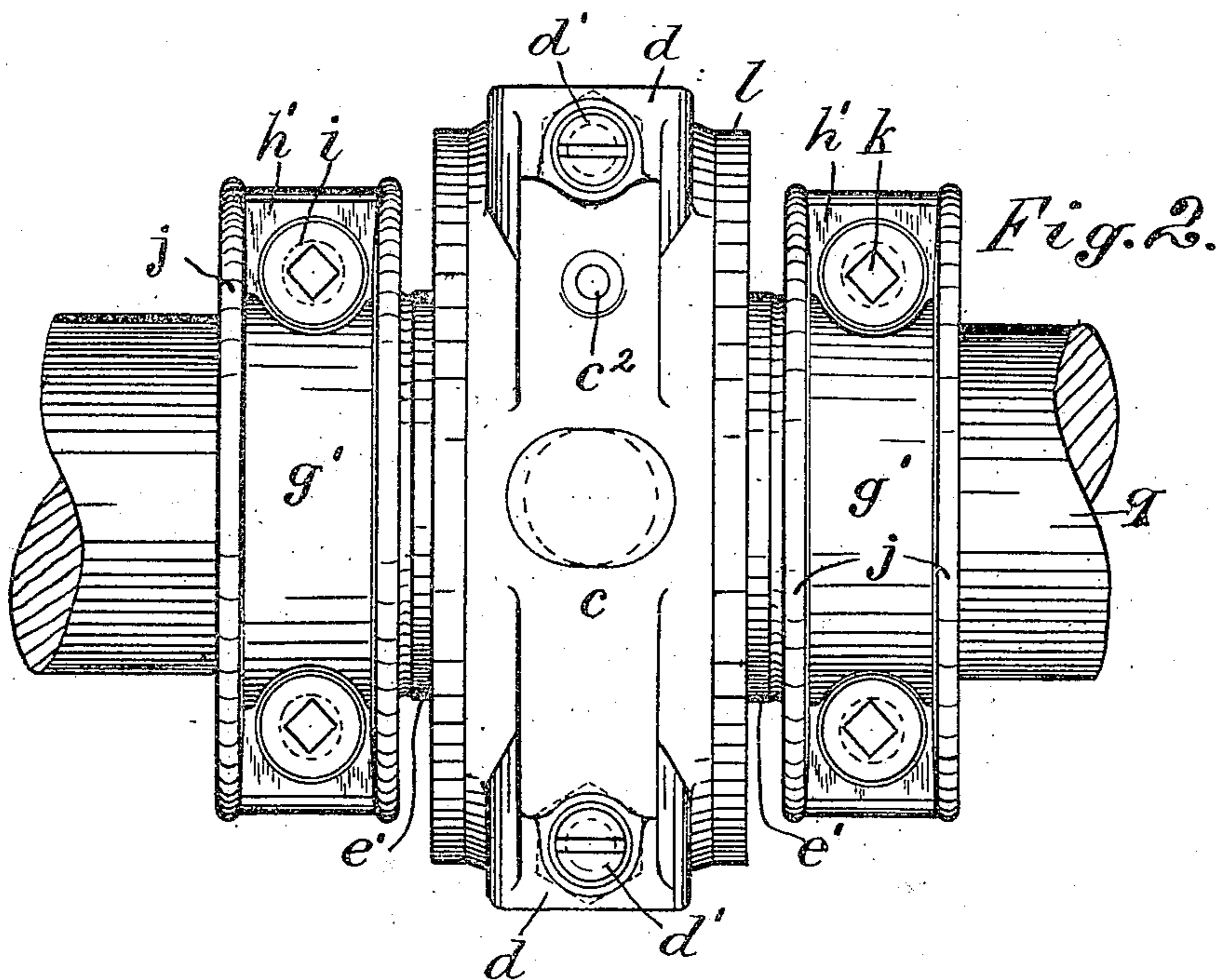


SPLIT COLLARED SLEEVE FOR ROLLER BEARINGS.
APPLICATION FILED AUG. 21, 1909. RENEWED APR. 5, 1911.

Patented May 9, 1911.

Fig. 1.



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2 SHEETS-SHEET 2.

