

J. A. BANGLE & S. R. HUNTER.

WARP BEAM FOR LOOMS.

APPLICATION FILED SEPT. 24, 1909.

952,227.

Patented Mar. 15, 1910.

Fig. 1.

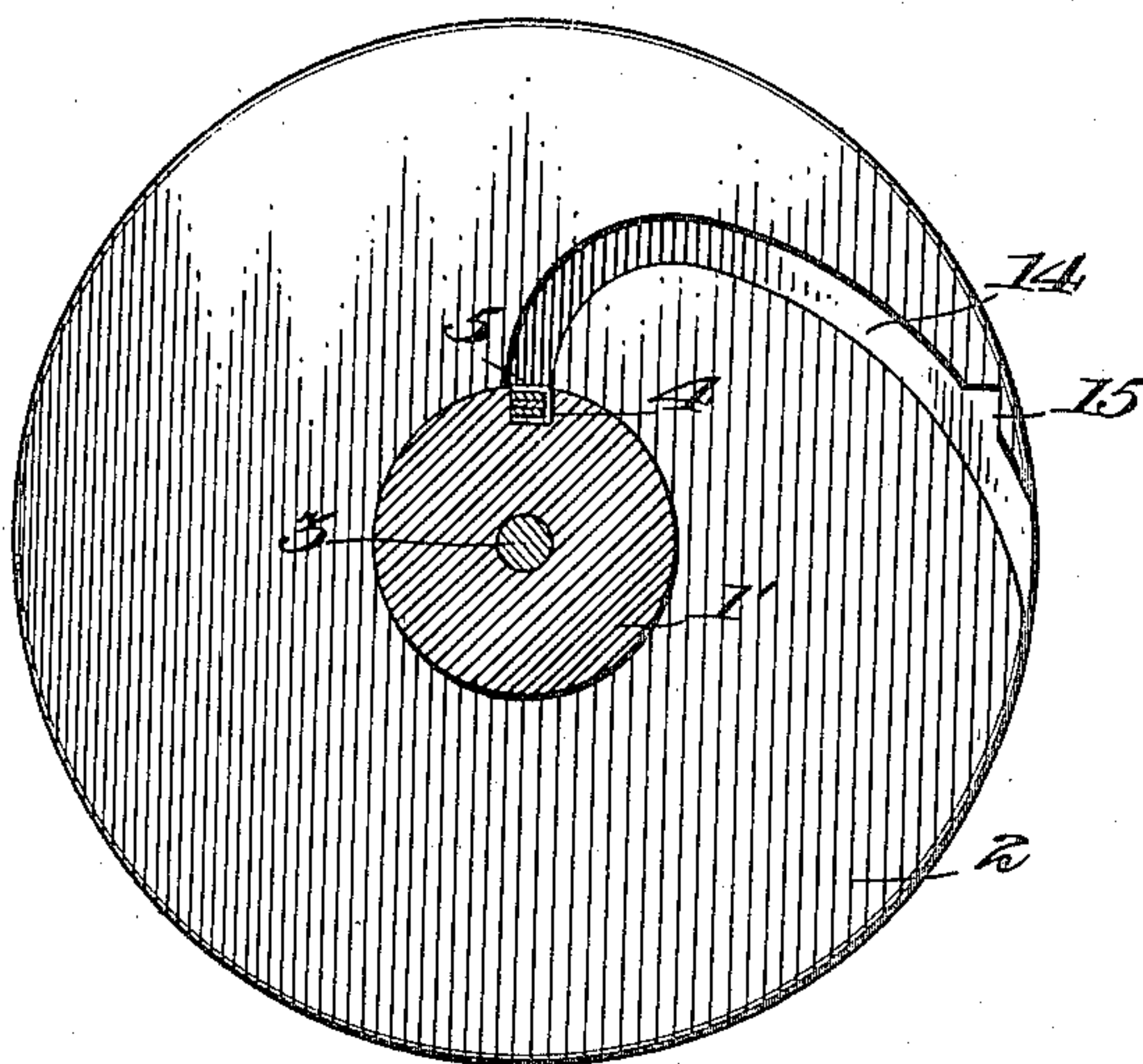


Fig. 2.

