No. 861,870. PATENTED JULY 30, 1907.

C. S. LOCKWOOD.

ROLLER BEARING GUIDE.

APPLICATION FILED FEB. 25, 1905.

Fig. 1.

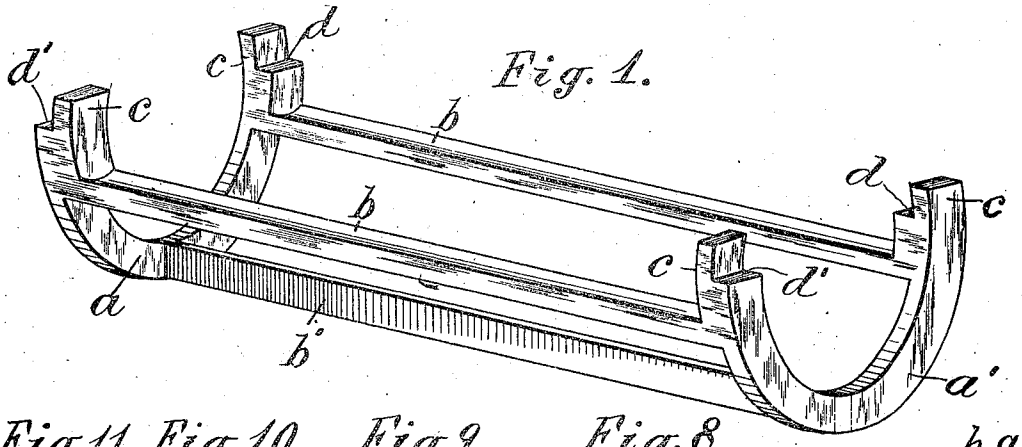


Fig. 11. Fig. 10. Fig. 2. Fig. 8.

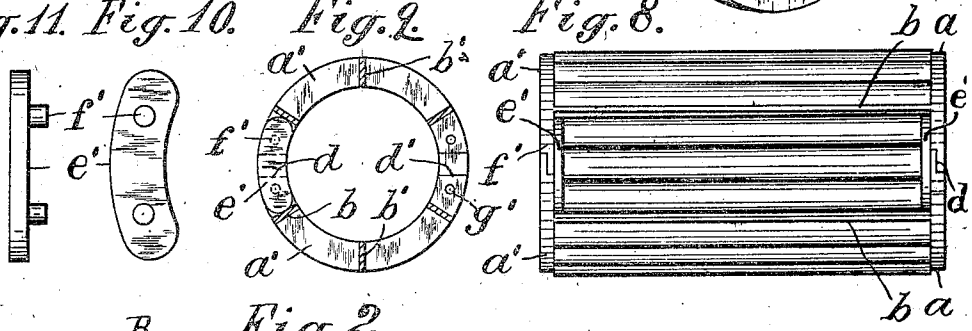


Fig. 2.

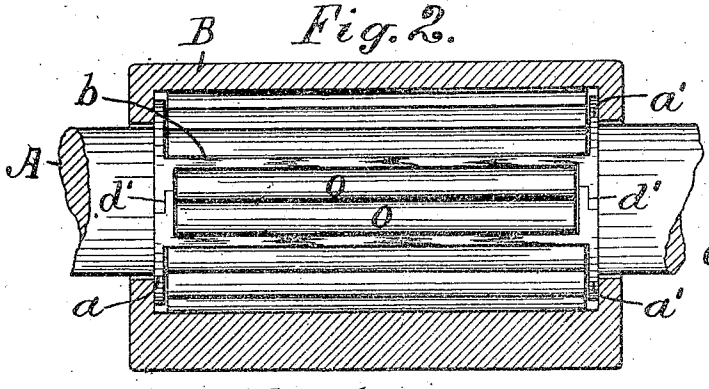


Fig. 3.

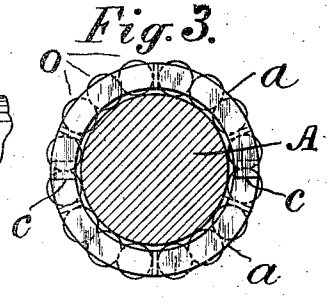


Fig. 6.