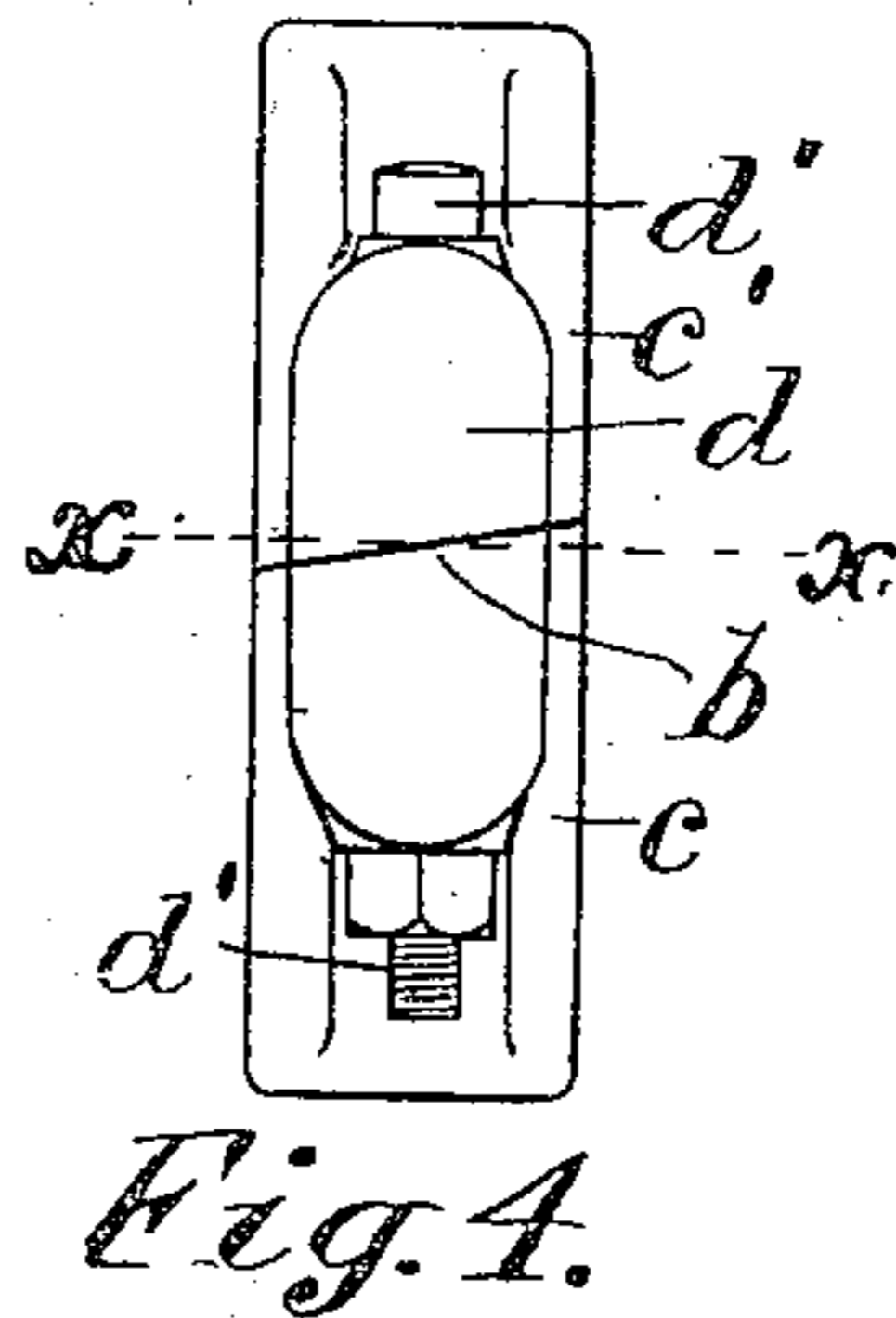
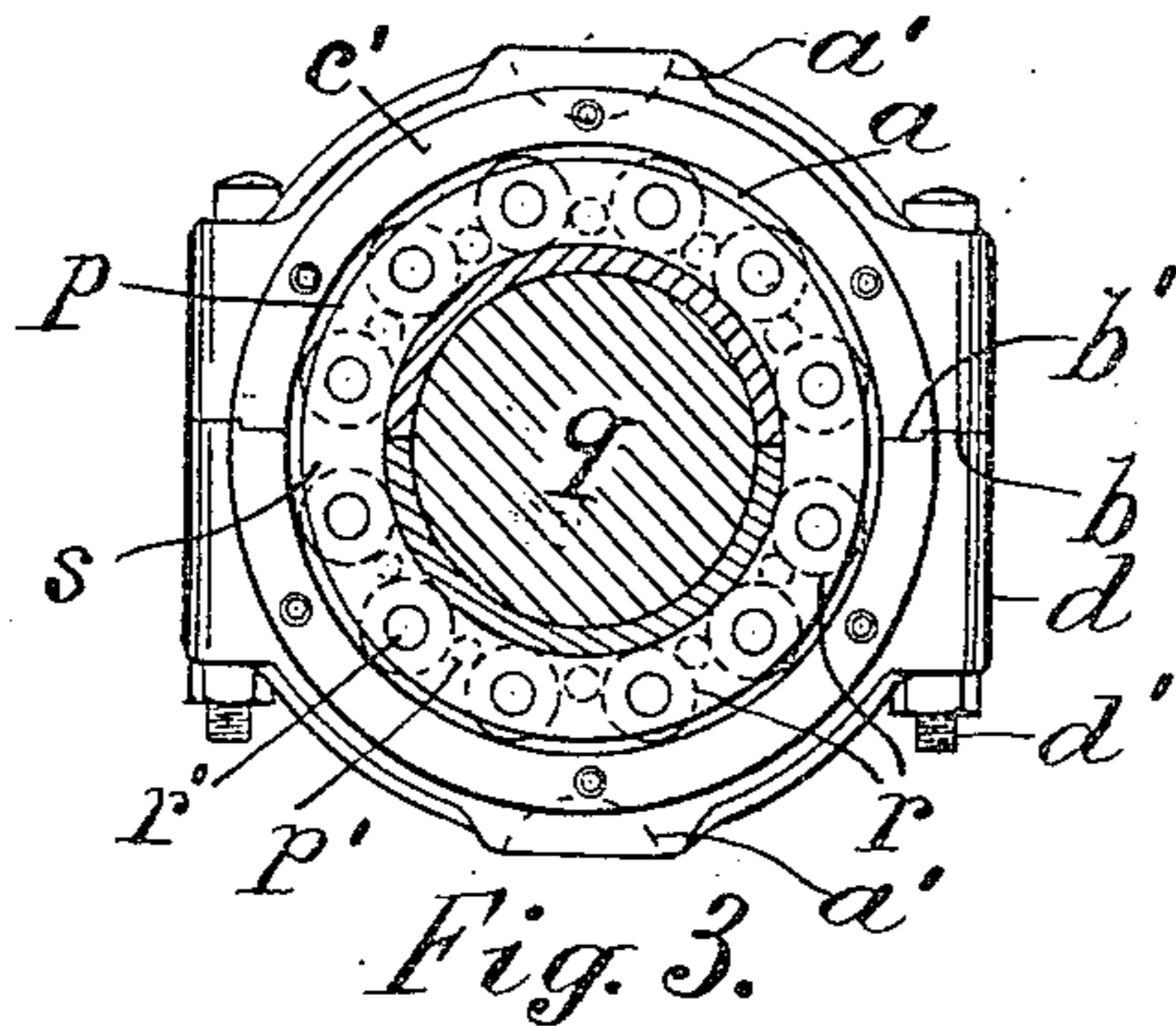


