

C. S. LOCKWOOD.
 ROLLER BEARING WITH SECTIONAL ROLLS.
 APPLICATION FILED OCT. 27, 1917.

1,266,286.

Patented May 14, 1918.

Fig. 1.

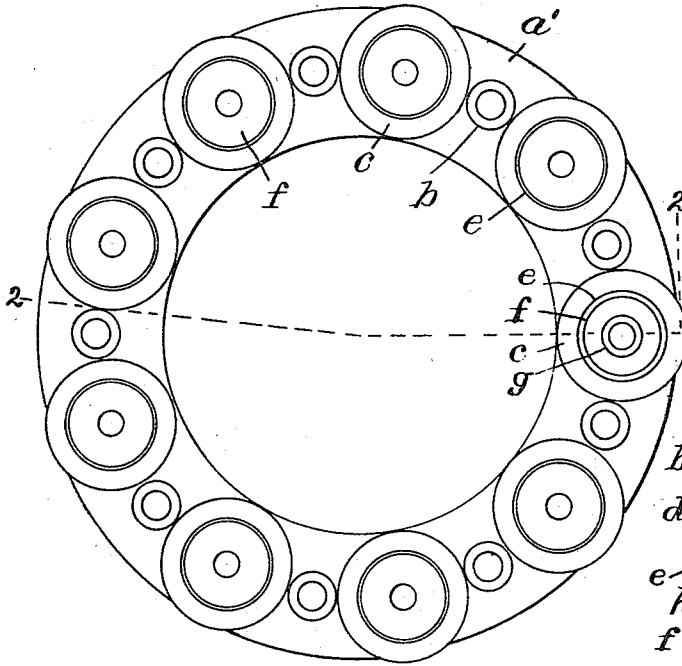


Fig. 2.

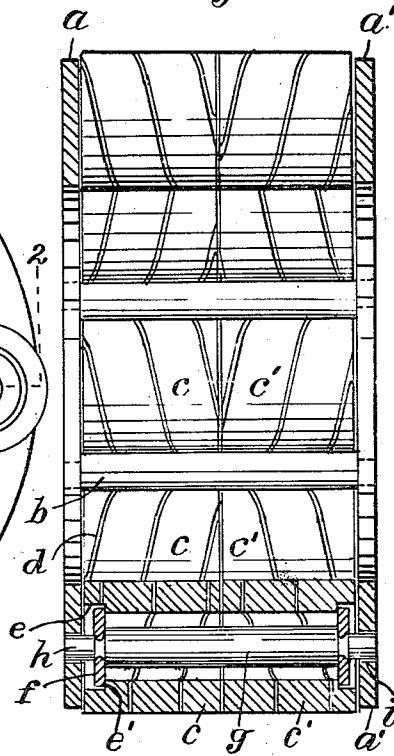


Fig. 3.

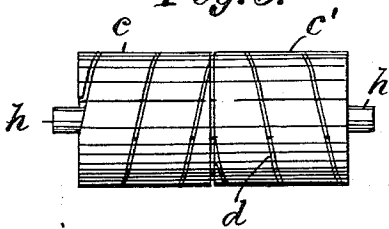


Fig. 4.

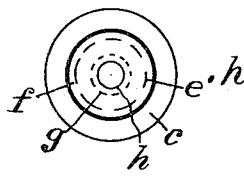


Fig. 8.

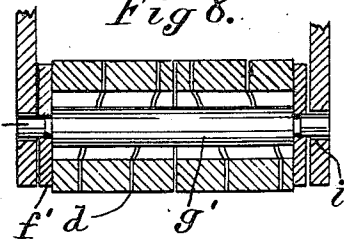


Fig. 7.

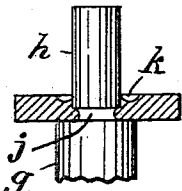


Fig. 5.

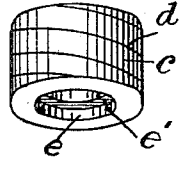


Fig. 10.

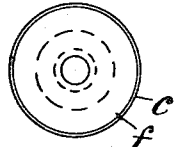


Fig. 9.

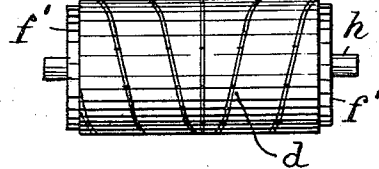
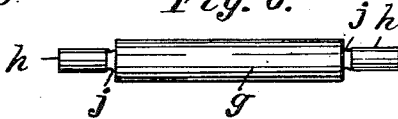


Fig. 6.



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UNITED STATES PATENT OFFICE.

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ROLLER-BEARING WITH SECTIONAL ROLLS.

1,266,286.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES S. LOCKWOOD, a citizen of the United States, residing at 496 Clinton avenue, Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Roller-Bearings with Sectional Rolls, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to an improved construction for the rolls of a roller-bearing, by which rolls spirally grooved or wound in opposite directions may be employed to facilitate the distribution of oil in the bearing, and without any tendency of the rolls to crowd toward either end of the bearing so as to wear upon the heads of the bearing or the heads of a cage movable therein.