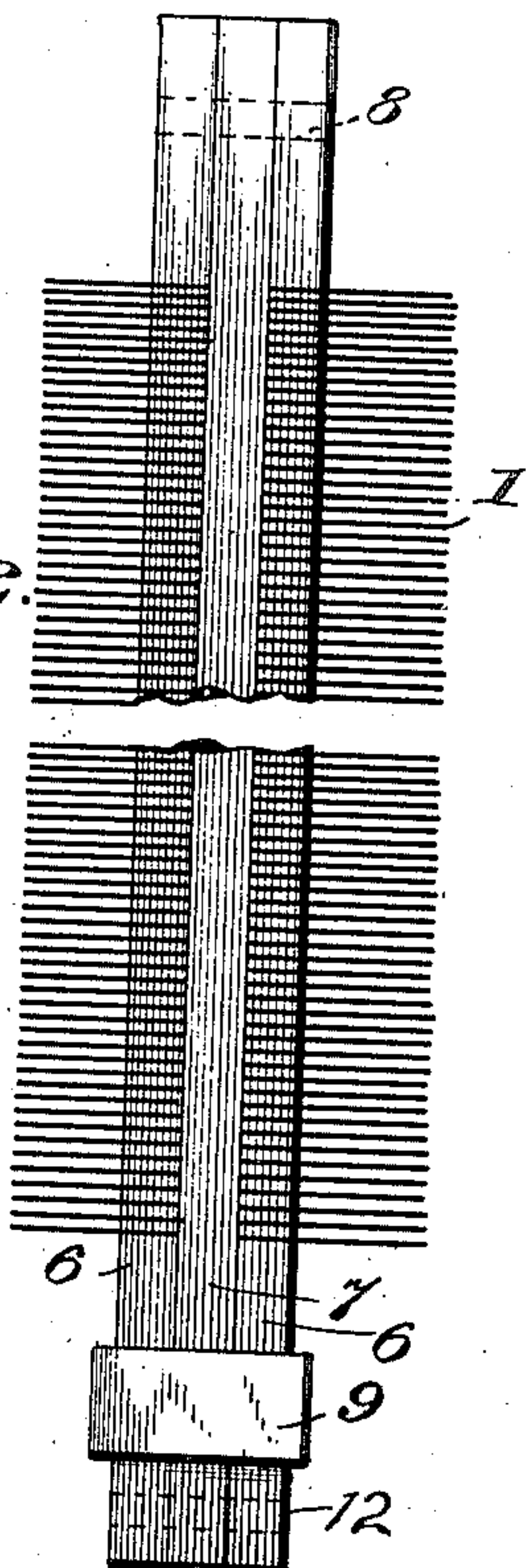


Fig. 4.

