

(No Model.)

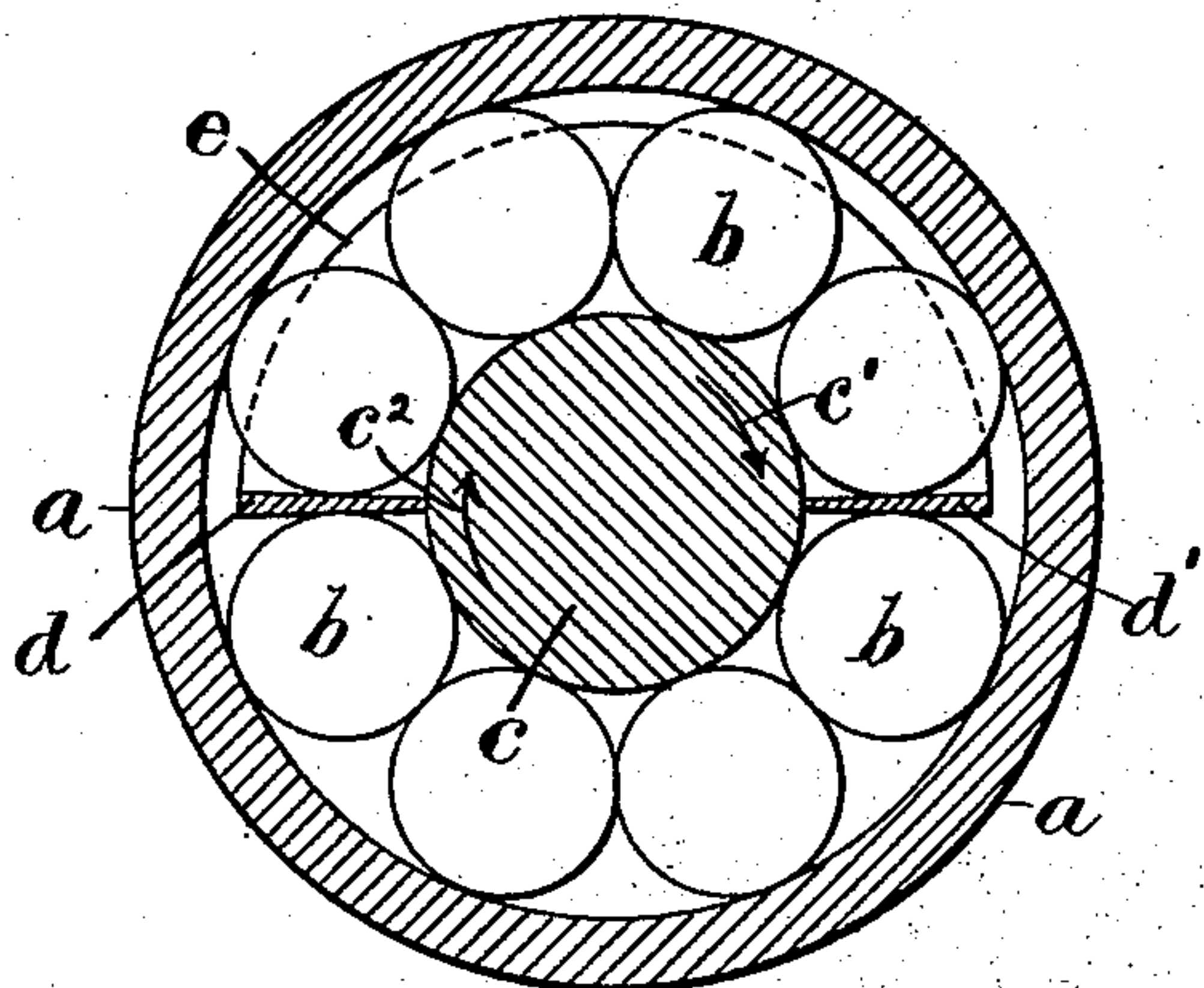
J. W. HYATT.

