

J. A. BANGLE & S. R. HUNTER.
WARP BEAM FOR LOOMS.

APPLICATION FILED SEPT. 24, 1909.

952.226.

Patented Mar. 15, 1910.

2 SHEETS—SHEET 1.

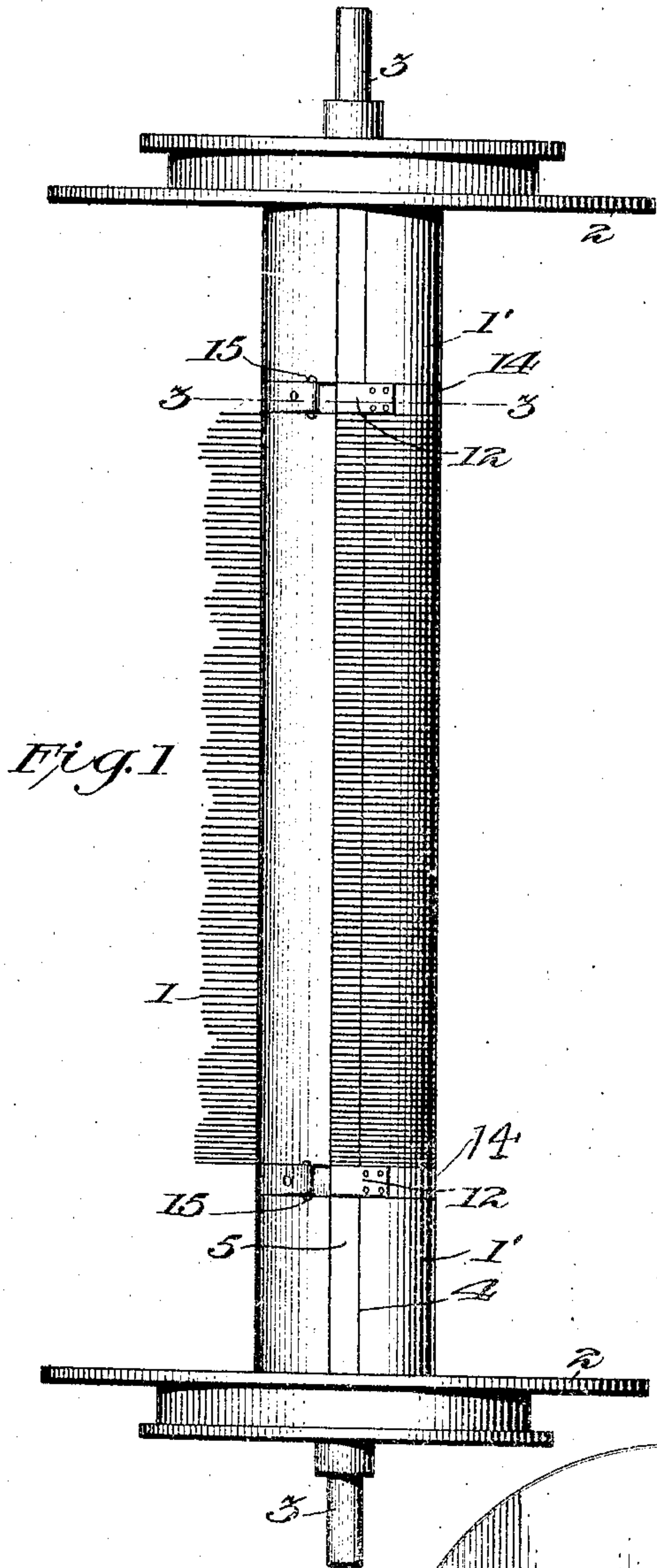


Fig. 1