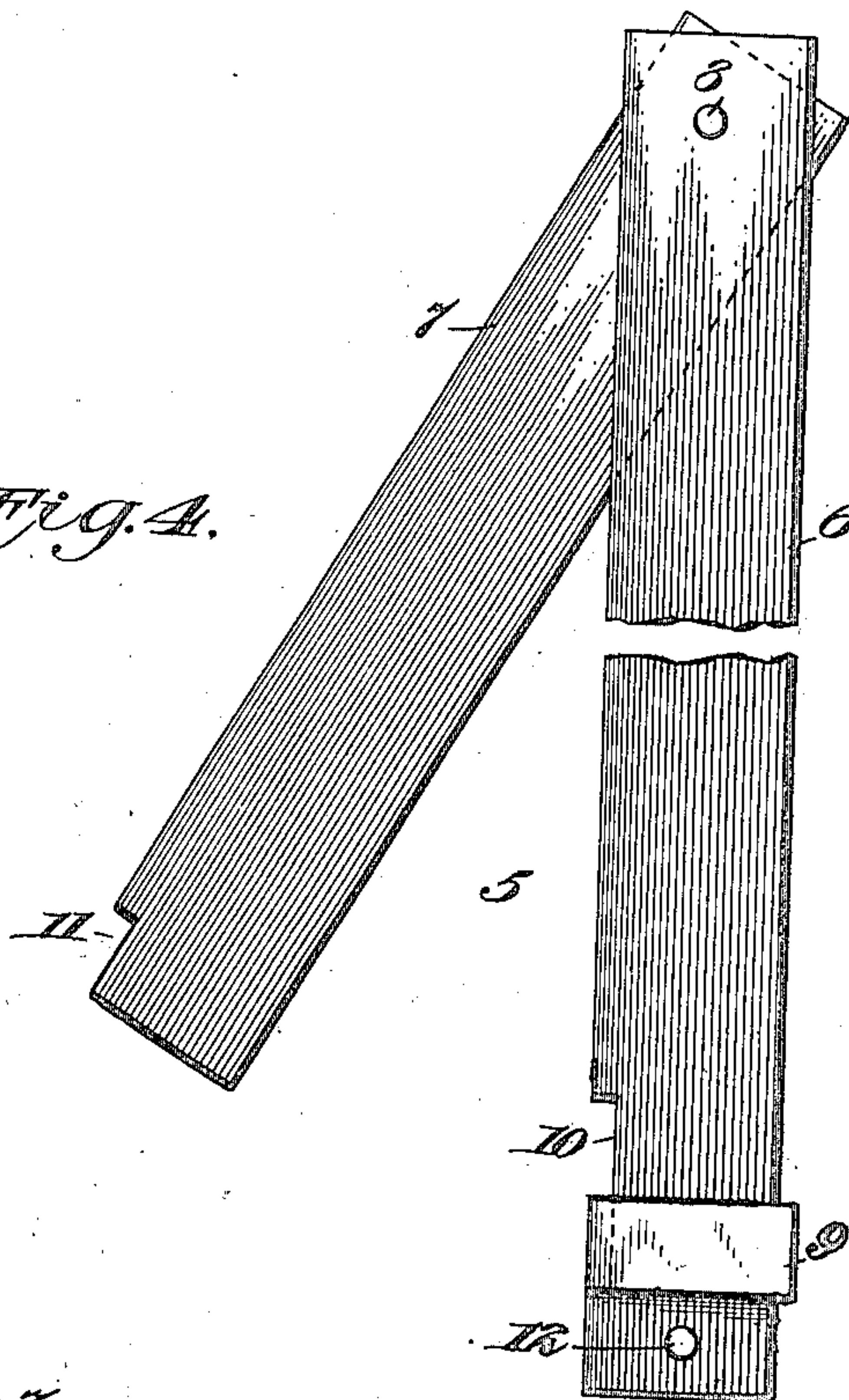
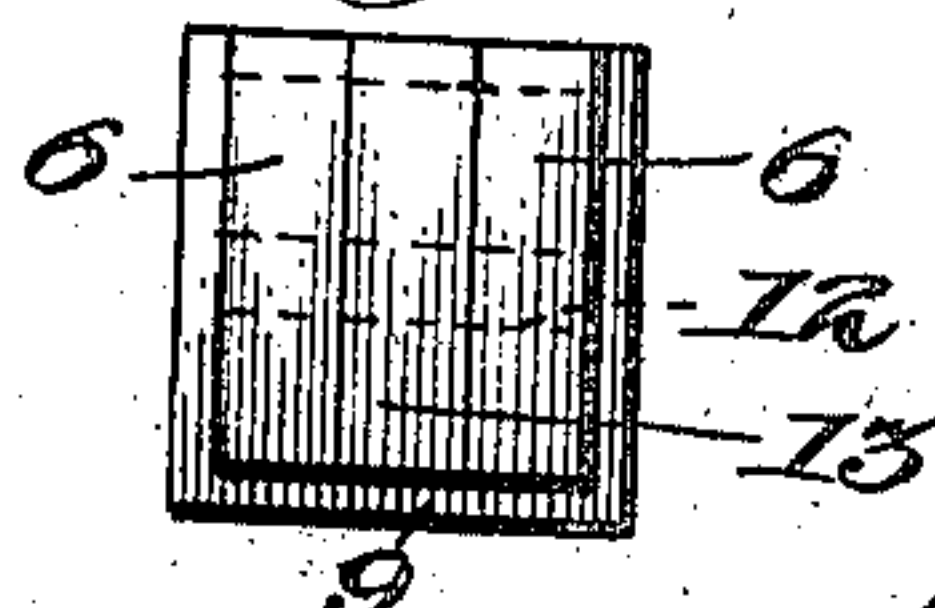


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## WARP-BEAM FOR LOOMS.

