

(No Model.)

2 Sheets—Sheet 1.

A. PATERSON.
ROLL BEARING.

No. 477,818.

Patented June 28, 1892.

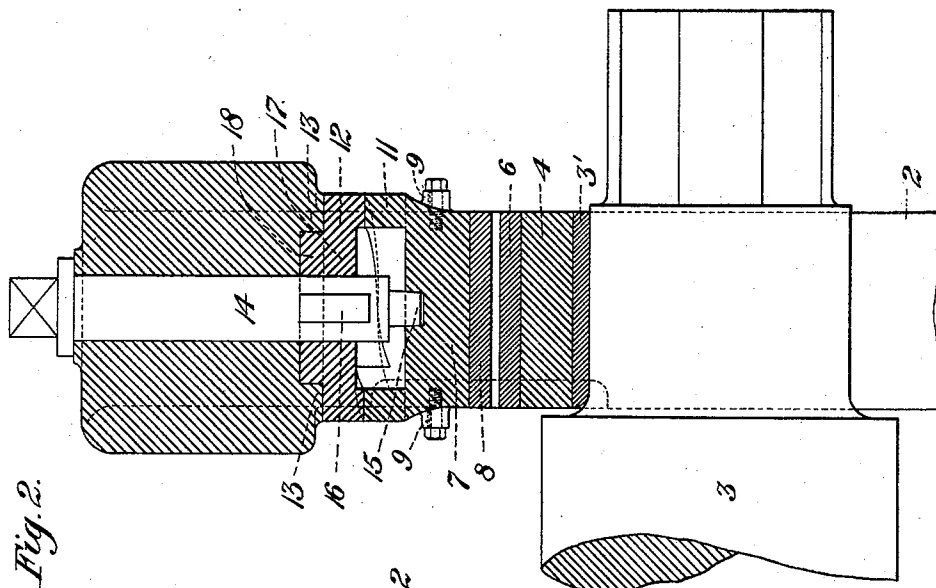


Fig. 2.

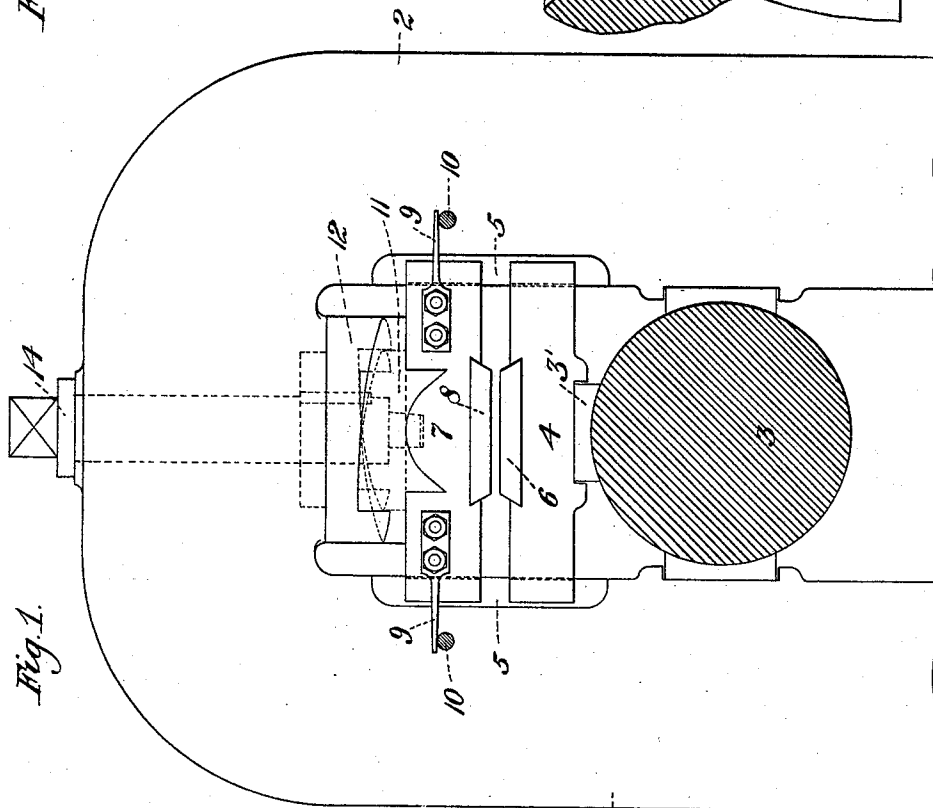


Fig. 1.

WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

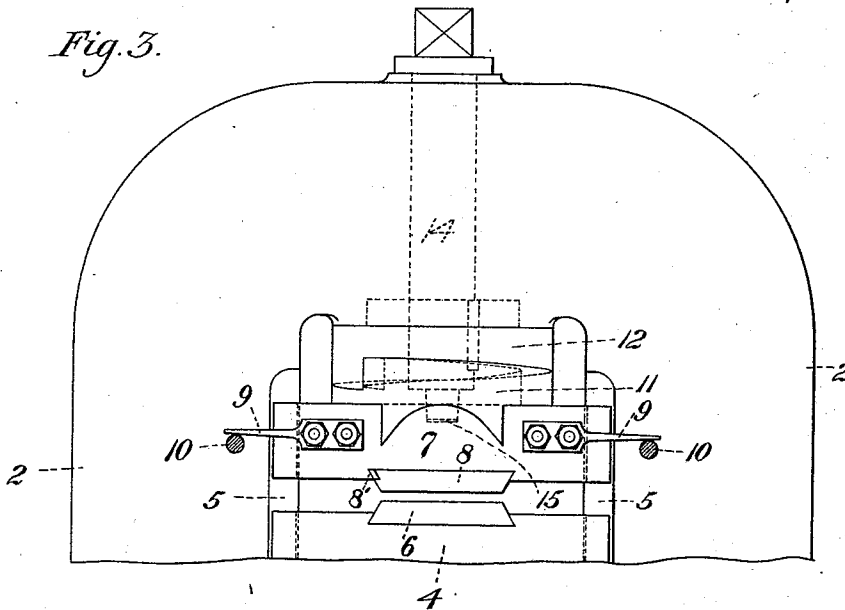


Fig. 4.

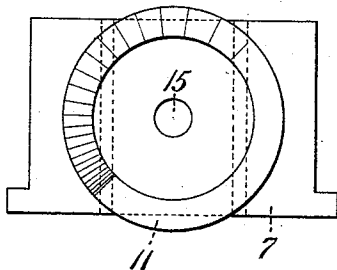


Fig. 5.

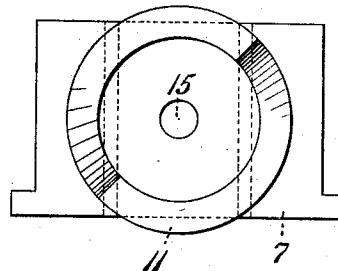


Fig. 6.

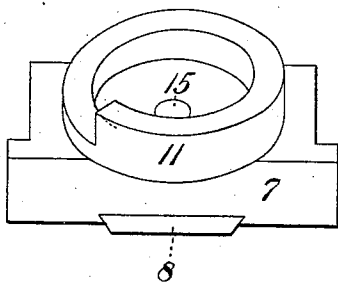
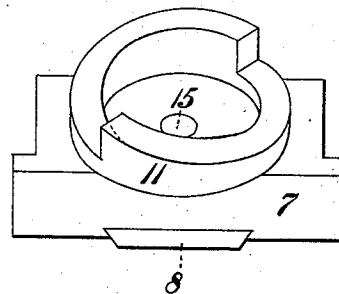


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALEXANDER PATERSON, OF ALLEGHENY, PENNSYLVANIA.

ROLL-BEARING.

SPECIFICATION forming part of Letters Patent No. 477,818, dated June 28, 1892.