Fig. 5.

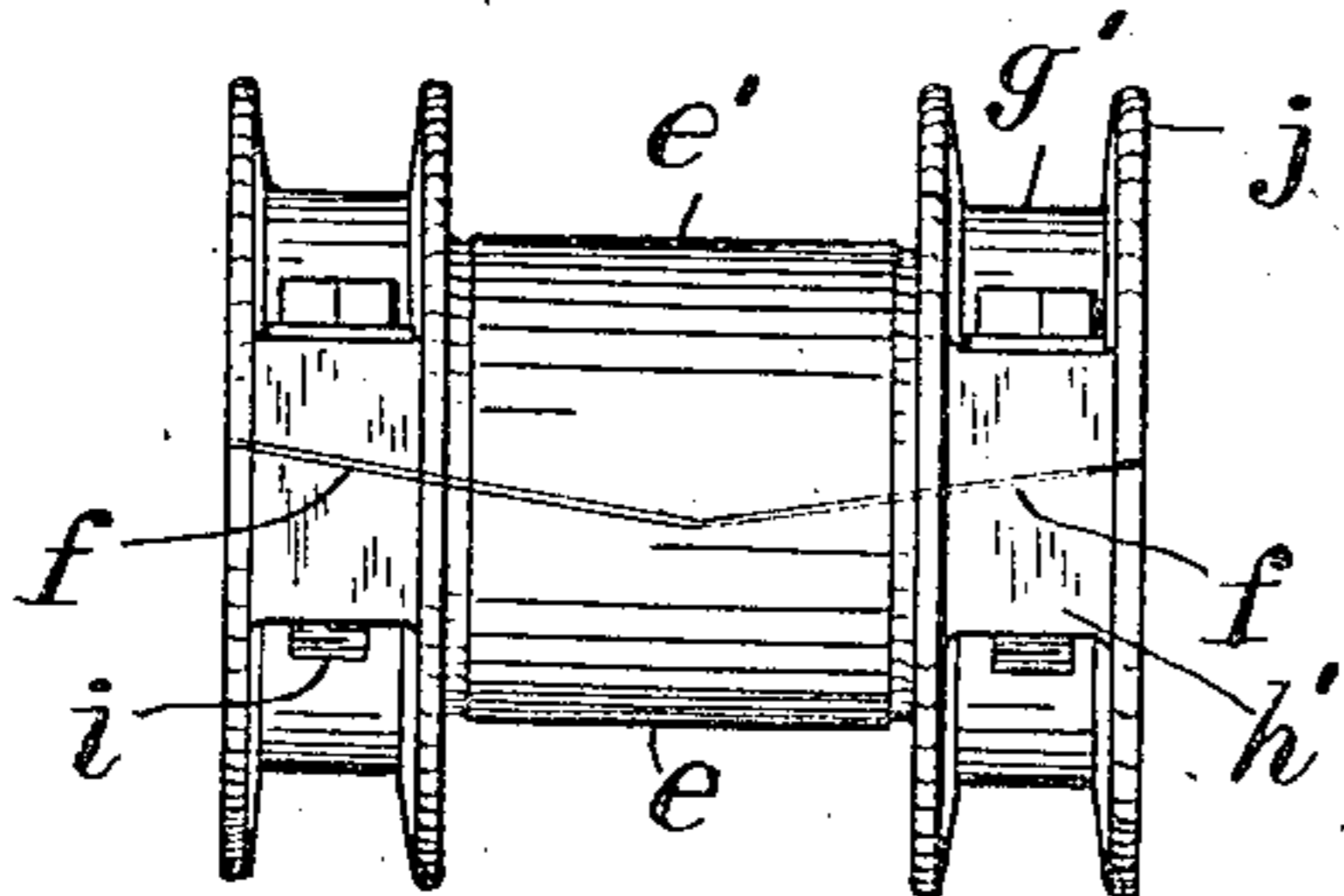


Fig. 6.