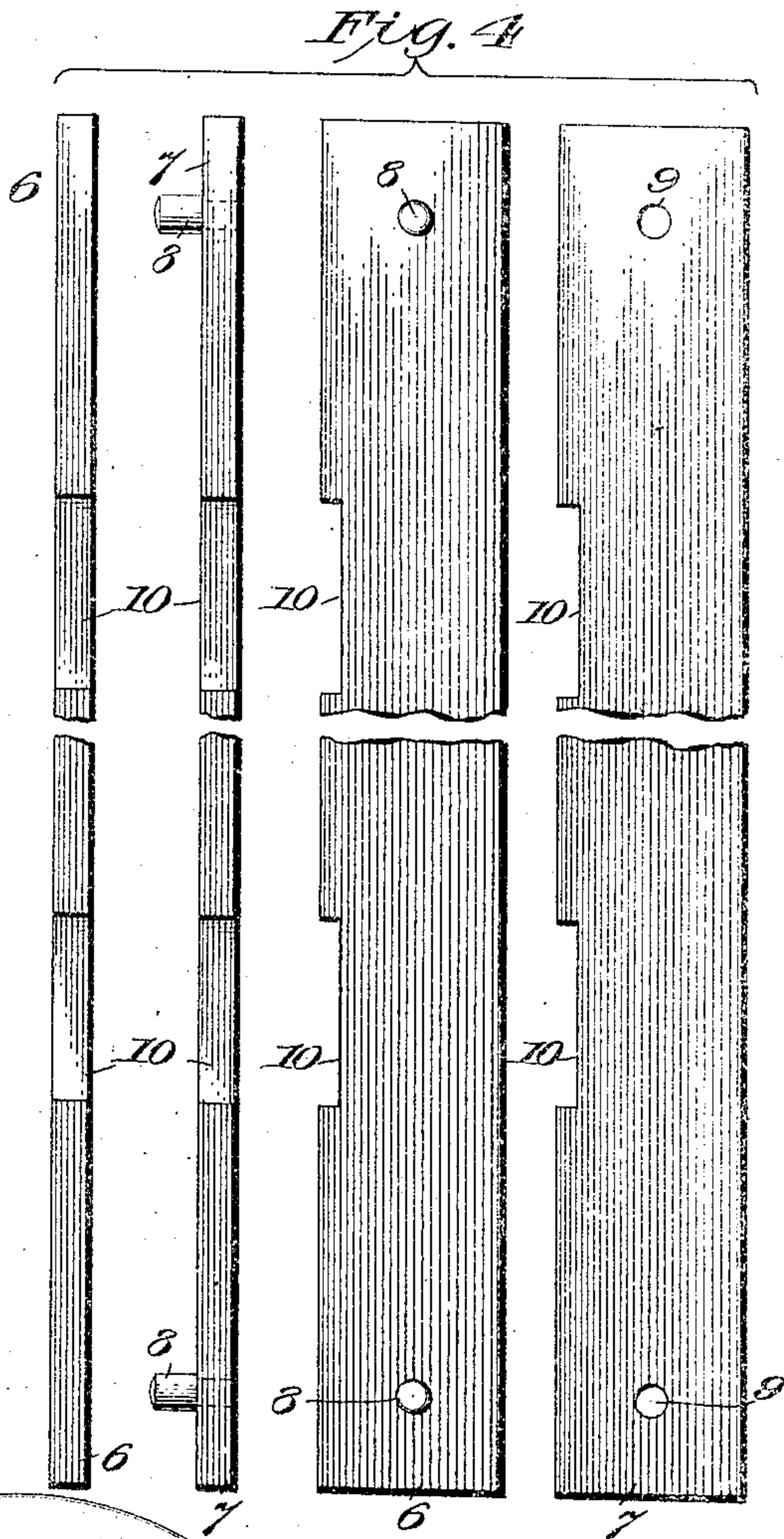


Fig. 4

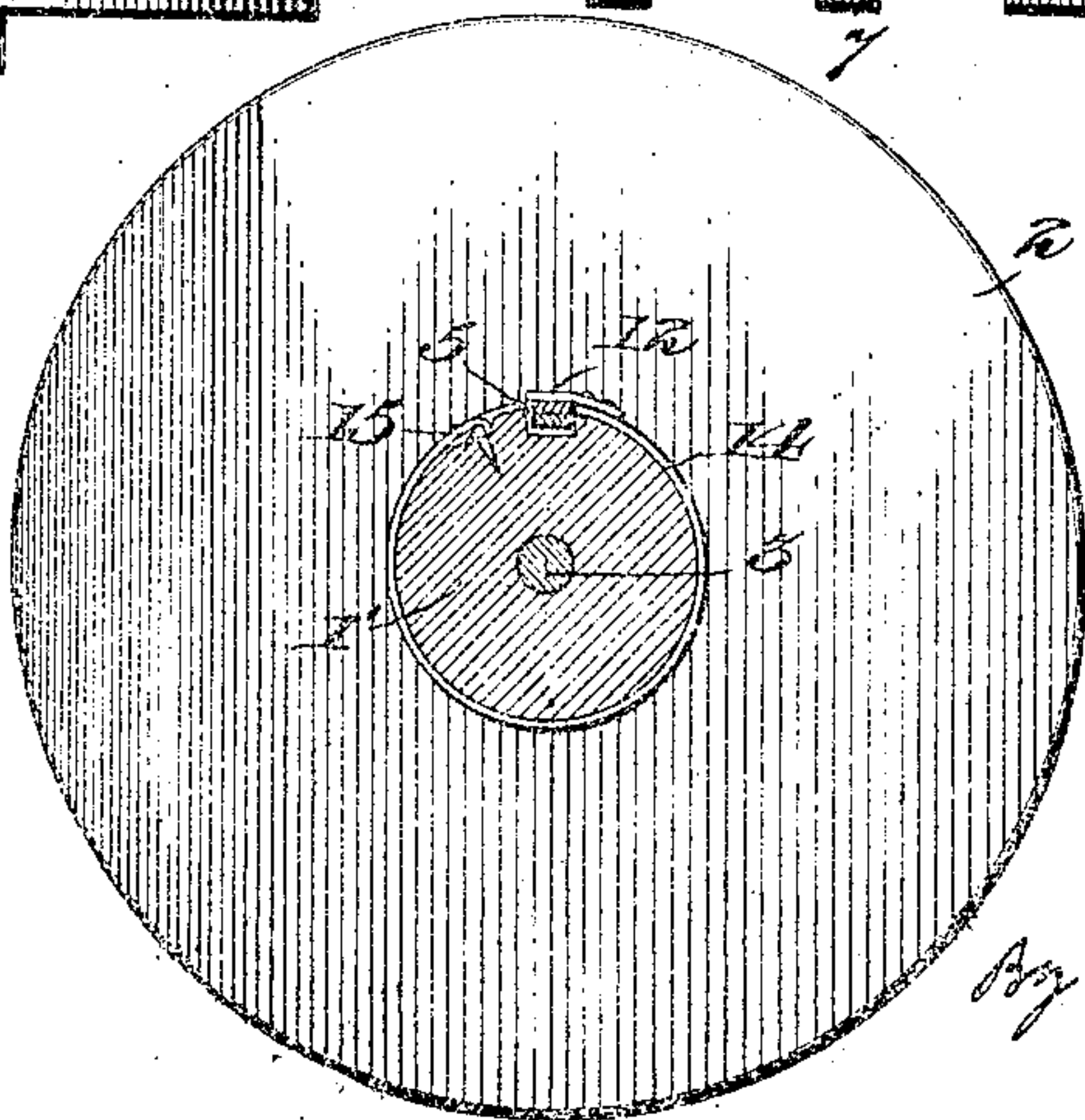


Fig. 3

