

No. 829,838.

PATENTED AUG. 28, 1906.

W. P. BROWN.
WOOD BENDING MACHINE.
APPLICATION FILED APR. 3, 1905.

3 SHEETS—SHEET 1.

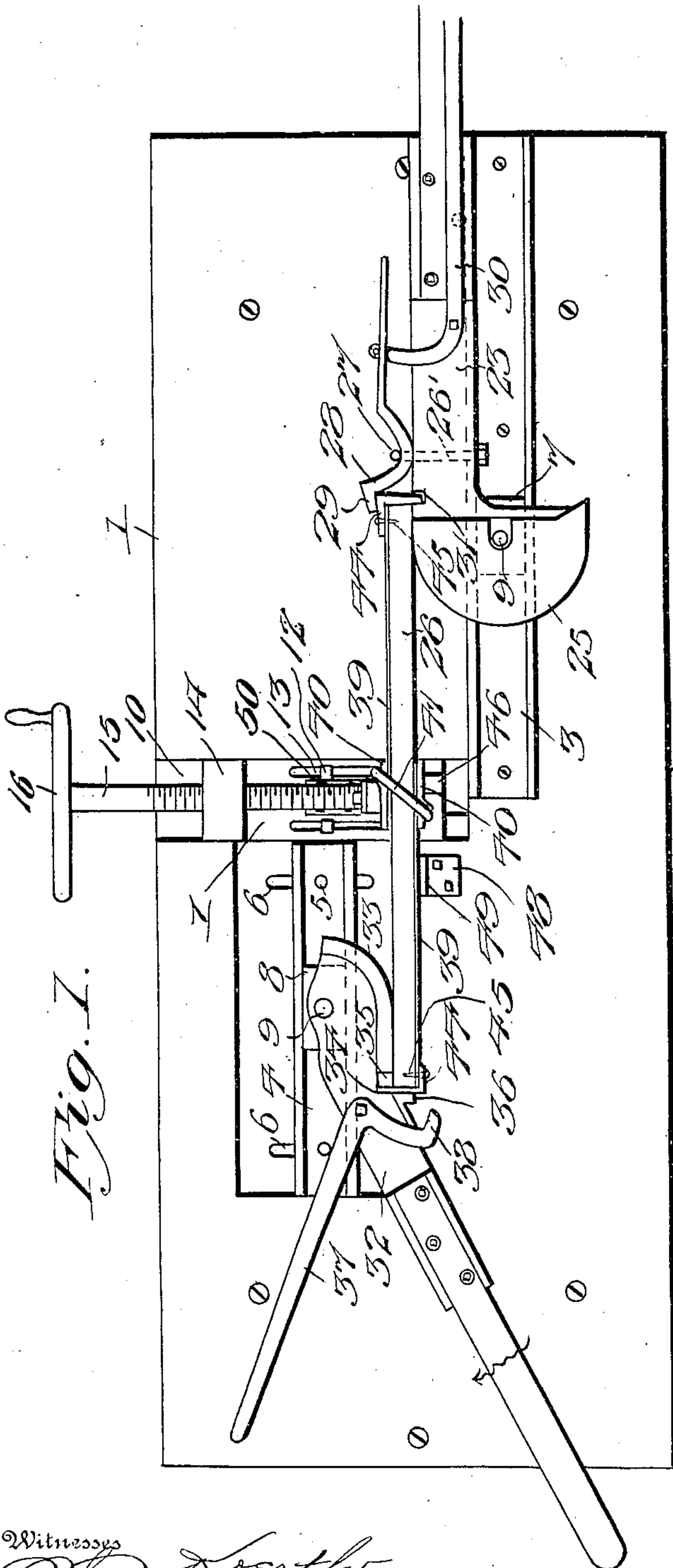


Fig. 1.

Fig. 5.