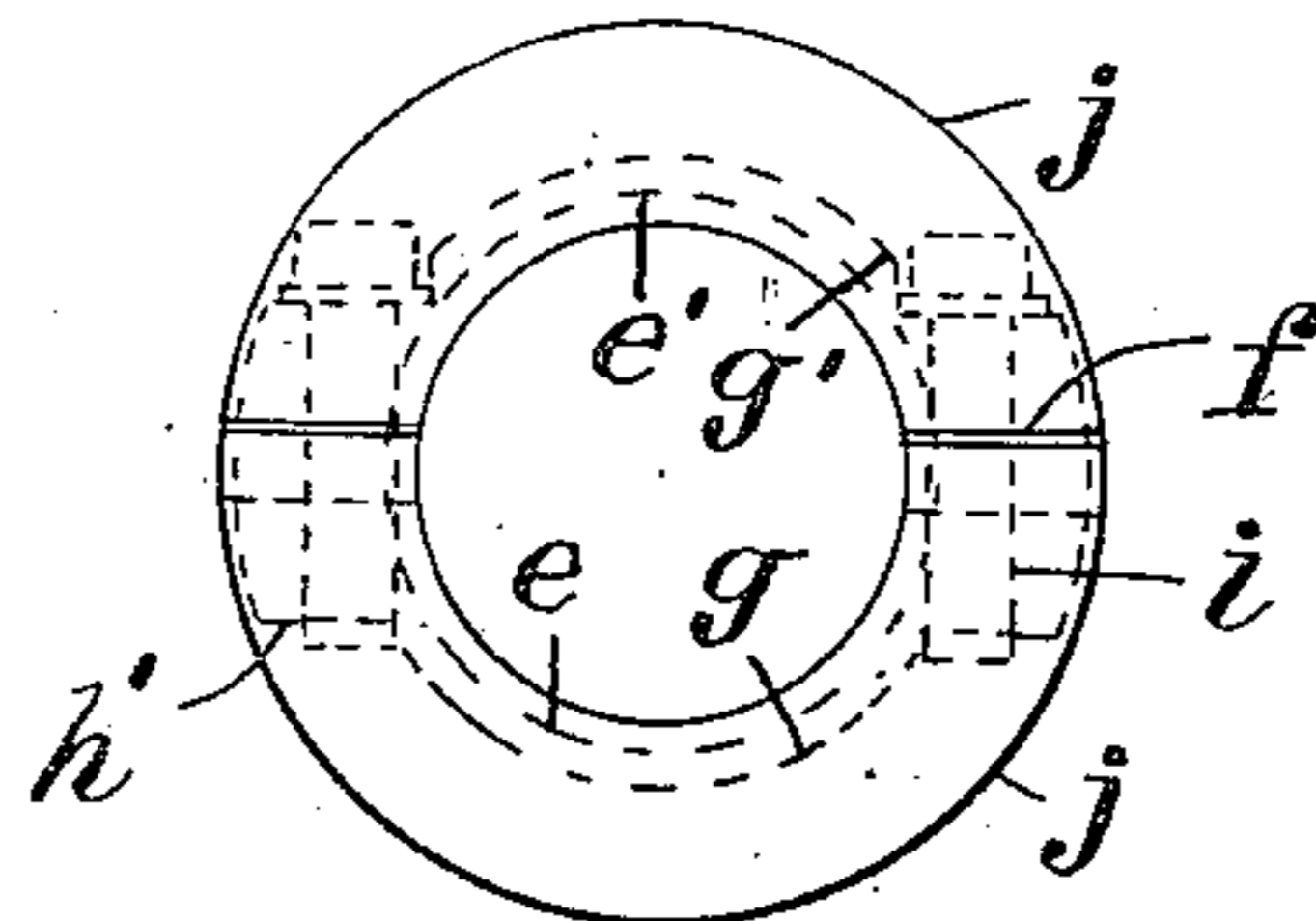


Fig. 7.