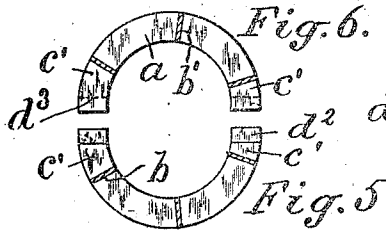


Fig. 5

Fig. 7.

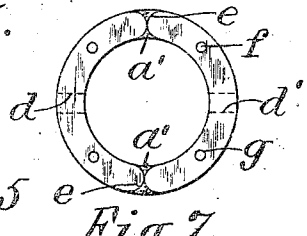
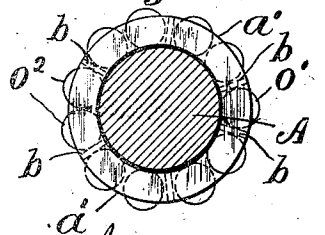


Fig. 4.



Attest:
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Thomas L. Crane, Atty.

UNITED STATES PATENT OFFICE.

CHARLES S. LOCKWOOD, OF NEWARK, NEW JERSEY, ASSIGNOR TO HYATT ROLLER BEARING COMPANY, A CORPORATION OF NEW JERSEY.

ROLLER-BEARING GUIDE.

No. 861,870. Specification of Letters Patent. Patented July 30, 1907.

Application filed February 25, 1905. Serial No. 247,217.

To all whom it may concern:

Be it known that I, CHARLES S. LOCKWOOD, a citizen of the United States, residing at 289 Market street, Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Roller-Bearing Guides, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present invention relates to a guide for the group of rolls which are often revolved in contact with one another in a roller bearing, and the invention furnishes a guide having collars at opposite ends, and divided into two parts, with the collars notched to form an overlapping joint. The half-collars may be connected by detachable fastenings, but I prefer to notch the lugs in a peculiar manner so as to make the halves of the guide-frame interchangeable, and adapted to interlock.

This construction is a great advantage in holding the collars from displacement when the parts are assembled with the rolls outside of the casing, and the construction also keeps the two parts of the frame in their proper longitudinal relation to one another when revolving within the casing, so as to prevent either from moving longitudinally and rubbing against the casing while revolving with the rollers.

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

Figure 1 is a perspective view of one half of the guide having half-lap joint; Fig. 2 is a section of a roller bearing, the casing being divided longitudinally at its center line, with the shaft, roller guide, and rolls represented within such bearing. Fig. 3 is an end view of the guide and rolls detached from the bearing, the halves of the guide in these three views being similar and suited for use with an even number of rolls. Fig. 4 shows a guide for an odd number of rolls, requiring two dissimilar castings to form the complete guide; Fig. 5 is a view of the lower casting; and Fig. 6 a view of the upper casting, both in transverse section across the tie-bars. Fig. 7 shows half collars for locking the parts of the guide together. Fig. 8 is a side view of a guide having locking plate applied to the joint; Fig. 9 is a transverse section of the same across the tie-bars, with one of the locking plates in position, and the other removed to show the pin holes; Fig. 10 shows the inner side of the locking plate, and Fig. 11 an edge view of the same.

In Figs. 1 to 3 inclusive, a, a' designate the half collars at opposite ends of the guide, and b, b', tie-bars connecting the same, the tie-bar b' being at the center of the half collar and the tie-bars b at suitable distances from the joint to admit a group of rolls when the half guides are matched together. The casing has opposite heads, with internal space sufficiently longer than the rolls, to admit the half-collers to turn loosely between the rolls and such heads.

The ends of the half collars which project beyond the tie-bars b form lugs c which at one side of the half collars are formed with notches d upon the outer side, and at the other side of the half collar are formed with notches d' upon the inner side, so that they are interchangeable with one another, and any number of castings of such shape may be made from the same pattern. The lugs are so notched that a pair of such half collars will fit together with the lugs interlocked and any end movement of the half collars upon one another be prevented.