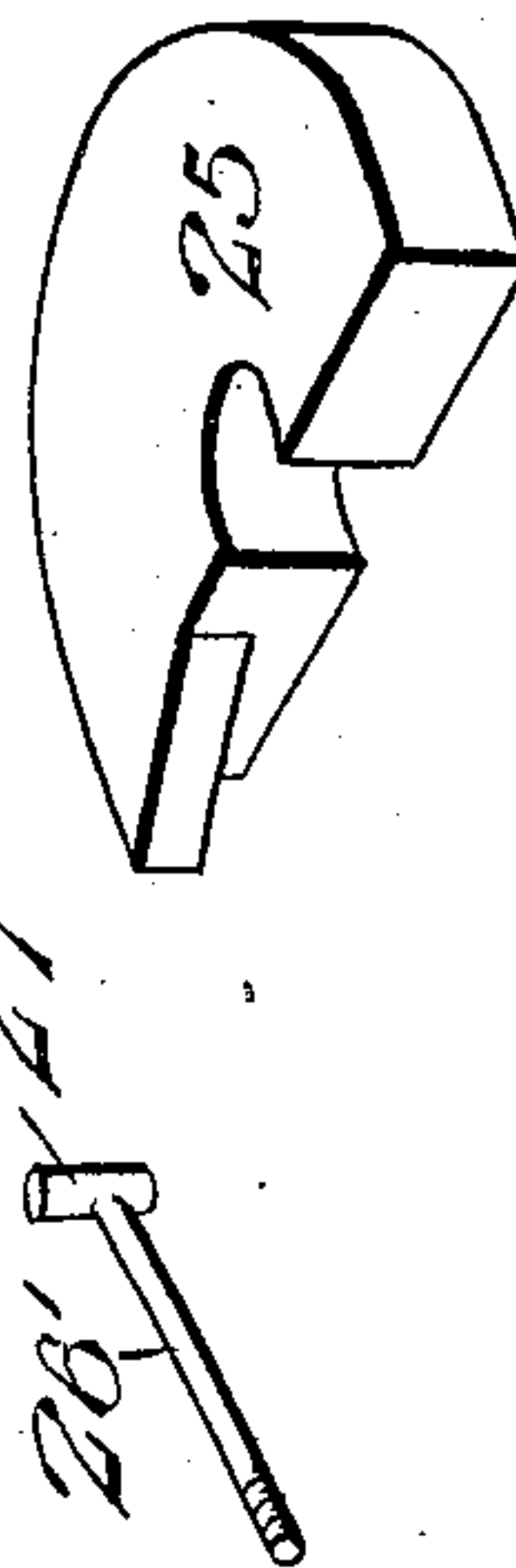
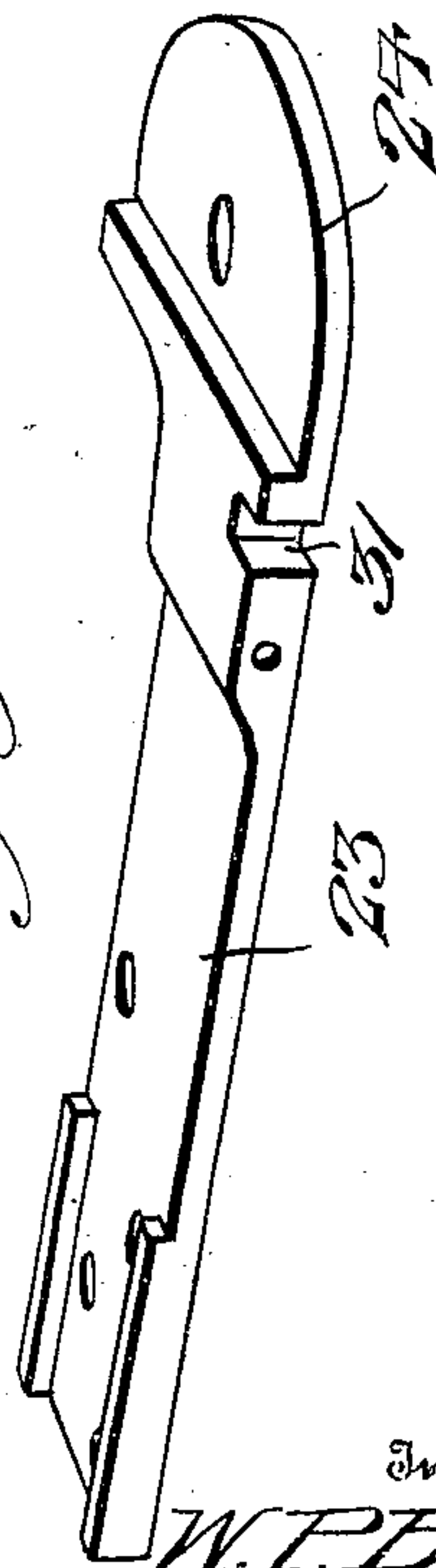


Fig. 7.