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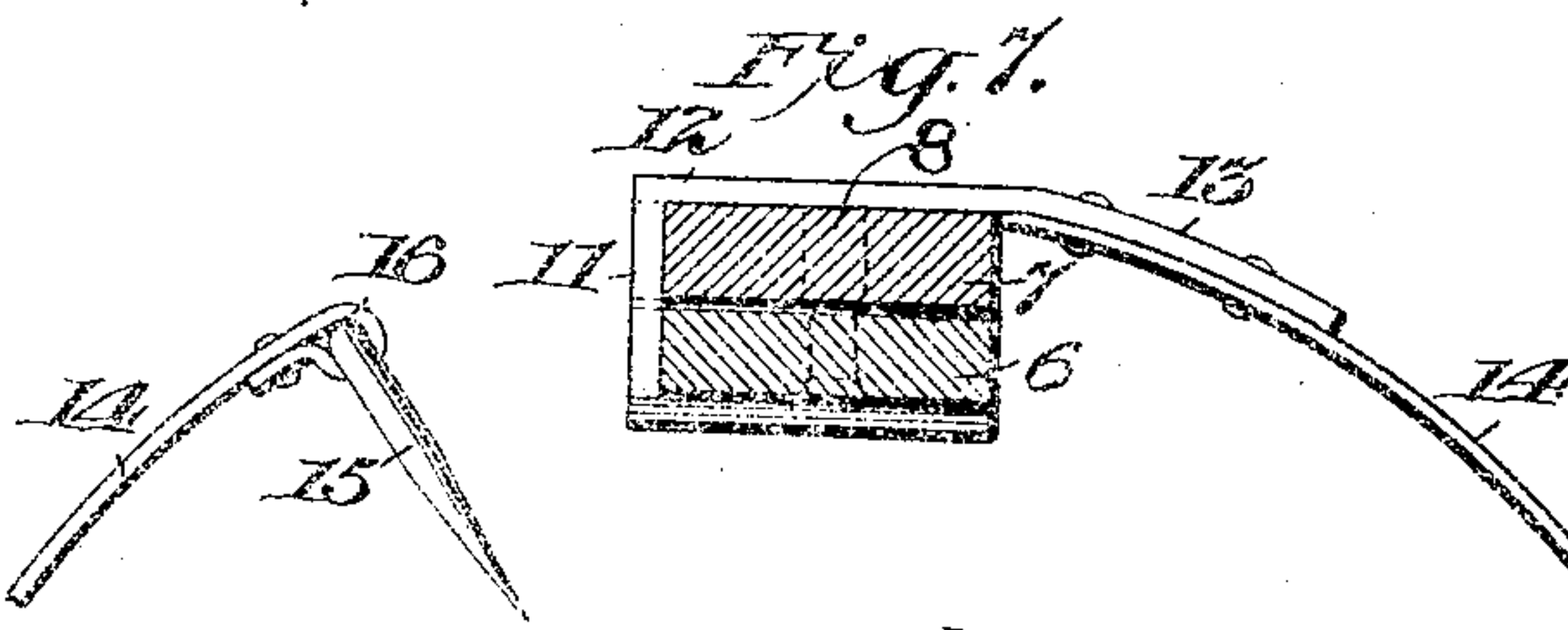
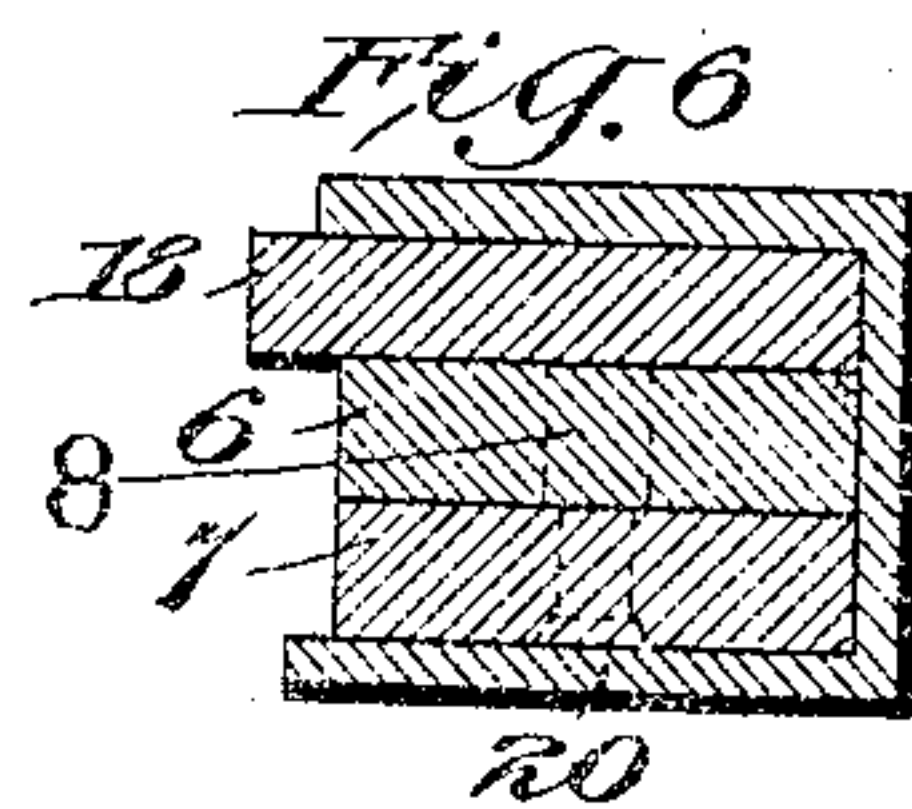
