end with a removable head f'

to insert the rolls and the guide. The head f' may be secured to the casing by any suitable means.

In Figs. 1 and 3 the bar d which forms the guide is shown provided upon its opposite side with concave recesses d' to fit the contiguous rolls, and is provided at its opposite ends with semi-circular yokes e fitted movably to the casing and journal. The yokes hold the guide d parallel with the journal, and the guide with its yokes turns freely within the casing as the rolls rotate, and operates to prevent their displacement in any appreciable degree. The tendency of the rolls to twist within the casing is commonly caused by some trifling obstruction; and being very slight is easily corrected by contact with the parallel guide, and no pressure is therefore developed to wrench the guide from its position or to crowd the yokes against the casing and produce any appreciable friction.

The rolls adjacent to the guide in Fig. 1 are shown separated by the thickness of the guide; but where the rolls are so proportioned as to fill the entire casing and roll in contact with one another, the guide may be made of approximately triangular shape, as shown in Fig. 4, and fitted to the outer sides only of two adjacent rolls. By curving the sides of the guide as indicated at d^2 in Fig. 4 to fit the adjacent rolls, the guide is made of the greatest possible cross section and its strength is correspondingly increased.

The yokes when made semi-circular may be applied to the shaft without removing the journal from its bearing; but where it is desired, as where the end of the shaft is accessible to apply the guide, the yokes may be made to embrace the entire shaft as shown in Fig. 5, which exhibits an end view of such yokes with a guide of flat rectangular cross section projected above the outer sides of the yokes. With the guide thus projected beyond the yokes, the latter would not touch the casing, but would be fitted movably to the axle alone, which would suffice to hold the guide in the desired position.

In Fig. 2 it will be observed that where the yokes extend only half way around a journal, a corresponding number of the rolls lie be-

tween the yokes, and hence require to be shorter than the remainder of the rolls which are fitted loosely to the heads of the casing.

5 By the removal of the head *f'* the guide may be readily removed with the rolls which lie between the two yokes. The guide, and its condition, may thus be readily inspected.

10 By making the sides of the guide bar concave to fit the rolls, the wearing surface upon the guide is increased, but the function of the guide in holding the loose rolls parallel within the casing is wholly independent of any such feature, and the bar may be made of any cross section to lie between the con-

15 tiguous parts of two rolls.

It will be obvious that the yokes may be fitted snugly to either the casing or axle alone to perform their functions, as the yokes may

be held free from displacement, by contact with either the casing or axle, and thus main- 20 tain the parallelism of the guide, as desired.

Having thus set forth the nature of my invention, what I claim herein is—

The combination, in a roller bearing, of a series of loose rolls in contact with one an- 25 other, and a single bar fitted between the adjacent sides of two rolls, and having at its opposite ends yokes fitted movably to the axle or casing, as herein set forth.

In testimony whereof I have hereunto set 30 my hand in the presence of two subscribing witnesses.

JOHN W. HYATT.

Witnesses:

CHARLES S. LOCKWOOD,
THOMAS S. CRANE.