## GUIDE FOR ROLLS IN ROLLER BEARINGS.

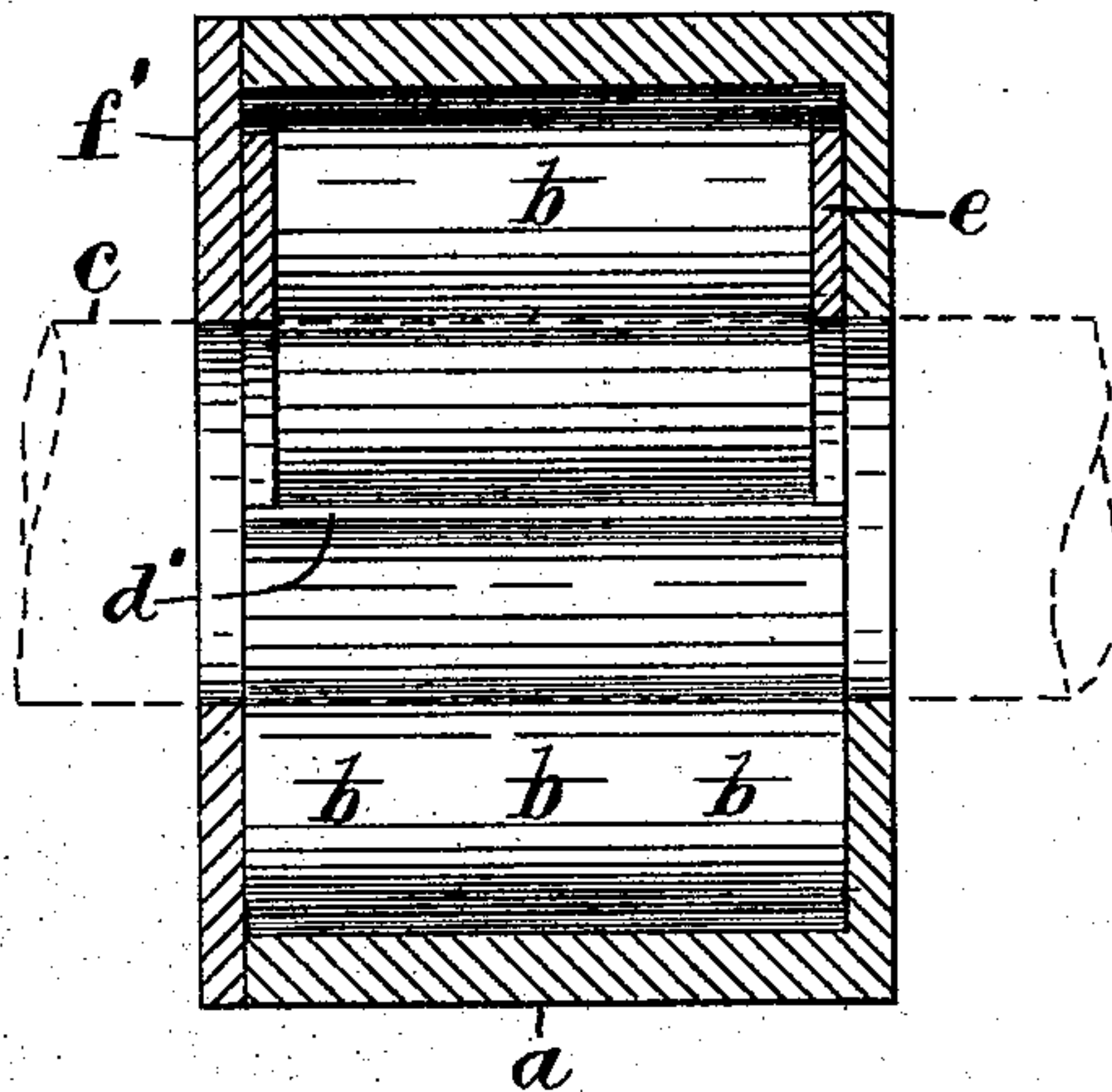
No. 506,692.

Patented Oct. 17, 1893.