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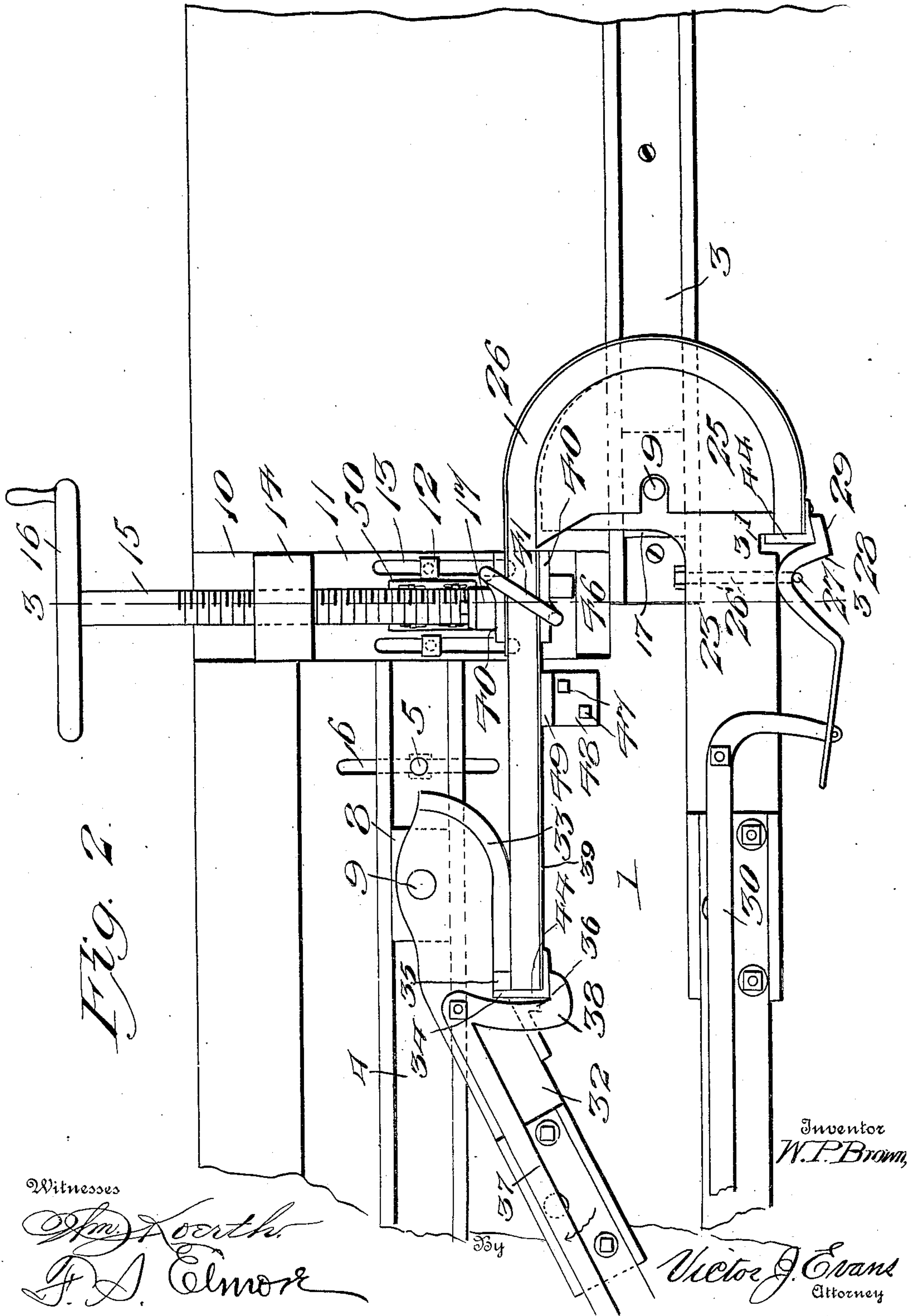
