

(No Model.)

2 Sheets—Sheet 1.

S. F. MOORE.
CARVING MACHINE.

No. 409,695.

Patented Aug. 27, 1889.

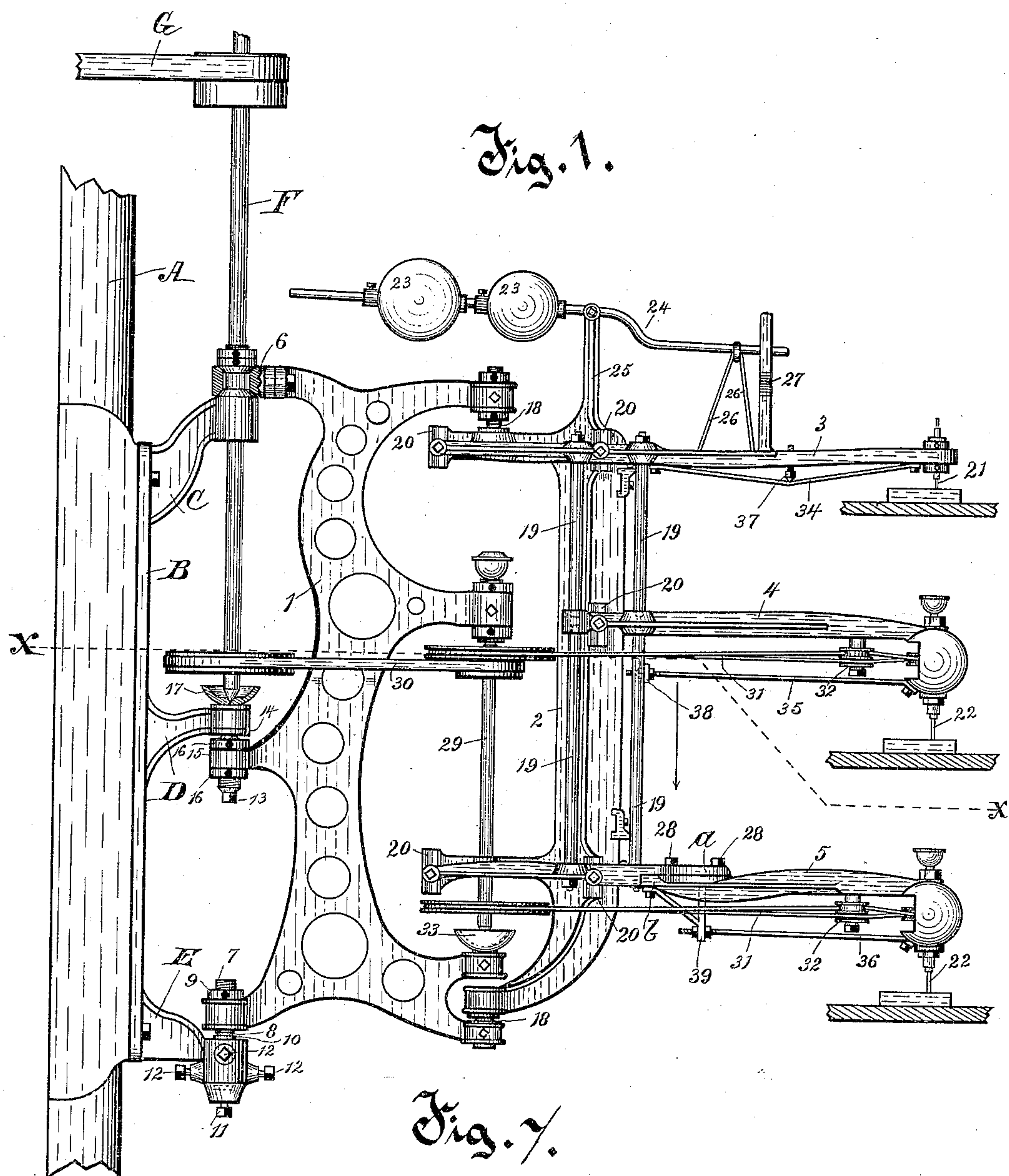
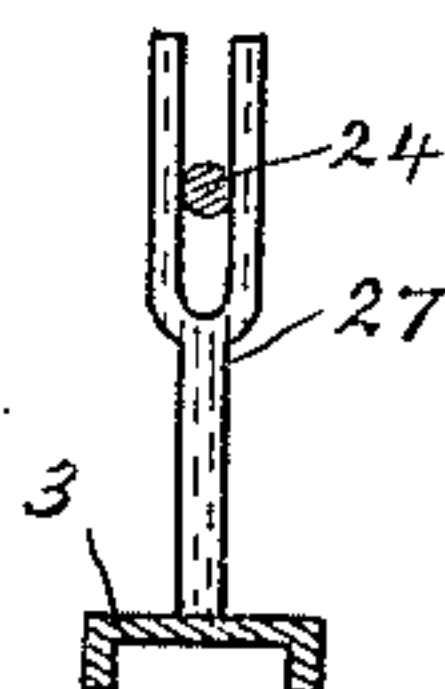