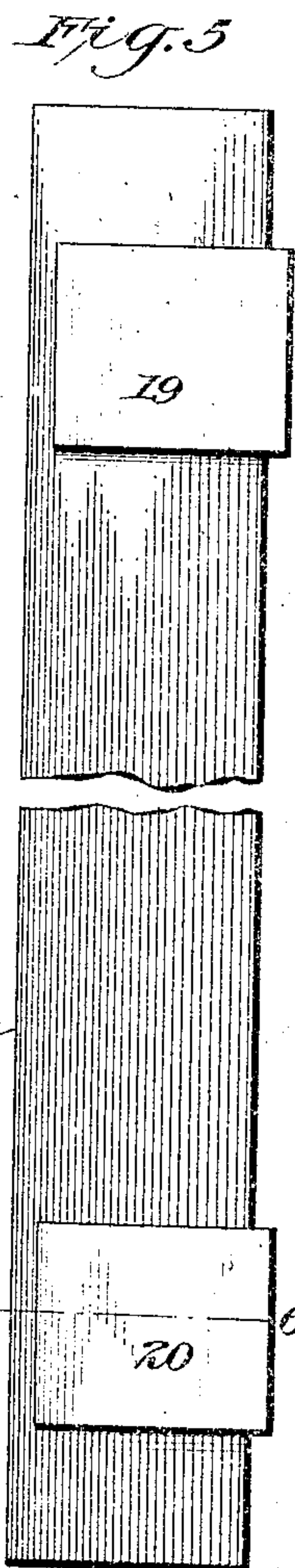
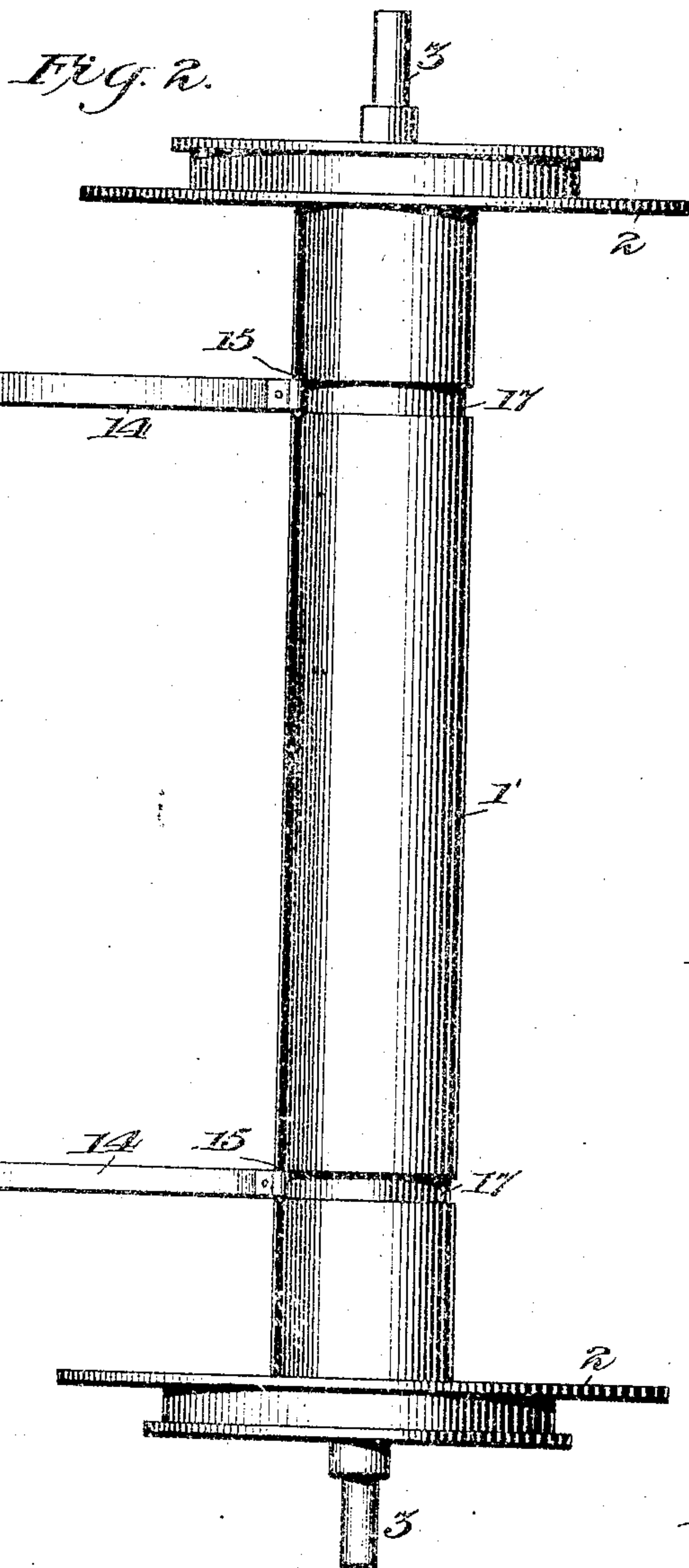
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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WARP-BEAM FOR LOOMS.