Fig. 3 shows the groups of rolls o between the various tie-bars, and as the rolls fit snugly between the shaft A of the roller bearing and its casing B, the rolls hold the tie-bars in a fixed position between the groups, and thus tend to prevent any separation or displacement of the half collars. A guide in which the two halves are made from the same pattern or casting, as in Figs. 1 to 3, is adapted to support an even number of rolls in the bearing, but where an odd number of rolls is required to encircle the shaft in a casing of given size, the halves of the guide are not interchangeable as the tie-bars cannot be disposed at equal distances from the dividing line, and the halves of the guide are made of different patterns or castings, with all of the lugs upon one half notched externally and the lugs upon the other half notched internally. This construction is shown in Figs. 4 to 6 inclusive, with one roll o' between the bars b at one side of the guide, and two rolls o^2 between the bars b at the opposite side of the guide, and the tie-bars being suitably disposed to admit such a number of the rolls.

Fig. 5 shows one half of the guide with the lugs c' having notches d^2 upon the inner side, and Fig. 6 shows the other half of the guide with the lugs c' having notches d^3 upon the outer side. The effect of the construction is the same as that of Figs. 1 to 3, as the rolls contact with the various guide bars in such manner as to prevent the displacement of the half collars, and the notched lugs are thus held together and the guide revolves around the shaft as a unit. It is customary in guides having collars at the ends to have them fit approximately to the shaft or the casing of the bearing to hold them concentric with the shaft in their rotation; and Fig. 4 shows the sections fitted to the shaft so that if they move into contact with the same, the rotation of the shaft will assist in propelling the guide within the casing.

Any suitable means may be employed for locking the half collars together if desired. To effect this, locking plates may be applied to the inner or outer sides of the half collars, with pins upon one engaging holes in the other. The locking plates may be made in the form of supplemental half collars e shown in Fig. 7 applied

transverse to the joint of the half sections a, a', with pins f upon the half sections projecting outwardly into holes g in the supplemental plates. The supplemental plates fit against the heads of the casing when within the roller bearing and are thus held from displacement.

The application of the locking plate to the inner sides of the half collar is shown in Figs. 8 and 9, the locking plate e' extending only to the tie-bars b adjacent to the lugs c, and the pins f' upon such locking plate extending outwardly into holes g' in the half collars a and a'.

Where the locking plate lies upon the inner side of the half collars, the rolls in between the bars b are necessarily shortened by the thickness of the locking plates. The locking plate e' is shown separate in Figs. 10 and 11 with the pins f' formed integral with the plate.

Half-collars have been used in different roll cages and connected to furnish pivots for the rolls; but my construction relates to a loose roll-guide, and furnishes a special construction of such guide with divided collars at the ends, whereby they may be readily applied to opposite sides of the shaft, in cases where the end of the shaft is not accessible to slide an integral collar over the same, and suitable means is also shown for locking the half sections together when desired; the locking plates being held in their working position when upon the inner sides of the half collars by the ends of the rolls themselves, and when upon the outer sides of the half sections by the heads of the casing which retains the rolls.

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

1. In a roller bearing having groups of rolls revolving loosely in contact with one another, the combination, with a shaft and a set of loose anti-friction rolls, of a casing having opposite heads with internal space a little longer than the rolls, and a roller guide-frame in two interchangeable halves, comprising collars a, a', at the opposite ends divided as set forth, and tie-bars b, b', uniting such collars, the bars fitting loosely between the rolls in the casing and the collars fitted loosely between the ends of the rolls and the heads of the casing, and the half-collars having overlapping ends with lugs at one side of the collars formed outside of the notches d, and two lugs at the opposite sides of the half-collars formed inside of the notches d', and the lugs being thus adapted to interchangeably engage one another and to prevent longitudinal movement of the halves upon one another without fastening devices.

2. In a roller bearing having groups of rolls revolving in contact with one another in a casing, a roll guide having collars at the opposite ends divided for application to opposite sides of the shaft, and locking plates applied to the half collars across the joint of the same and engaged with such half collars to lock them together.

3. A roll guide for roller bearings having collars at the opposite ends divided for application to opposite sides of the shaft, tie-bars connecting the half collars adjacent to the joint, locking plates fitted to the inner sides of the half collars between the said tie-bars, and pins engaging the locking plates and half collars together, such locking plates being held against the half collars by the rolls between the tie-bars

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

CHARLES S. LOCKWOOD.

Witnesses:
ALFRED SLOAN, JR.,
THOMAS S. CRANE.