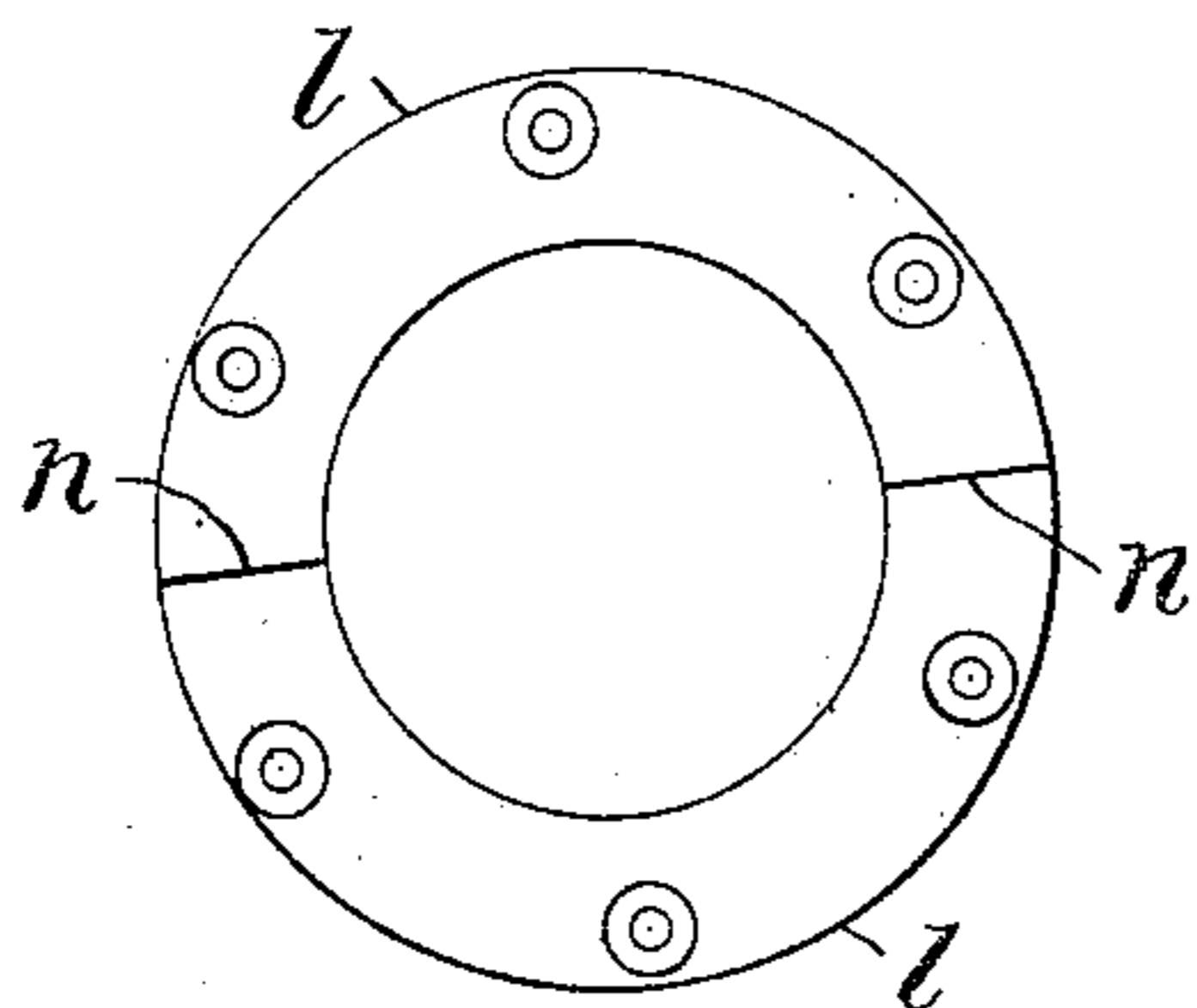


Fig. 8.