Such tendency is avoided by means which operate independently of the cage to hold the roll-sections from moving apart from one another.

To prevent the sections of the roll from working apart from one another when carrying a heavy load, a tie-bar is inserted through the bore of the roll and collars secured upon the tie-bar in contact with shoulders upon the ends of the roll; thus preventing the sections from separating, but permitting them to turn freely independent of one another when required.

Such tie-bar is preferably formed with pintles at the ends, the tie-bar being shouldered down to form such pintles, and at the same time to form shoulders to which the collars may be secured. Such pintles are adapted to fit loosely in holes in the heads of a roll-cage, and thus hold the rolls in parallelism during their movement in the bearing.

The collars may be very cheaply secured to the tie-bars adjacent to the end shoulders, by grooving the pintles next the shoulders, and after the collars are applied thereto pressing the metal of the collar inward against the pintle and forcing it into the groove, which locks the collar permanently thereon.

The invention will be understood by reference to the annexed drawing, in which Figure 1 is an end-view of a roll-cage with one of the cage-heads removed; and the collar in the nearer end of one of the rolls omitted. Fig. 2 is a section of the roll-cage

on line 2—2 in Fig. 1, with both heads applied to the rolls. In Fig. 2 the ends of the rolls are recessed to receive the collars. Fig. 3 is a side-view of one of such rolls removed from the cage; Fig. 4 is an end-view of said roll; Fig. 5 is a perspective view of one section of said roll; Fig. 6 is a side-view of the tie-bar used in said roll; Fig. 7 is a view of one end of the tie-bar enlarged with a collar locked thereon; Fig. 8 shows a section similar to that in the lower part of Fig. 2 with the collars bearing upon the extreme ends of the roll; Fig. 9 is a side-view of such a roll, and Fig. 10 is an end-view of such a roll.

a and a' designate cage-heads of usual construction, the heads a being omitted in Fig. 1. b designates cross-ties having their ends secured to the heads when the parts are all assembled. Each roll is shown divided transversely into sections c and c' , being formed of strands wound spirally in opposite directions with grooves or interspaces d between the coils. In Figs. 2 to 5 inclusive, the end of the roll is shown with recess e forming an annular shoulder e' far enough within the end of the roll to receive a collar f . A tie-bar g is shown extended through the roll in the lower part of Fig. 2, its ends being shouldered down forming pintles h to fit rotatably in the holes i in the cage-head.

The shoulders upon the tie-bar are at such distance apart that when the collars f are secured upon the pintles the roll-sections c and c' are held snugly together but rotatable independently of one another.

A very effective way of securing the collars next the shoulders upon the tie-bars is shown in Figs. 2, 6, and 7, where the neck of the pintle is shown with an annular groove j , and a collar is shown applied to the pintle in contact with the shoulder upon the tie-bar, and the metal of the collar pressed inwardly around the pintle, as indicated by the depression k ; such pressure upon the metal crowding it into the annular groove j , as shown in Fig. 7, and locking the collar firmly to the tie-bar.

By forming the recesses e in the ends of the rolls, the collars can be sunken therein and the bearing-surface of the roll thus enabled to extend from one of the heads to the other in the cage.

The tie-bar and collars can operate in precisely a similar manner if the collars are

applied to the outer ends of the roll, as shown in Fig. 8, where the shoulders upon the tie-bar *g'* are shown coincident with the outer ends of the roll, and the collars *f''* secured against the said shoulders by the means described in connection with Fig. 7. With the same cage, the rolls of this latter construction are necessarily shorter than with the design shown in Fig. 2.

It will be seen from the above description that any suitable means may be used to prevent the sections of the roll from moving apart from one another, and thus independently avoiding any tendency of the roll to wear upon the head of the cage or bearing.

Having thus set forth the nature of the invention what is claimed herein is:

1. In a roller bearing, a tubular sectional roll divided transversely, and the sections formed respectively of strands wound spirally in opposite directions, and the sections provided with means independent of the cage to hold the two sections of the roll positively from movement away from one another.

2. In a roller-bearing, a tubular sectional roll divided transversely the sections being

formed respectively with right and left-hand spiral grooves, and a tie-bar in the bore with collars secured thereon at the ends of the roll to hold the sections together.

3. In a roller-bearing, a tubular sectional roll divided transversely the sections being formed respectively with right and left-hand spiral grooves, the bore of the roll at opposite ends being recessed to form a shoulder in the bore, and a tie-bar in the bore having collars secured thereon in contact with the said shoulders to hold the two sections together.

4. In a roller-bearing, a tubular sectional roll divided transversely the sections being formed respectively with right and left-hand spiral grooves, and a tie-bar in the bore shouldered down at the ends to fit holes in the roll-cage and the ends grooved adjacent to the shoulders; collars fitted upon the ends adjacent to the shoulders and confining the sections upon the tie-bar, and the metal of the collars forced into the said grooves to lock the collars in place thereon.

In testimony whereof I have hereunto set my hand.

CHARLES S. LOCKWOOD.