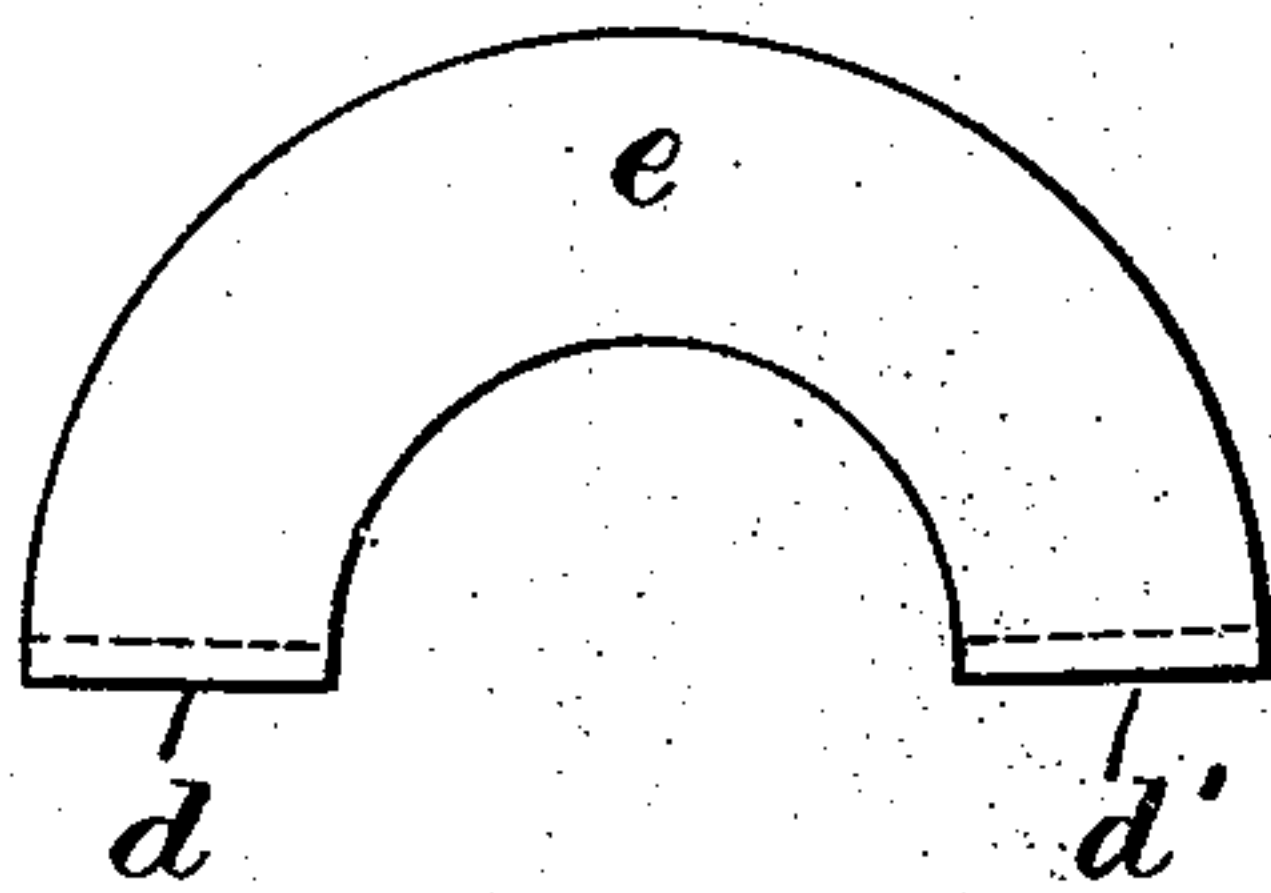
*Fig. 1.*



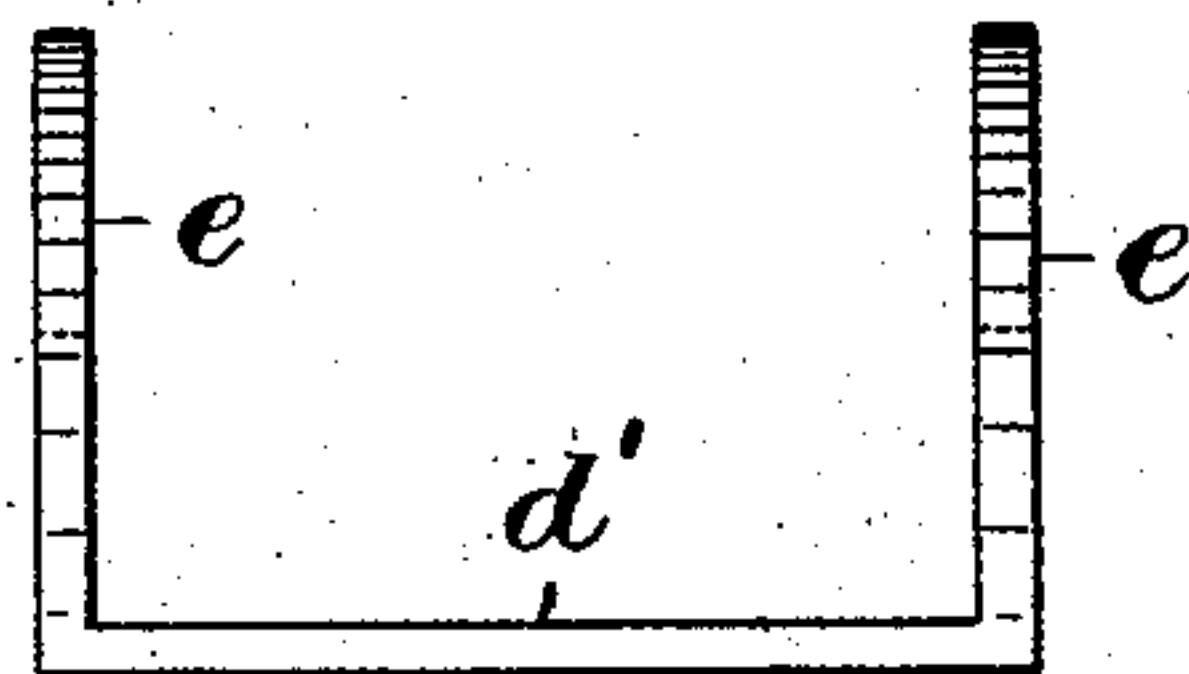
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

JOHN W. HYATT, OF NEWARK, NEW JERSEY.