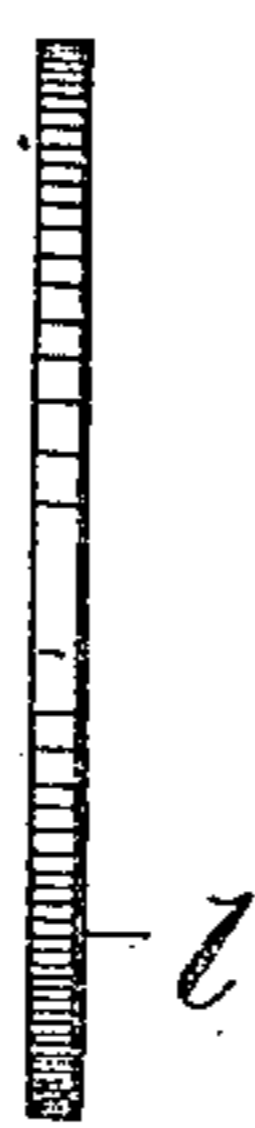
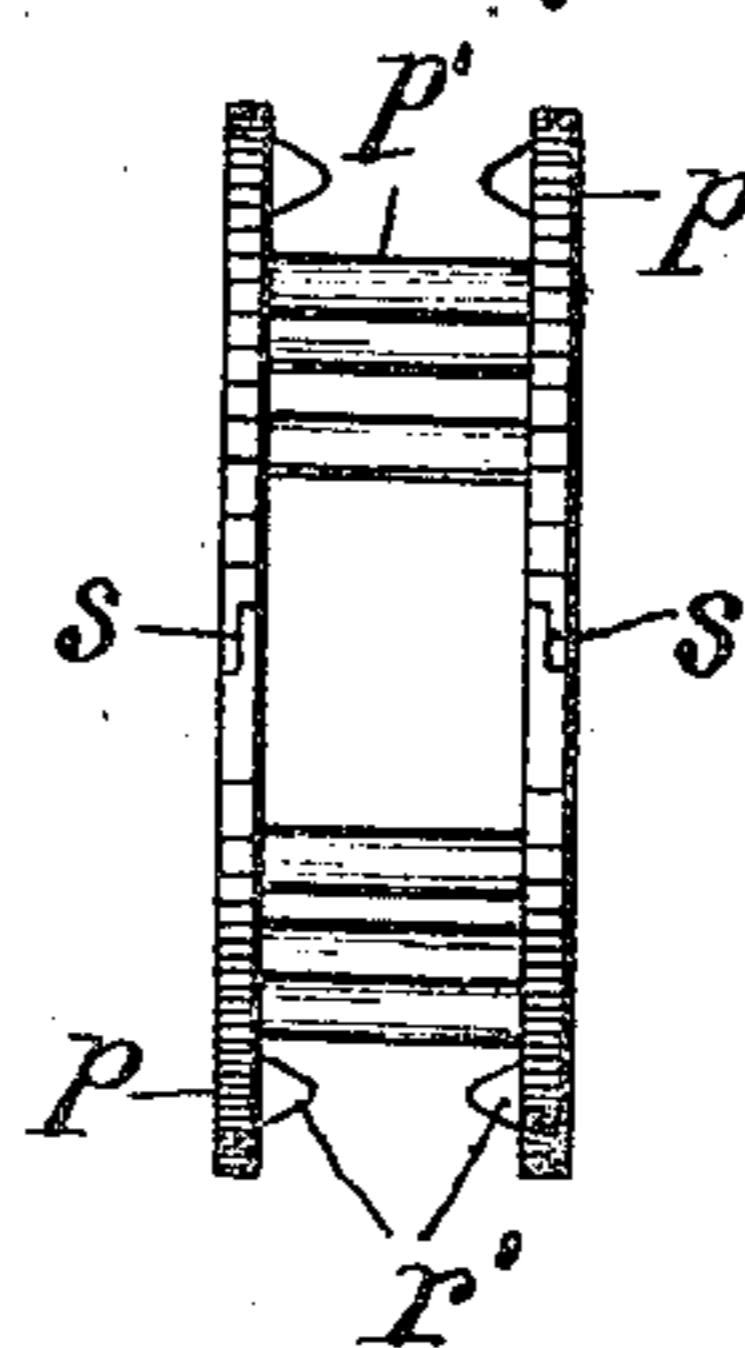


Fig. 9.