Fig. 7.



Witnesses.

C. H. Keeney,
Anna Faust.

Inventor.

Stephen F. Moore
By Ernst Benedict
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

S. F. MOORE.
CARVING MACHINE.

No. 409,695.

Patented Aug. 27, 1889.

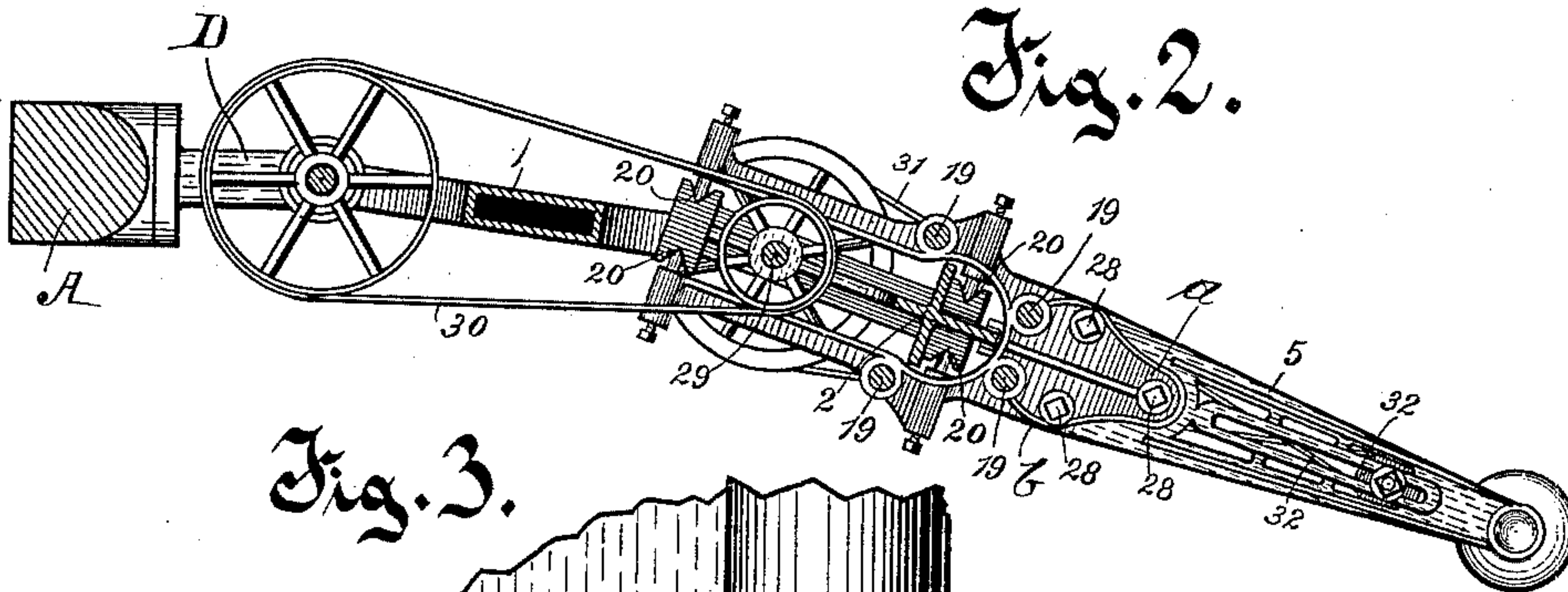


Fig. 3.