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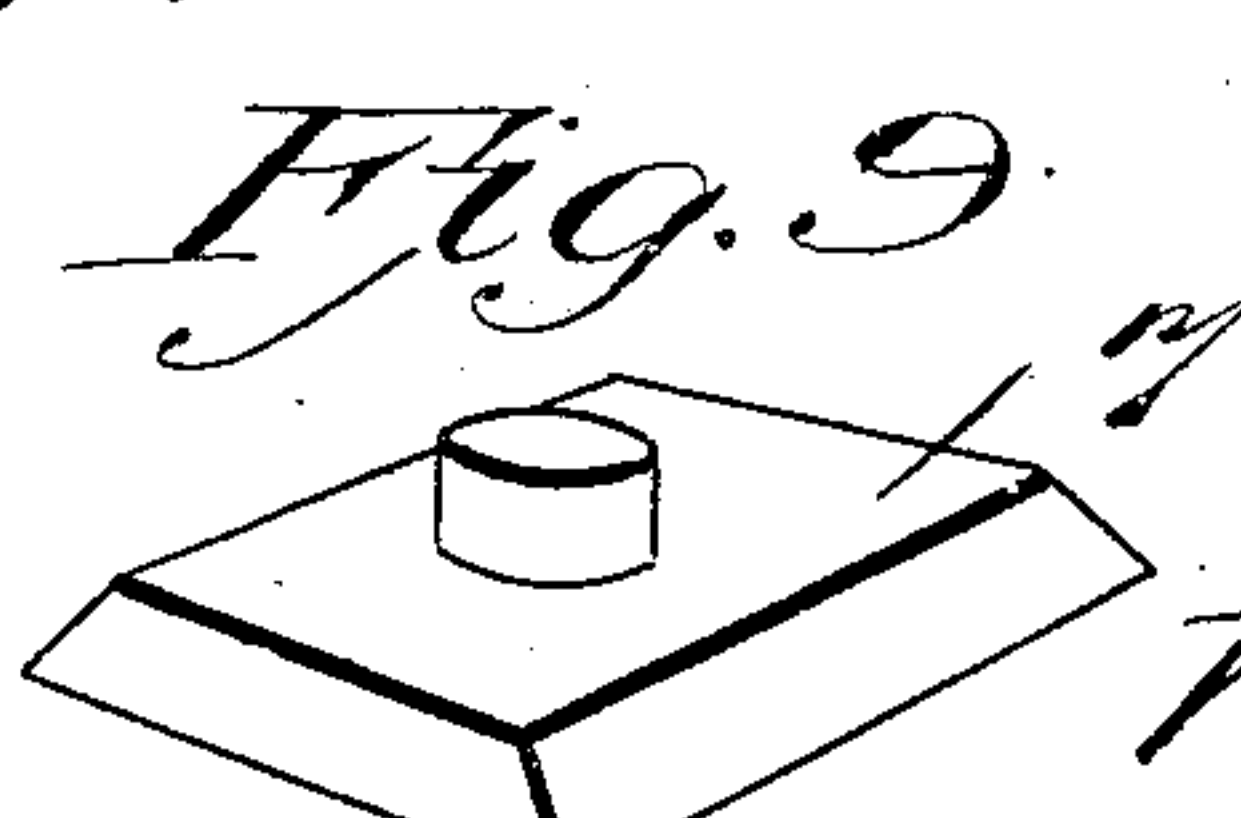
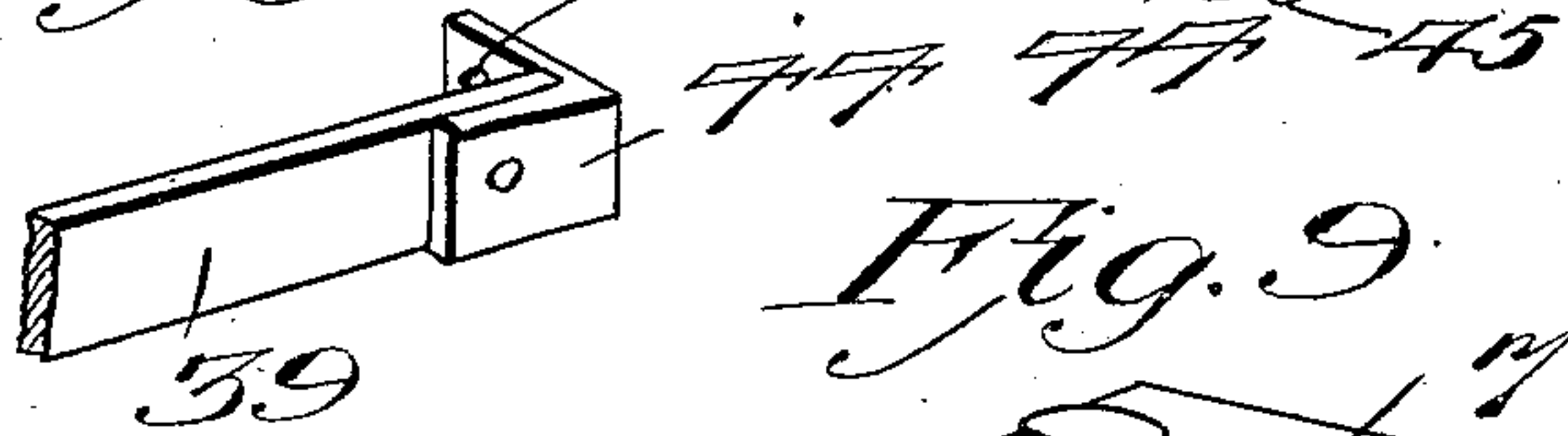