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UNITED STATES PATENT OFFICE.

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

SPLIT-COLLARED SLEEVE FOR ROLLER-BEARINGS.

991,862.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed August 21, 1909, Serial No. 513,971. Renewed April 5, 1911. Serial No. 619,171.

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 Split-Collared Sleeves for Roller-Bearings, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present invention consists of a modification of the collared sleeve for shaft journals described and claimed in my application No. 497,087 filed May 19, 1909, to facilitate the application of such collared sleeves to shafts at various points upon their length. This is effected in the present invention by dividing the collared sleeve longitudinally and furnishing the collars with means for clamping the halves of the sleeves together upon the shaft, and similarly dividing the casing so that with its contained set of rolls it may be applied to the divided sleeve between the collars.

The casing is provided with head-plates or flanges at its opposite ends between which the anti-friction rolls and the cage which guides them are fitted, and the collars upon the sleeve are arranged outside of such head-plates to expose the means for fastening the two halves of the sleeve together. The head-plates are divided and secured detachably upon the body of the casing so that all parts of the casing and sleeve can be separated from one another for applying them to or removing them from the shaft.

The casing is divided upon an oblique line so as to furnish an oblique joint over which the rolls may pass progressively, and the sleeve is divided upon reversely inclined lines which form an oblique joint favorable to the motion of the rolls.

The halves of the collars upon the sleeve are provided with lugs for connecting bolts, and the collars are preferably formed with circular guard flanges covering such lugs and bolts.

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

Figure 1 is a longitudinal section of the bearing applied to a portion of a shaft and provided with the improvements; Fig. 2 is a plan of the same parts, not in section. Fig.

3 is an end view of the casing and rolls; Fig. 4 is an edge view of the casing; Fig. 5 is a side view of the sleeve, showing the oblique joint of its division; and Fig. 6 is an end view of the sleeve. Fig. 7 is an end view, and Fig. 8 an edge view of one of the end collars for the casing. Fig. 9 is an edge view of the cage.

The invention is shown applied to a high-duty bearing in which short rolls and a short casing can be employed. The casing is shown with a cylindrical bore *a* and an oblique longitudinal division *b* which separates it into sections *c*, *c'*, which are provided with lugs *d* having bolts *d'* inserted through them to lock them together.

Divided head-plates *l* are attached to opposite ends of the casing by screws *m*, and the joint *n* of the plates is so arranged that the ends of the plate-sections overlap the joint *b* of the casing-sections, and positively prevent any end movement or displacement of the casing-sections. The head-plates would operate the same if made integral with the casing, as is common.

The ends of the sleeve are extended outside of the casing and provided with integral collars and the sleeve and collars divided longitudinally upon the line *f*, thus separating the sleeves into sections *e*, *e'*, carrying respectively the half-collars *g*, *g'*.

The half-collars are provided with lugs *h'*, and bolts *i* are extended through the sleeve. The edges of the collars are provided with flat circular flanges *j* projecting sufficiently to inclose the lugs *h'* and the heads of the bolts; which latter are provided with sockets *k* in which a wrench may be inserted between the flanges to turn them.

The collars upon the sleeve lie entirely outside the ends of the casing where the heads of the bolts are fully accessible to permit the clamping of the sleeve-sections upon the shaft or their removal therefrom.

The division of the casing is inclined to the axis of the casing, as shown in Fig. 4, to facilitate the passage of the rolls over the joint of the casing; the ends of the line *b* extending respectively above and below the axial line of the casing indicated by the dotted line *x-x* in Fig. 4. This inclined joint of the casing is formed, at opposite sides of the bore, with rabbets *b'* to hold the

halves in place laterally, such rabbets extending obliquely across the casing from one of its ends to the other, parallel with the joint *b*.

5 The division of the sleeve is made oblique for the same reason; but as the sleeve could not be conveniently divided upon an oblique line if such line extended far around the periphery of the sleeve, I prefer to divide
10 the sleeve upon reversely inclined lines *f*, extending from the outer side of each collar to the middle of the sleeve between the collars.

The joint *q'* of the sleeve is slightly open
15 when the sleeve is clamped upon the shaft shown at *q* in Figs. 1 and 2 so that the screws *i* may bind the sleeve firmly; but the joint of the casing is closed to secure a cylindrical bore for the rolls to traverse.