952,226.

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To all whom it may concern:

Be it known that we, JAMES A. BANGLE and SHIELDS R. HUNTER, citizens of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented certain new and useful Improvements in Warp-Beams for Looms; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates primarily to looms for weaving textile fabrics, has especial reference to warp-beams and means for securing warp thereto.

The invention has for its object simple means for reducing the waste of warp to a minimum by allowing approximately all of the warp on the beam to be worked or made into fabric, and the invention consists in certain improvements which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification:—Figure 1 represents a plan view of a warp-beam embodying our invention, and showing the warp clamp in its normal position with warp partially encircling the beam. Fig. 2 a like view, showing the warp clamp in position when all the warp has been drawn from the beam. Fig. 3 a vertical transverse section on line 3—3 Fig. 1. Fig. 4 a detail of the warp-clamp showing the bars in edge and plan view on an enlarged scale. Fig. 5 a plan view of the clamp with a gage-bar secured thereto. Fig. 6 a vertical transverse section of the same on line 6—6 Fig. 5, and Fig. 7 an enlarged view showing one of the bands in side elevation and the warp-clamp in transverse vertical section.

Reference being had to the drawings and the designating characters thereon the numeral 1 indicates the warp, 1' a warp-beam, 2 the heads of the beam, 3 the supporting shaft. In the beam is formed a longitudinal groove 4 of a depth and width to receive a warp-clamp 5. The clamp is composed of two parallel metallic bars 6, 7, the former being provided with dowel pins 8, 8, and the latter with holes or openings 9, 9, which register with and engage the pins 8, 8, to prevent one bar moving on the other, and in the

outer or front edges of the bars 6, 7, are elongated recesses or seats 10, 10, which are engaged by the front wall 11 of a metallic-hook 12 to prevent longitudinal movement of the warp-clamp.

The clamp-hook 12 is preferably made of steel, is open at its inner end to be readily engaged with and disengaged from the warp-clamp 5, is of a width corresponding to the length of the recesses 10, 10 in the bars 6, 7, and is provided with an extension 13 by which it is secured to one end of a metallic band 14, and the opposite end of said band is pivotally secured to a staple 15, by an eye 16 so that the warp-clamp and its supporting bands may wrap closely around and encircle the beam 1' when warp is being wound upon the beam, as shown in Fig. 1, and swing out from the beam when the warp on the beam has all been used, as shown in Fig. 2.

The beam is provided with concentric or circumferential grooves 17, 17, in which the bands 14 lie when the warp is being wound upon the beam to prevent entanglement of the warp with the bands, and to provide for absolutely even and regular winding of the warp and prevent uneven lengths of the strands of warp, which produce slack in the long strands as they pass through the weaving harness and consequent defects in the fabric being woven.

In Figs. 5 and 6, a gage-plate 18 is shown over the warp-clamping members 6, 7, and is held in position by clamp-jaws 19, 20. The plate 18 is a little wider than the bars 6, 7, and serves as a guide for severing the warp as it proceeds or is being unwound from the slasher, warping machine or other preparatory machine, and wound upon and the beam filled.

When a beam has been filled with warp, the member 7 is placed under or below the sheet of warp, the member 6 placed upon the sheet with the holes 9, 9, registering with the pins 8, 8, the members 6, 7, are turned over wrapping the warp around them; when the guide-plate 18, is placed upon the warp-clamp and secured by the jaws 19, 20. The sheet of warp is then severed with a knife along the outer edge of the guide-plate, the full beam removed and another beam placed in position to be filled, when the jaws 19, 20 and the plate 18 are removed and the clamp-hooks 12, 12 applied to the warp-

clamp and the warp wound upon the empty beam. In unwinding the warp, the bands 14 unwind from the beam 1' and the warp-clamp 5 extends very near to the whip-roll, when the beam is stopped and the warp severed, resulting in a minimum of waste of the warp.

Having thus fully described our invention, what we claim is—

10 1. A warp-beam provided with a longitudinal groove, a warp-clamping member engaging said groove, and metallic bands secured to and normally encircling the beam and having clamp-heads on the outer ends thereof engaging said warp-clamping mem- 15 bers.

2. A warp-beam provided with a longitudinal groove, a warp-clamping member engaging said groove, circumferential 20 grooves in said beam, metallic bands normally engaging said grooves and pivotally connected to the beam at one end, and having clamp-heads at the opposite ends engaging said warp-clamping members.

25 3. A warp-beam provided with a longi-

tudinal groove, a warp-clamping member comprising a pair of parallel metallic bars detachably connected and provided with recesses or seats on one edge thereof, and metallic bands secured to and normally encir- 30 cling the beam and having metallic clamp-heads on their outer ends engaging the warp-clamping member and said recesses or seats thereon.

4. A warp-beam provided with a longi- 35 tudinal groove, and a warp-clamping member comprising a pair of parallel metallic bars detachably connected, a gage-plate projecting beyond one of the edges of said clamping member, and metallic bands piv- 40 otally connected to the beam at one end and having clamp-heads at their outer ends engaging the warp-clamping member.

In testimony whereof we affix our signatures, in presence of two witnesses.

JAMES A. BANGLE.
SHIELDS R. HUNTER.

Witnesses:

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