

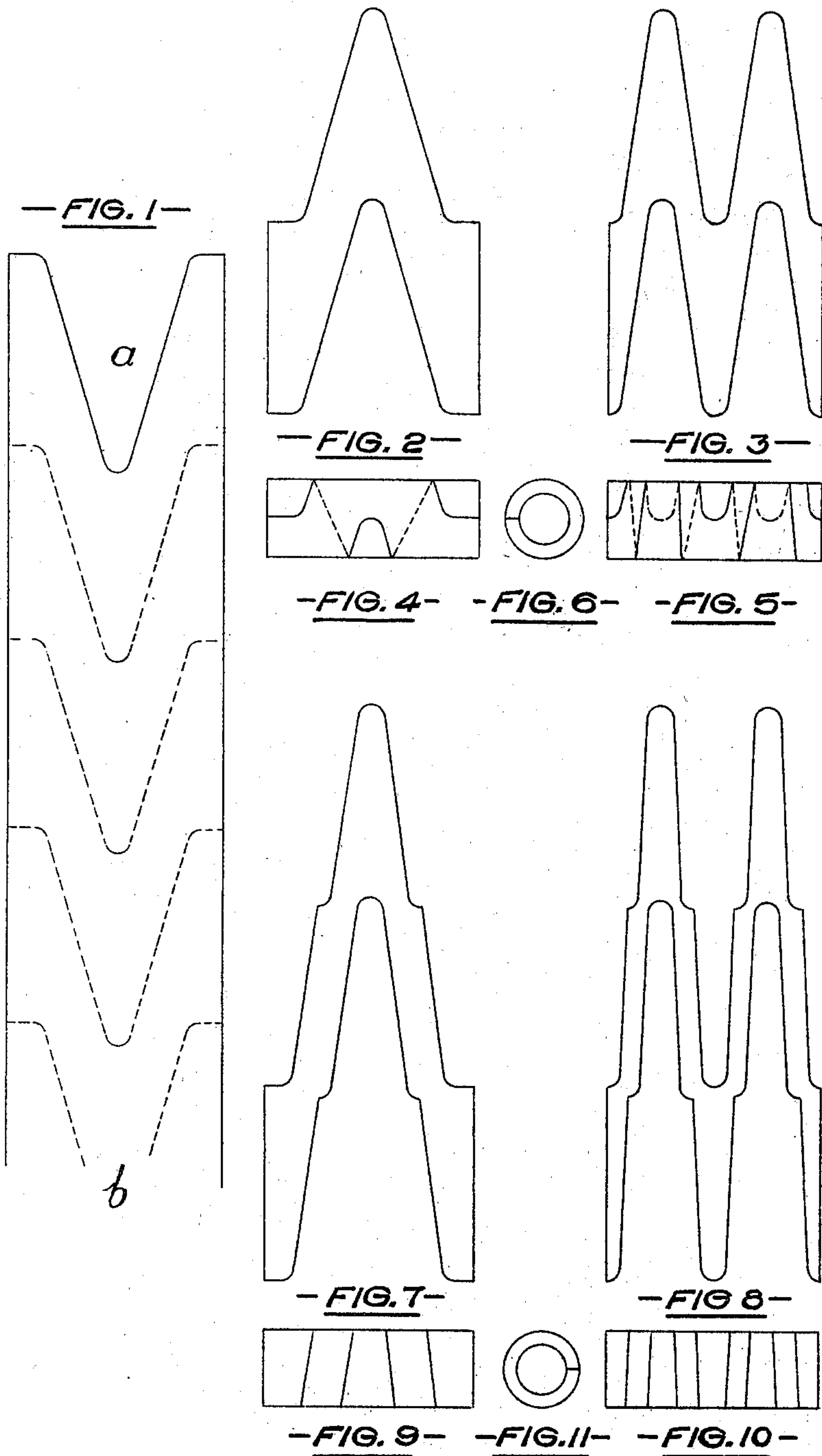
No. 646,997.

Patented Apr. 10, 1900.

