No. 782,850. PATENTED FEB. 21, 1905.

F. P. HINCKLEY.

ROLLER BEARING.

APPLICATION FILED JAN. 7, 1904. RENEWED JAN. 13, 1905.

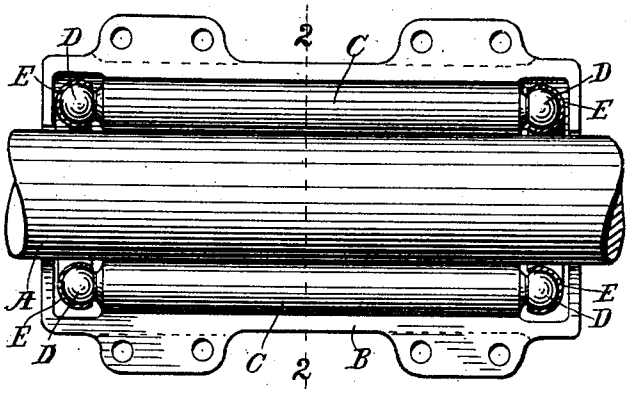

Fig. 1.

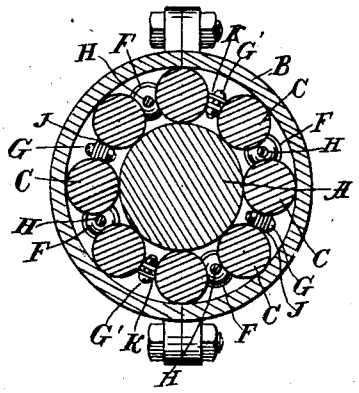

Fig. 2.

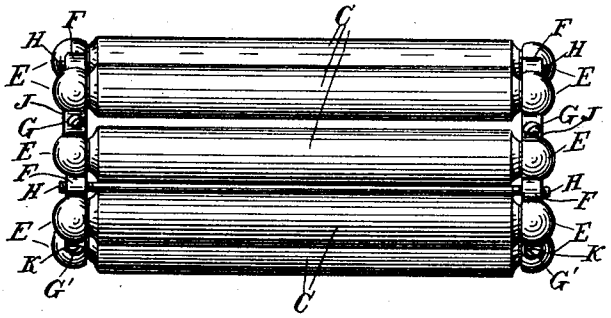

Fig. 3.

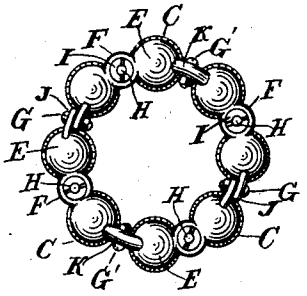

Fig. 4.

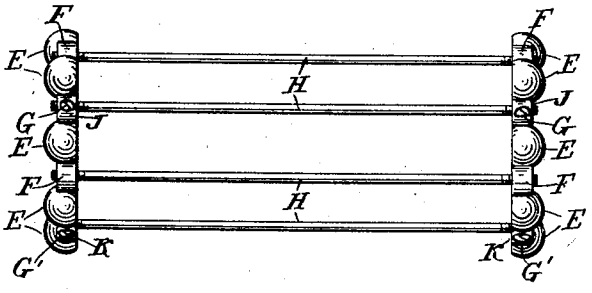

Fig. 5.

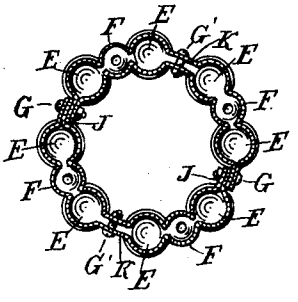

Fig. 6.

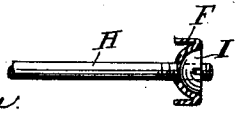

Fig. 7.

Witnesses

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No. 782,850. Patented February 21, 1905.

UNITED STATES PATENT OFFICE.

FREDERICK PERRY HINCKLEY, OF JACKSON, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO GEORGE A. McKEEL COMPANY, OF JACKSON, MICHIGAN, A CORPORATION.

ROLLER-BEARING.

SPECIFICATION forming part of Letters Patent No. 782,850, dated February 21, 1905.

Application filed January 7, 1904. Renewed January 13, 1905. Serial No. 240,863.