Application filed August 18, 1891. Serial No. 403,009. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER PATERSON, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Roll-Bearings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a cross-section through the roll, showing the roll-bearings. Fig. 2 is a cross-section on the line II II of Fig. 1. Fig. 3 is a view similar to Fig. 1, showing a modified form of the helix. Fig. 4 is a plan of the upper block 7, provided with a single helix. Fig. 5 is a similar view showing a double helix. Figs. 6 and 7 are views similar to Figs. 4 and 5, but shown in perspective.

My invention relates to that class of roll-bearings in which the upper roll is arranged for vertical adjustment, in order to reduce gradually the thickness of the plate or bar acted upon; and it consists in an improved means by which the roll is adjusted, whereby springing of the roll is effectually prevented and a much more delicate adjustment is obtainable than by the use of former means employed for this purpose.

In the drawings, in which similar numerals indicate corresponding parts, 2 are the roll-housings, and 3 is the upper of a pair of rolls held therein.

3' are the brasses or bearings for the roll, the upper brass being held in the sliding bearing-block 4, which works in the guideways 5. Upon the upper surface of the block 5 is secured the steel face 6, against which an adjusting-screw bears in the ordinary construction. In my improved construction a second block 7 is provided, having upon its lower surface a piece 8, corresponding to the steel face 6. This block 7 is supported upon springs 9, which extend from either end and bear at their extremities upon bars 10, extending from the housings. This second block likewise slides in the guideways 5, and upon its upper surface is fastened a ring 11, which may be cast integral therewith, having a helical or screw-shaped upper edge. This helix may be in the form of a single curve, as shown in Figs. 3 and 6, or in the form of two curves

with a break between, as shown in Figs. 1 and 2, and engaging therewith is another corresponding helix or screw-thread upon a second ring 12, resting upon the ring 11. These rings are held in central position by suitable lugs 13 upon the housings, and a shaft 14 passes centrally through them, being stepped at 15 in the block 7. This shaft is provided with feathers which fit in slots in the upper ring at 16, and at its upper end is squared in cross-section for the application of a wrench or similar device for turning the shaft. The upper ring may preferably have a cover 17, provided with a boss 18, which works in a circular recess in the housing and holds the ring securely in place.

The action is as follows: As the plate or bar is inserted within the rolls, the upper roll rises a certain distance to admit the same. Before the next pass, the shaft being turned a certain amount, the upper ring moves over the lower ring and forces it down, so that the distance through which the roll may rise is thereby diminished. This operation is repeated till the rolling is completed.

The advantages of my invention accrue from the firm broad bearing obtained by the use of the second block, which effectually prevents the springing of the roll consequent upon the old construction and distributes the pressure equally over the surface of the brass, preventing any heating thereof. A wedge 8' may be provided, as shown in Fig. 3, for the purpose of aligning the parts as the brasses wear. Wedges also may be inserted beneath the plates 8 and 6 for the same purpose.

Many modifications may be made in the form and arrangement of the parts without departure from my invention, which I regard as consisting, broadly, in the second block having a broad firm bearing upon the face of the brass or bearing-block.

What I claim is—

1. A roll-bearing comprising a movable bearing-block having a flat upper bearing-surface, a second movable block having a mating bearing-surface engaging therewith, a helical surface upon the second block, and a revoluble adjusting-piece having a helical surface engaging the same, substantially as and for the purposes described.

2. A roll-bearing comprising a movable bearing-block, a second movable block bearing upon the first and having a helical surface thereon, a revoluble ring having a helical surface engaging the helical surface on the block, and a shaft for turning the ring, substantially as and for the purposes described.

3. A roll-bearing comprising a movable bearing-block having an upper bearing-face, a second spring-supported block adapted to bear upon the first block and having an upper helical surface, a ring resting thereon and

provided with a mating helical surface, a shaft passing through and keyed to the ring and stepped in the second bearing-block, and means for turning said shaft, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 14th day of August, 1891.

ALEXANDER PATERSON.

Witnesses:

H. M. CORWIN,
W. B. CORWIN.