E. JONES.  
ROLLER BEARING.

(Application filed Sept. 6, 1899.)

(No Model.)



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

EDWARD JONES, OF WITTON, ENGLAND.

## ROLLER-BEARING.

SPECIFICATION forming part of Letters Patent No. 646,997, dated April 10, 1900.

Application filed September 6, 1899. Serial No. 729,626. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD JONES, a subject of the Queen of Great Britain and Ireland, and a resident of Lion Works, Witton, in the county of Warwick, England, have invented certain new and useful Improvements Relating to Roller-Bearings, (for which I have filed an application for patent in Great Britain, No. 10,184, bearing date May 15, 1899,) of which the following is a specification.

This invention consists of improvements relating to roller-bearings, my object being to produce in a simple and expeditious manner and at small cost short tubes specially adapted for use as rollers in the said bearings.

In the accompanying sheet of explanatory drawings, to be hereinafter referred to, Figure 1 is a plan of the strip from which the flat roller-blanks are formed. Figs. 2 and 3 are plans representing two forms of blanks, and Figs. 4 and 5 are the respective plans of the said blanks made into rollers. Fig. 6 is an end view of the rollers. Figs. 7 and 8 are plans representing two other forms of blanks, and Figs. 9 and 10 are the respective plans of the said blanks made into rollers. Fig. 11 is an end view of the rollers.

I produce my improved tubular rollers from rolled strips of mild steel of a width equal to the required length of the rollers. From such strips I punch or stamp out blanks having narrowed or pointed forward ends which fit into correspondingly-recessed rear ends when the flat blanks are subsequently bent into the required tubular form. Although I make the blanks of varying shapes, in every case the forward end of each blank is formed by the portion pierced from the rear end of the next blank to be cut from the strip, and thus waste of metal is avoided.

Fig. 1 is a plan of a mild-steel strip having the grain or fiber formed by rolling running in a longitudinal direction between the ends *a* and *b*. The dotted lines indicate the manner in which the strip is stamped into blanks, one of which is shown separately at Fig. 2. Such blanks are made into the tubular form illustrated at Figs. 4 and 6 in various ways; but by preference I employ a tube-former consisting of a suitably-curved abutment-block, which when the blank is pressed against it with its pointed end foremost curls or rolls the metal into a circular form until the ends are brought adjacent to each other along

spiral or curved lines, as indicated at Fig. 4. Such ends are then closed together either by a swaging or rolling operation, and the tubes are finally forced through a die to give them a smooth and regular external surface.

Instead of punching or stamping out blanks such as illustrated at Fig. 2, I sometimes, by the employment of suitably-formed tools, punch or stamp from the strip, as shown at Fig. 1, blanks of shapes such as shown at Figs. 3, 7, and 8, which I subsequently bend into the tubular form, as with the blanks hereinbefore referred to and as illustrated at Fig. 2.

By forming the tubular rollers in the manner described the longitudinal grain or fiber of the metal is disposed exactly in the direction of rotation of the rollers caused by their contact with the journal supported by the bearing in which they are employed, and such a disposition I find much better adapted to resist wear than any other. The formation of the rollers from mild-steel blanks and with interlocking or engaging ends also permits them to yield slightly under any uneven or undue stress to which they may be individually subjected through irregularities in the journal and by such yielding to avoid damaging the surface of the shaft or journal and the body of the bearing and to effect the uniform distribution of the pressure over the whole of the rollers contained in the bearing.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A roller formed from a substantially A-shaped piece of material with the apex of the A fitting into the open portion thereof and the contacting edges secured together.

2. A roller formed from a substantially A-shaped piece of material with the apex of the A fitting in the open portion thereof and with the edges of the metal extending spirally in opposite directions from the apex toward the ends of the roller.

3. A roller formed from a piece having a plurality of A-shaped portions with the apices of the A-shaped portions fitting into the open portions, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EDWARD JONES.

Witnesses:

EDWARD MARKS,  
HERBERT BOWKETT.