952,227.

Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed September 24, 1909. Serial No. 519,394.

*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, and 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 is an elevation of one of the heads of a warp-beam and a vertical transverse section of the beam or barrel of the beam. Fig. 2 a side elevation of a warp-clamp closed, on an enlarged scale. Fig. 3 an end view of the same, and Fig. 4 a plan view of the same showing the lever open.

Reference being had to the drawings and the designating characters thereon, the numeral 1 indicates the beam or barrel, 2 one of the heads on the beam, this being an exact duplicate of the head on the opposite end of the beam or barrel, not shown, 3 the beam supporting shaft, and 4 a longitudinal groove in the beam to receive a warp-clamp 5.

The several parts described are elaborately illustrated in another application for a patent filed herewith, Serial Number 519,393, are well known in the art and require no further elucidation.

The warp-clamp 5 is composed of two parallel bars 6, 6, and a lever or bar 7 pivotally connected to the bars 6, 6, at 8 and constructed to swing between the bars 6, 6, with a sheet of warp interposed or clamped between them, the pivot 8 acting as a hinge to allow the bar 7 to swing outward away

from the bars 6, 6, to allow the clamp to be applied to a sheet of warp by passing the bars 6, 6, under the warp with the upper edges against the warp and the bars 7 over or above the warp. The lever or bar 7 is then pressed into the space between the bars 6, 6, carrying the sheet of warp with it and firmly clamping the warp between the bars.

9 is a loose sleeve which engages the bars 6, 6, near one end thereof and slides in a recess or seat 10, and when pushed inward from the end of the bars engages a recess or seat 11 in the free end of the bar 7 and securely locks the bar 7 and the warp in the clamp.

12 is a rivet extending through the bars 6, 6, and a plate 13 the thickness of the bar 7.

On the inner or adjacent faces of the heads 2 at each end of the beam, is a spiral groove 14, the width of which is equal to the thickness of the warp-clamp and whose inner end registers with the groove 4 in the beam or barrel and extends to the perimeter of the head, and near the outer end of the groove 14 is a seat 15 cut into the outer wall of the groove.

The clamp having been attached to a sheet of warp from a slasher, warping machine or other preparatory machine is inserted in the outer ends of the grooves 14 in the heads 2 and pushed into the longitudinal groove 4 in the beam, when the beam is revolved and the warp wound upon the beam and the clamp until the beam has been filled, when the warp is severed, the beam removed and replaced by an empty beam.

In supplying warp from the beam to a loom, when the warp has all been used, the warp-clamp travels outward in the grooves 14, until it reaches the seat 15 where it is stopped and the tension on the warp stops the loom. The warp in this instance is also consumed at a minimum of loss, by the close proximity of the warp-clamp to the whip-roll in supplying the warp to the loom.

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

1. A warp-beam provided with a longitudinal groove, heads on the beam provided with spiral grooves on the inner or adjacent sides thereof, and a warp-clamping member normally engaging the groove in the beam, and grooves in the heads to limit its motion.

2. A warp-clamp comprising a pair of



parallel bars, a movable bar pivotally supported between said bars, and a movable sleeve engaging one end of the movable bar; in combination with a warp-beam having a longitudinal groove, and grooves in the heads thereof engaged by said clamp.

3. A warp-beam provided with a longitudinal groove, heads on the beam having spiral grooves in their adjacent surfaces provided with seats near the outer ends thereof, and a warp-clamp adapted to engage said grooves.

4. A warp-beam provided with a longi-

tudinal groove, heads on the beam provided with grooves opposite the groove in the beam and extending to the perimeter of said heads, and a warp-clamp adapted to engage the groove in the beam and travel in the grooves in the heads.

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

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SHIELDS R. HUNTER.

Witnesses:

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