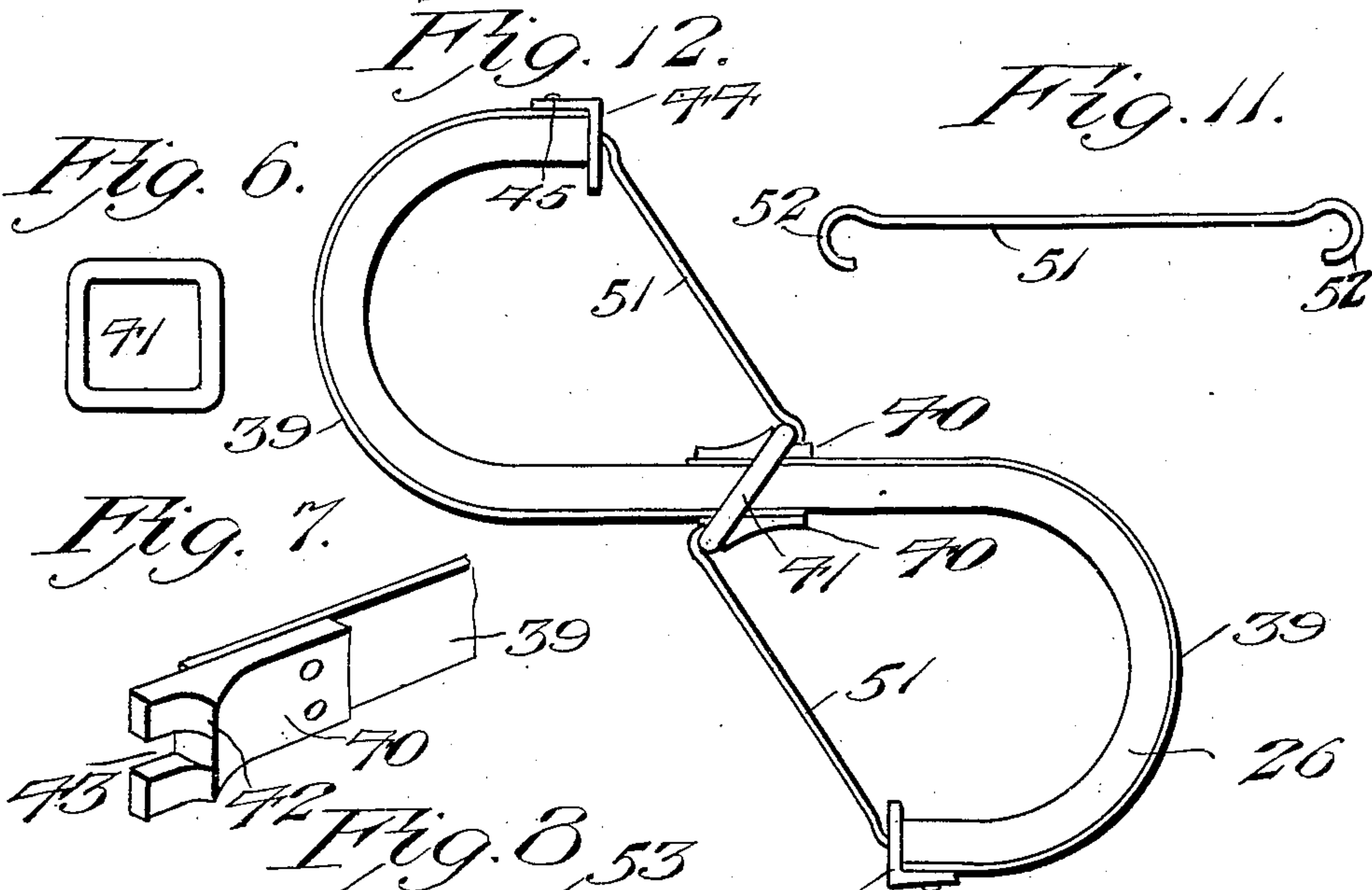
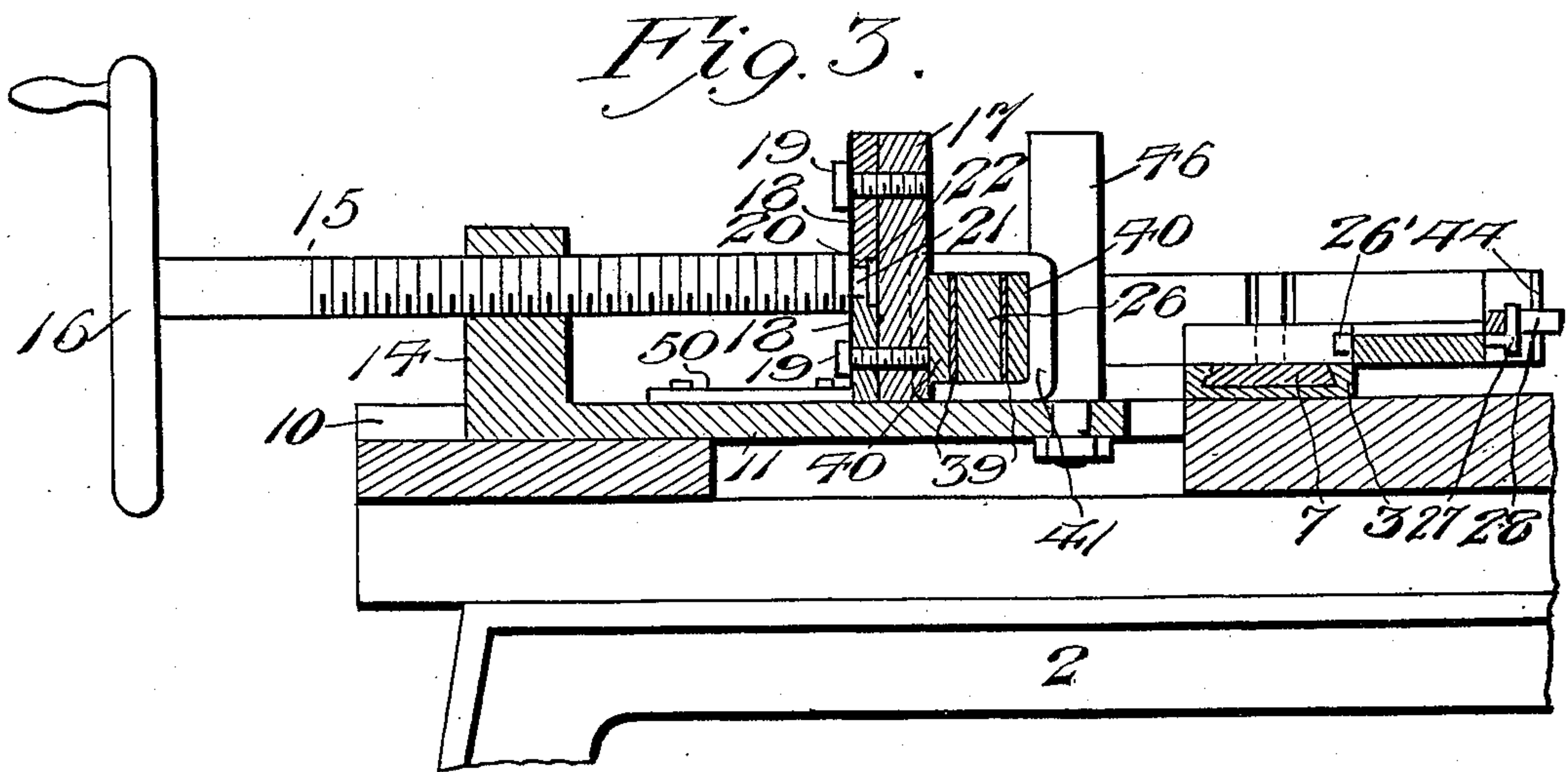