20 Figs. 1, 3 and 9 show the cage having flat circular rings *p* at the ends connected by tie-bars *p'* between the rolls *r*. The rolls are shown tubular, and studs *r'* upon the rings loosely engage the ends of the rolls to hold
25 them in the cage.

The rings, like the sleeve and casing, are divided diametrically for application to the shaft, the connecting ends of the rings being formed with rabbeted or overlapping tongues
30 *s*. These tongues overlap on the outside of the ends, and the construction thus serves to hold the halves of the casing from longitudinal displacement within the casing, while permitting their free separation when the
35 casing is opened, and the application to, or removal from the sleeve of the rolls carried by the two sections of the cage.

From the above description it will be noticed that all the elements of the construction
40 including the cage, the sleeve and the casing are divided diametrically and provided where necessary with means for securing their respective sections together so that they may be applied to a shaft at any point in its
45 length.

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

1. In a roller bearing, the combination, with a shaft, and a casing having head-plates
50 with anti-friction rolls fitted between such head-plates, of a tubular sleeve fitted detachably upon the shaft within the rolls and of sufficient length to extend outside the heads of the casing at opposite ends, with integral
55 collars upon the ends of the sleeve outside of such head-plates, the sleeve and integral collars being split longitudinally for applying them laterally to the shaft, and the collars being provided with means for clamping the
60 same with the sleeve upon the shaft.

2. In a roller bearing, the combination, with a shaft, and a casing having head-plates with anti-friction rolls fitted between such
65 head-plates, of a tubular sleeve fitted detachably upon the shaft within the rolls and of

sufficient length to extend outside the heads of the casing at opposite ends, with integral collars upon the ends of the sleeve outside of such head-plates, the sleeve and integral collars being split longitudinally upon an
70 oblique line to facilitate the passage of the rolls across the joint of the sleeve and the said joint being slightly open to permit the rigid clamping of the sleeve-sections upon the shaft, and bolts connecting the collar-sec-
75 tions for clamping the same with the sleeve upon the shaft.

3. In a roller bearing, the combination, with a shaft, and a casing having head-plates with anti-friction rolls fitted between such
80 head-plates, of a tubular sleeve fitted detachably upon the shaft within the rolls and of sufficient length to extend outside the heads of the casing at opposite ends, with integral collars upon the ends of the sleeve outside
85 of such head-plates, a cage fitted to the anti-friction rolls between the head-plates, and the cage, the sleeve and casing being divided longitudinally to facilitate their application to the shaft, and the sleeve and casing pro-
90 vided with means for securing their sections together.

4. In a roller bearing, the combination, with a shaft, and a casing having head-plates with anti-friction rolls fitted between such
95 head-plates, of a tubular sleeve fitted detachably upon the shaft within the rolls and of sufficient length to extend outside the heads of the casing at opposite ends, the said extended ends having integral collars provided
100 with projecting circular flanges at their opposite edges and bolting-lugs and bolts between the said flanges, the sleeve and flanged collars being divided longitudinally through the bolting-lugs, and the joint of the sleeve
105 being slightly open to permit its clamping rigidly upon the shaft when the bolts are tightened in said lugs.

5. In a roller bearing, the combination, with a shaft, and a casing having head-plates
110 with anti-friction rolls fitted between such head-plates, of a tubular sleeve fitted detachably upon the shaft within the rolls and of sufficient length to extend outside the heads of the casing at opposite ends, the said ex-
115 tended ends having integral collars provided with projecting circular flanges at their opposite edges and bolting-lugs and bolts between the said flanges, the sleeve and flanged collars being divided longitudinally through
120 the bolting lugs upon reversely inclined lines extended to form an oblique joint for the passage of the rolls upon the sleeve, and the joint of the lug being slightly open to permit its clamping rigidly upon the shaft by
125 the bolts.

6. In a roller bearing, the combination, with a shaft, and a casing having cylindrical bore and divided longitudinally upon an ob-
lique line *b*, of divided head-plates *z* attached
130

to the opposite ends of the casing and the joint of the plates overlapping the joint of the casing-sections to prevent longitudinal movement of such casing-sections, a sleeve 5 applied to the shaft and extended outside of the head-plates and divided longitudinally, means for securing the respective sections of the sleeve and casing together, and a series of anti-friction rolls fitted to the

sleeve and casing between the said head- 10 plates.

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

CHARLES S. LOCKWOOD.

Witnesses:

CHARLES R. COOK,
THOMAS W. WOOTTON.