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PATENTED JUNE 9, 1903.

F. SEILING.

BEARING AND SUPPORT FOR UNIVERSAL MILLS.

APPLICATION FILED FEB. 21, 1901.

NO MODEL.

Fig. 2.

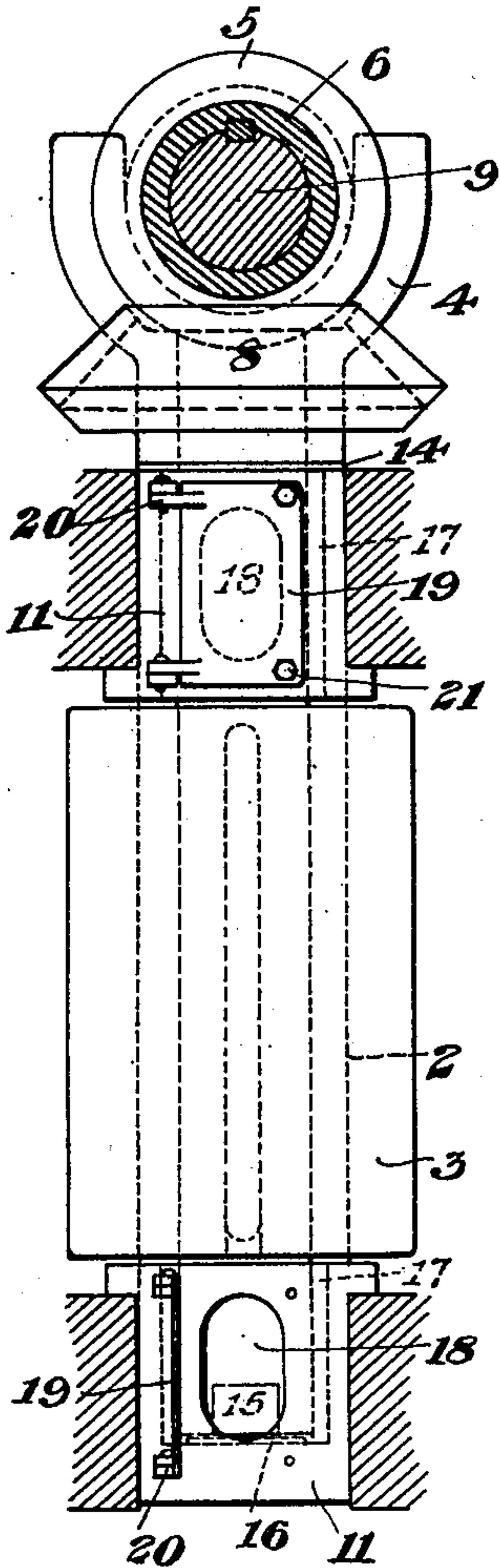


Fig. 1.