## GUIDE FOR ROLLS IN ROLLER-BEARINGS.

SPECIFICATION forming part of Letters Patent No. 506,692, dated October 17, 1893.

Application filed November 2, 1892. Serial No. 450,738. (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 Rolls in Roller-Bearings, 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.

The invention is especially intended for application to a series of loose rolls running within a journal box in contact with one another, and the invention consists in a pair of guides inserted in the casing upon opposite sides of the shaft between the peripheries of the rolls and connected rigidly together by a semi-circular yoke. The strain upon such guides is, as will be shown hereinafter, completely balanced, so that no strain is thrown upon the yoke, nor is it possible for the rolls or guides to become tipped in the casing.

The guides may be formed of any suitable cross section between the peripheries of the rolls at opposite sides of the shaft, and movable with the rolls as they rotate within the casing.

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

Figure 1 is a cross section on a roller journal box taken across the middle of Fig. 2, with the axle inside the same. Fig. 2 is a section through the center of the casing shown in Fig. 1, with the axle in dotted lines. Fig. 3 is an end view, and Fig. 4 a side view of the guides with their attached yokes.

The casing *a* is shown with eight anti-friction rolls *b* around the axle *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 guides. The head *f'* may be secured in the casing by any suitable means.

The guides *d, d'* are simply flat bars tied together at each end by a semicircular yoke *e* which is interposed between the ends of the rolls and the head of the casing upon one side of the axle. The yoke encircles one half the periphery of the shaft to reach the guides at opposite sides of the same; but does not need to make contact with the shaft or casing, as the pressure upon the guides is perfectly balanced, as will be hereinafter set forth. The yoke is shown entirely clear of the casing in the drawings, but fitted to the shaft, around which it turns without any pressure upon the same. The rolls consist in loose cylinders of suitable material; one half of the rolls being made of suitable length to fit between the yokes, and the remainder of the rolls fitted between the heads *f, f'*.

The guides, with their yoke, turn freely within the casing as the rolls rotate inside the same, and offer no resistance to the rolls, except the latter become twisted, and the pressure of the rolls upon the guide *d* then operates to press the attached guide *d'* in a reverse direction, which balances the strains upon the yoke and prevents the same from tipping within the casing and cramping the ends of the rolls.

Supposing the shaft *c* to be rotated in the direction of the arrows *c'* and *c''* in Fig. 1, the pressure of the rolls is obviously exerted in opposite directions upon the guides *d, d'*, the rolls pressing upon the under side of the guide *d* and upon the upper side of the guide *d'*. Such pressure being equal, the yoke is unaffected thereby, and is able, with the guides, to move freely within the casing without pressing against the ends of the rolls or the heads *f, f'*. The balanced pressure upon the two guides keeps them in their positions without any strain, and obviates the necessity of guiding them by a positive contact of the yoke with the casing or shaft. I have sometimes used the two guides with a single yoke connected to the same ends of the guides. Such a yoke may, with the guides, be withdrawn from the casing without removing the rolls, if the head *f'* of the casing be removed.

The tendency of the rolls to twist within the journal box is commonly caused by some trifling obstruction, and being very slight is easily corrected by the means which I have

described; and the obliquity of the rolls is thus prevented from increasing and causing any injury to the casing or axle. By the removal of the head  $f'$ , the guides may be readily withdrawn with the rolls which lie between the two yokes. The guides, and their condition, may thus be readily inspected.

As the pressure upon the guides is balanced, the friction between the rolls and guides is nominal but may be reduced by a powdered or liquid lubricant if desired.

It is obviously immaterial what the cross section of the guides may be, as their function is to hold the rolls in easy contact with one another, and to thus resist any twisting of the rolls from the required parallelism. The guides may therefore be made with con-

cave sides to increase their wearing surface against the rolls.

Having thus set forth my invention, what I claim is—

The combination, in an anti-friction journal box, of a series of loose rolls in contact with one another, two guides fitted between rolls at opposite sides of the box, and a yoke connected rigidly to the guides, substantially as set forth.

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

JOHN W. HYATT.

Witnesses:

L. LEE,

THOMAS S. CRANE.