To all whom it may concern:

Be it known that I, FREDERICK PERRY HINCKLEY, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Roller-Bearings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in roller-bearings, and more particularly to the "cage" or rings by which the rolls are spaced apart; and its object is to provide the same with certain new and useful features hereinafter more fully described, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a device embodying my invention with a portion removed to show the construction; Fig. 2, a transverse section of the same entire and taken on the line 2 2 of Fig. 1; Fig. 3, a detail of the rolls and cage in side view; Fig. 4, an end view of the same; Fig. 5, a detail of the cage only, taken in side view; Fig. 6, an elevation of one of the spacing-rings, showing the side toward the rolls; and Fig. 7, an enlarged detail of the means of attaching the tie-rods and rings to each other.

Like letters refer to like parts in all of the figures.

A represents a shaft; B, a journal-box having interior dimensions sufficient to surround the shaft and rolls; C, a series of rolls between the shaft and journal-box. These rolls are provided with ball-shaped ends D, which ends are inserted in suitable sockets E in the spacing-rings. These ends of the rolls rotate in these sockets about the axial line of the rolls and also turn freely in the sockets in all directions after the manner of a ball-and-socket joint, and thus will not bind should the rolls become out of alinement with the axis of the shaft. These spacing-rings are also divided at opposite sides, as at J J, and extended to overlap, and the two parts are detachably secured to each other by suitable bolts or fastenings G, whereby the rings may be placed around a shaft at any point. These rings are also provided at suitable intervals with concave recesses F, in which are seated semiglobular nuts I, having suitable nicks across their flat side whereby they may be turned by a suitable tool. These rings are connected by tie-rods H, having screw-threaded ends inserted in the nuts I and extending through suitable openings in the rings. I prefer to make the rings of stamped sheet metal, each ring made of two parts and each part folded longitudinally upon itself and having the sockets and recesses formed therein by suitable dies and punched with suitable openings to receive the tie-rods and bolts. These sockets E are preferably made to inclose more than one-half of the ball ends D and are sprung apart slightly to insert these ends and are closed upon said ball ends to retain the same in the sockets and also to take up for wear by means of the coupling-bolts G and the other bolts, G′, inserted in the folded connecting portions J and K between the sockets. I have shown the spacing-rings connected by the tie-rods H; but they will stay in place on the ends of the rolls and operate without the rods, if desired. I do not, therefore, limit myself to the use of these rods in conjunction with the rings, but claim the rings either with or without the rods.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a roller-bearing, spacing-rings flexibly connected to each other, and rolls connected to the spacing-rings by ball-and-socket joints.

2. In a ball-bearing, spacing-rings having yielding ball-sockets, radial clamping-bolts in the rings, and rolls having ball-shaped ends inserted in said sockets.

3. In a ball-bearing, a spacing-ring having its inner and outer portions movable toward and from each other and provided at intervals with ball-sockets, radial clamping-bolts in said ring, and rolls having ball-shaped ends inserted in said sockets.

4. In a roller-bearing, spacing-rings having ball-sockets and concave recesses, rolls having ball-shaped ends inserted in said sockets and rotative therein, semiglobular nuts in the recesses, and tie-rods having threaded ends inserted in said nuts.

5. In a roller-bearing, spacing-rings divided at opposite sides and detachably connected and also provided with ball-sockets, and rolls having ball-shaped ends inserted in said sockets.

6. In a roller-bearing, spacing-rings divided at opposite sides and detachably connected, and also provided with ball-sockets and concave recesses, rolls having ball-shaped ends inserted in said sockets, semiglobular nuts in the recesses, and tie-rods having screw-threaded ends inserted in said nuts.

7. In a roller-bearing, a spacing-ring formed of sheet metal folded longitudinally and provided with ball-sockets, clamping-bolts between the sockets, and rolls having ball-shaped ends inserted in said sockets.

8. In a roller-bearing, a spacing-ring formed of sheet metal and having ball-sockets and concave recesses, semiglobular nuts in the recesses, tie-rods having screw-threaded ends inserted in said nuts, and rolls having ball-shaped ends inserted in the sockets and rotative therein.

9. In a roller-bearing, a spacing-ring formed of sheet metal and having ball-sockets and also divided and overlapped at opposite sides, and clamping-bolts between the sockets and extending through opposing parts of the ring, and also through the overlapping parts of the same.

10. In a roller-bearing, clamping-rings formed of sheet metal folded longitudinally and divided and overlapped at opposite sides, and also having ball-sockets and concave recesses, bolts extending radially through said ring, semiglobular nuts in the sockets, rolls having threaded ends inserted in the said nuts and rolls having ball-shaped ends inserted in said sockets and rotative therein.

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

FREDERICK PERRY HINCKLEY.

Witnesses:
FRANK F. NUNS,
DENIS CALLAHAN.