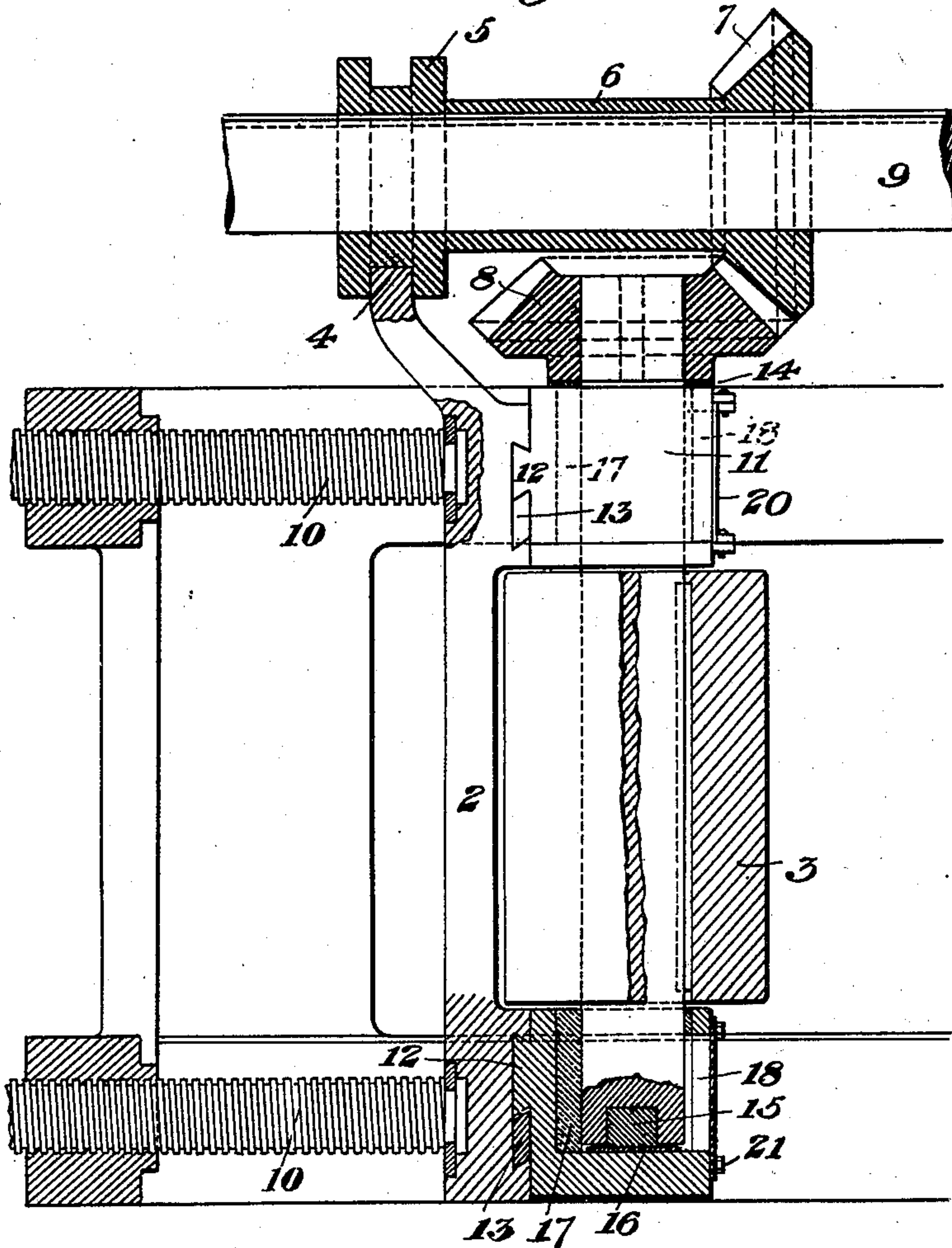
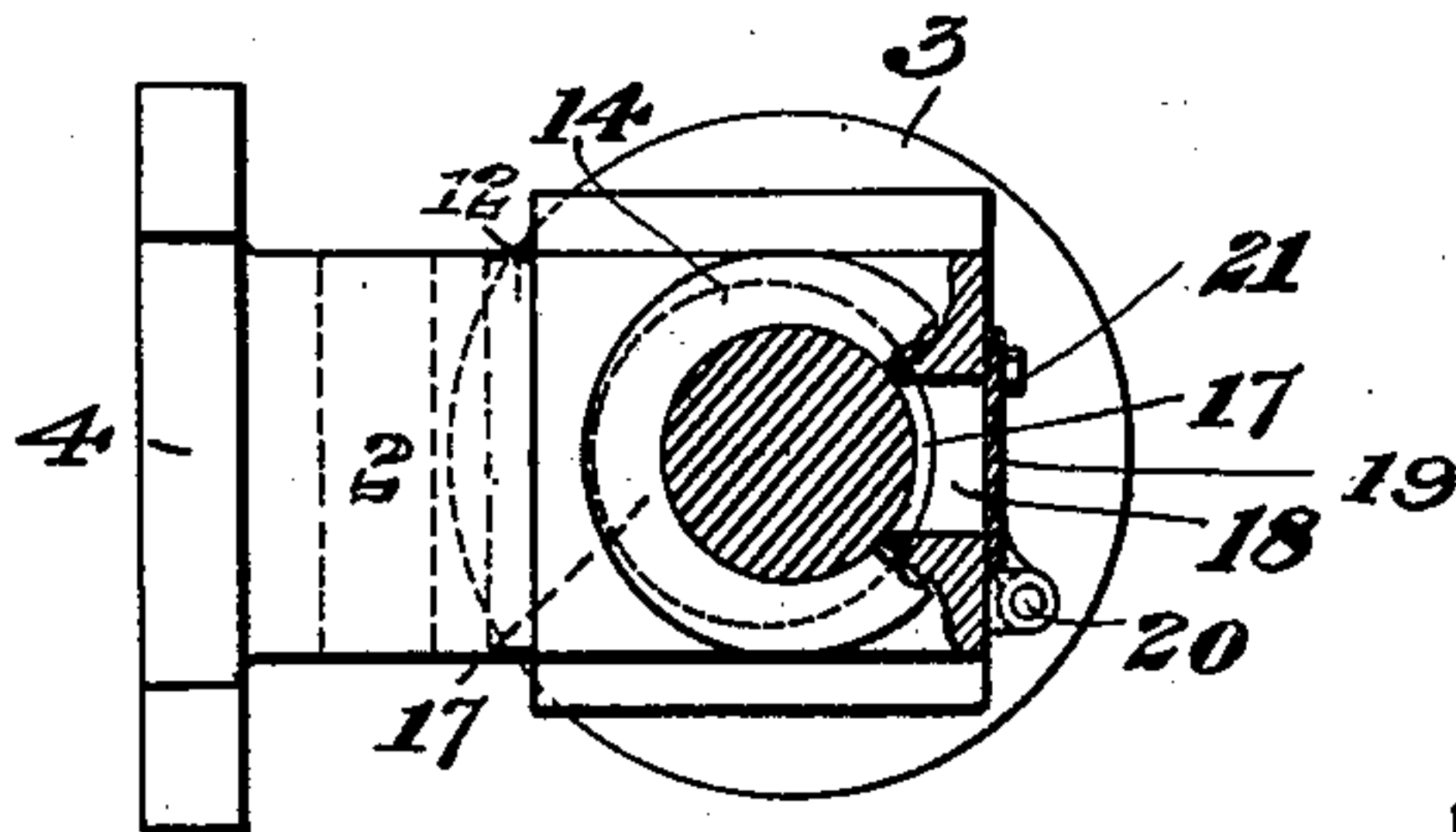