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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM P. BROWN, OF SILER CITY, NORTH CAROLINA.

WOOD-BENDING MACHINE.

No. 829,838.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed April 3, 1905. Serial No. 253,479.

To all whom it may concern:

Be it known that I, WILLIAM P. BROWN, a citizen of the United States of America, residing at Siler City, in the county of Chat-
5 ham and State of North Carolina, have invented new and useful Improvements in Wood-Bending Machines, of which the following is a specification.

My invention has relation to wood-bend-
10 ing machines; and it consists in the construction and arrangement of parts, as will be hereinafter described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is
15 a top plan view of a machine embodying the invention and showing the bending members in normal position. Fig. 2 is a similar view, on an enlarged scale, showing one of the mem-
20 bers swung to position for partially bending the material. Fig. 3 is a vertical transverse sectional elevation, the section being taken on the line 3 3 of Fig. 2. Figs. 4 and 5 are detail perspective views of parts of one of the
25 bending members. Fig. 6 is a detail view of the clamping-ring. Figs. 7 and 8 are detail perspective views of the end portions of one of the shaping-bands. Fig. 9 is a perspective view of one of the sliding blocks or heads. Fig. 10 is a perspective view of one of the piv-
30 otting-bolts. Fig. 11 is a detail view of one of the engaging elements or rods. Fig. 12 is a plan view showing the strip of wood bent and fixed in such position.

Referring to the drawings, 1 designates a
35 bed or table supported by a frame 2 and provided with a fixed dovetailed track or guide 3 and a transversely-adjustable dovetailed track or guide 4, movably attached to the
40 table by means of fastening members or bolts 5, entered through slots 6, there being slidably disposed in the primary guide 3 a dove-
tailed block or head 7 and in the secondary guide 4 a dovetailed block or head 8, these
45 blocks, which are in dovetailed engagement with their respective guides, being provided with vertically-uprising studs or pintles 9.

Extending transversely of the table adjacent the longitudinal center of the latter is a
50 groove or depression 10, which terminates at its inner end adjacent the inner end of the primary guide-track 3 and constitutes a guideway for the reception of a member or plate 11, adjustably secured in place by means of fastening members or bolts 12, en-
55 tered through longitudinal slots 13, said plate being provided at its outer end with a

vertically-uprising portion or flange 14, through which is threaded a pressure mem-
ber or screw 15, provided at its outer end with an operating member or hand-wheel 16
60 and at its inner end with a vertically-disposed pressure-head 17, fixed to the end of the screw 15 by attaching members or plates 18, in turn secured to the head 17 by means of screws or other fastening members 19, the
65 members 18 being provided at their inner ends with engaging portions or rabbets 20, which fit upon a reduced squared portion or neck 21 and a head 22, formed at the inner end of the screw. At this point it is to be
70 noted that the guides 3 and 4 are relatively spaced in a direction transversely of the table and terminate at their inner ends adjacent the longitudinal center of the latter, the inner terminal of the guide 4 being flush with
75 one wall of the transverse guideway 10.

Pivoted to the primary block 7 through the medium of the stud or pintle 9 is a bending member or lever 23, having at its inner end a
80 semicircular portion or head 24, recessed in its upper face for the reception of a head-block 25, the thickness of which latter may be varied to accord with the width of the strip 26 of material under treatment, there
85 being pivoted to the inner edge of the lever 23, by means of a member or bolt 26', having a cylindrical bearing-head 27, a clamping member or lever 28, provided with an engag-
90 ing portion or jaw 29 and having its stem or shank engaged by a cooperating lever 30, pivoted to the upper side face of the member 23, which is further provided in its inner face and adjacent the head 24 with a notch or re-
95 cess 31 for a purpose which will hereinafter appear.

Pivoted to the secondary block 8 by means
of the pintle 9 is a secondary bending mem-
ber or lever 32, provided with a curve head 33 and at a point adjacent the latter with a
100 notch or recess 34, upon opposite sides of which are bearings 35 36, there being pivoted to the upper side face of the lever a clamping member or lever 37, having an engaging por-
105 tion or jaw 38.