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK SEILING, OF ALLEGHENY, PENNSYLVANIA.

BEARING AND SUPPORT FOR UNIVERSAL MILLS.

SPECIFICATION forming part of Letters Patent No. 730,802, dated June 9, 1903.

Application filed February 21, 1901. Serial No. 48,274. (No model.)

To all whom it may concern:

Be it known that I, FRANK SEILING, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented new and useful Bearings and Supports for Universal Mills, 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 broken side elevation showing the bearings and support for the vertical roll of a universal mill. Fig. 2 is a front elevation of the same, and Fig. 3 is a cross-sectional view of one of the bearings.

My invention relates to the vertical rolls of universal mills, and is designed to improve the bearings and supports therefor, so that the roll will be held in correct position, can be easily and quickly removed and replaced, and will be longer lived than would the construction previously used.

In the drawings, 2 represents the vertically-extending support for the vertical roll 3, this support having an upper fork 4, which fits within an annular groove in a ring 5, forming part of a sleeve 6, carrying bevel-wheel 7. The bevel-wheel 7 intermeshes with another bevel-wheel 8, secured to the shaft of the vertical roll, and the collar 6 is splined to the shaft 9, which drives the roll. The support 2 may be moved horizontally in or out by means of screw-bolts 10 10, having their front ends rotatably carried within the support. Each of the bearing-boxes 11 for the ends of the roll-shaft is provided with a dovetailed projection 12, which is secured within a dovetail recess in the support 2 by means of a tapering key 13, driven in between the lug and the corresponding face in the recess. The bearing-boxes are thus securely held in place and may be closely adjusted, as well as easily removed and replaced, by the use of the keys.

In order to lessen the wear between the hub of the wheel 8 and the top of the upper box, I provide a steel washer 14, which is preferably case-hardened and fits between the box and the wheel. This plate or washer receives the strains of wear which would otherwise be brought upon the bearing and makes the device more durable. For a similar purpose I preferably insert a central hardened block 15 in a central hole in the lower end of the roll-shaft and provide a case-hardened plate

16, upon which the shaft rests, thus lessening the rapid end wear on the roll. These boxes are ordinarily filled with Babbitt metal to surround the roll-shaft, and this Babbitt metal wears away rapidly under the heavy pressure produced by the piece passing through the rolls, and to lengthen the wear of the bearings, as well as to better cushion the jars, I form the Babbitt metal 17 in eccentric shape, as shown in Fig. 3, the rear portion being much thicker than the front portion. As the pressure tends constantly to force the shaft back, I thus get longer wear without increasing the size of the box, the shaft being placed eccentrically in its bearings.

In order to allow lubrication of the shaft, I preferably form an open slot 18 through the front of the box, which also leads through the Babbitt metal to the shaft itself and through which a supply of heavy lubricant may be fed. These slots or feed-holes are closed by swinging doors 19, hinged at 20 and secured in place by screw-bolts 21 or other suitable devices. The lubricant is thus held in place and will last for a considerable time.

The advantages of my invention result from the fastening means for the bearings, from the eccentric shape of the bearing-lining, from the wearing-plates used, and the lubricant-openings leading through the sides of the vertical boxes.

Changes may be made in the form and arrangements of the parts without departing from my invention.

I claim—

A vertical roll, upper and lower bearing-boxes therefor with soft-metal linings extending entirely around the shafts of the roll, said shafts being eccentrically located within the lining, the thicker parts of the lining being in the rear parts of the boxes, there being lubricant-slots extending through the front portions of the boxes and through the thinner portions of the soft-metal linings, removable closures for the slots, and mechanism for clamping the closures; substantially as described.

In testimony whereof I have hereunto set my hand.

FRANK SEILING.

Witnesses:

H. M. CORWIN,
GEO. B. BLEMING.