Applied to opposite sides of the strip of
110 material 26 and extending from the ends of the latter to a point somewhat beyond its longitudinal center are flexible metal retain-
ing members or plates 39, the ends of which overlap relatively at the center of the strip
115 and are engaged by clamping members or blocks 40, in turn secured in place by a collar

or link 41 of substantially rectangular form, as seen in Fig. 6, the blocks 40 being riveted or otherwise secured to their respective bands 39, as seen in Fig. 7, and having laterally-projecting bearing portions or enlargements 42, beyond which the outer ends of the blocks are recessed, as at 43, for a purpose which will hereinafter appear, while to the outer ends of the strip 26 there is applied substantially L-shaped bearing members or plates 44, secured in position upon the material by means of screws 45, entered through registering perforations in the plates and bands. The end flanges or portions of the plates 44 project slightly beyond the side faces of the material 26 for entrance respectively into the seats or recesses 34 of the bearing-heads, and the outer side faces of the plates are engaged, respectively, by the jaws 29 and 38 of the clamping-levers for securing the ends of the material operatively to the bending members or levers 23 32.

Fixed at its lower end to the inner end of the member or plate 11 is a vertically-uprising bearing member or post 46, adapted to bear upon the outer face of the adjacent head-block 40, for a purpose more fully hereinafter described, while to the table 1 there is fixed, by means of bolts 47, a bearing member or block 48, disposed adjacent one side of the guideway 11 and near the inner end of the latter, said block being provided with a vertically-uprising bearing portion 49, which in practice bears against the adjacent face of the strip of material 26. There is also attached to the plate 11 a pair of longitudinally-extending guide-plates 50, spaced transversely to receive between them the lower end of the bearing-head 17 for guiding the latter in its movements under the action of the screw 15.

In practice the material 26, having the flexible retaining members or bands 39 applied and secured thereto in the manner herebefore explained, is positioned upon the table and the screw 15 manipulated for causing the bearing-head 17 to clamp the material securely against the post 46 and bearing portion 49 of the block 48. The ends of the strip 26 are next secured to the bending members through the medium of the clamping members 28 and 37. The primary member 23 is next swung upon its pivot 9 from the position illustrated in Fig. 1 to that shown in Fig. 2, thereby bending one end of the material into substantially semicircular form, during which operation the primary block 7 slides freely in its guideway 3, but is prevented from vertical or lateral movement owing to its dovetailed engagement with the guide. The secondary bending member or

lever 32 is next swung upon its pivot 9 in the direction indicated by the arrow in Fig. 2, thereby bending the other end of the strip of material 26 in a reverse direction, but similar to the bend imparted by the member 23.

It will be particularly observed that under my improved construction and owing to the provision of the dovetailed guides and dovetailed blocks movable therein liability of the bending-levers tilting and hand-twisting the strip of material is wholly obviated, while at the same time free movement of the blocks in the guides is insured and, furthermore, that adjustment of the parts for properly centering the strip between the bending-levers may be conveniently effected.

After the material has been properly bent in the manner just explained rods or elements 51, having their ends bent to produce engaging portions or hooks 52, are applied for maintaining the material in its bent form until it has set. These elements are applied in position by entering the hooks 52 at the inner ends thereof into the slots 43 of the heads 40 for engagement with the band or link 41, as seen in Fig. 12, and the hooks 52 at the outer ends of the elements into openings 53, provided in the end portions of the bearing-plates 44, it being obvious that the flexible plates or bands 39 will aid materially in maintaining the wood in its bent shape during the setting operation.

From the foregoing it will be seen that I produce a comparatively simple inexpensive device admirably adapted for the attainment of the ends in view, it being understood minor changes in the details herein set forth may be resorted to without departing from the spirit or scope of the invention.

Having thus described the invention, what is claimed is—

A wood-bending machine comprising a table provided with dovetailed guides, one of said guides being fixed and the other transversely adjustable, means for holding the strip of material in position upon the table and between the guides, dovetailed blocks slidably engaged by the guides, notched bending-levers pivotally connected to each block, bent supplementary levers pivoted on the outer surfaces of the bending-levers and provided with jaws for holding the strip-retaining plate in position in the notches during the bending operation, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM P. BROWN.

Witnesses:

S. S. SMITH,

H. M. PATTERSON.