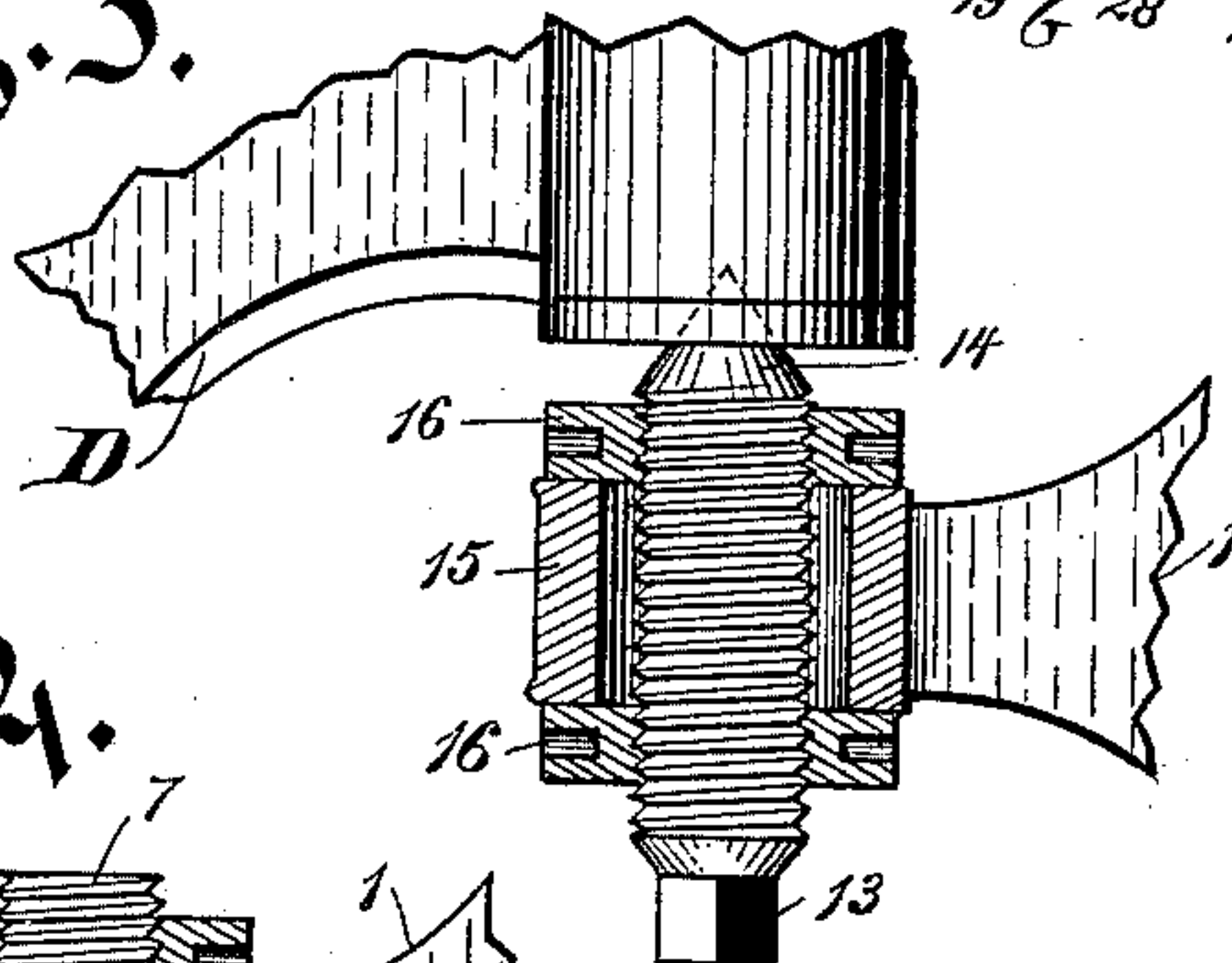


Fig. 4.

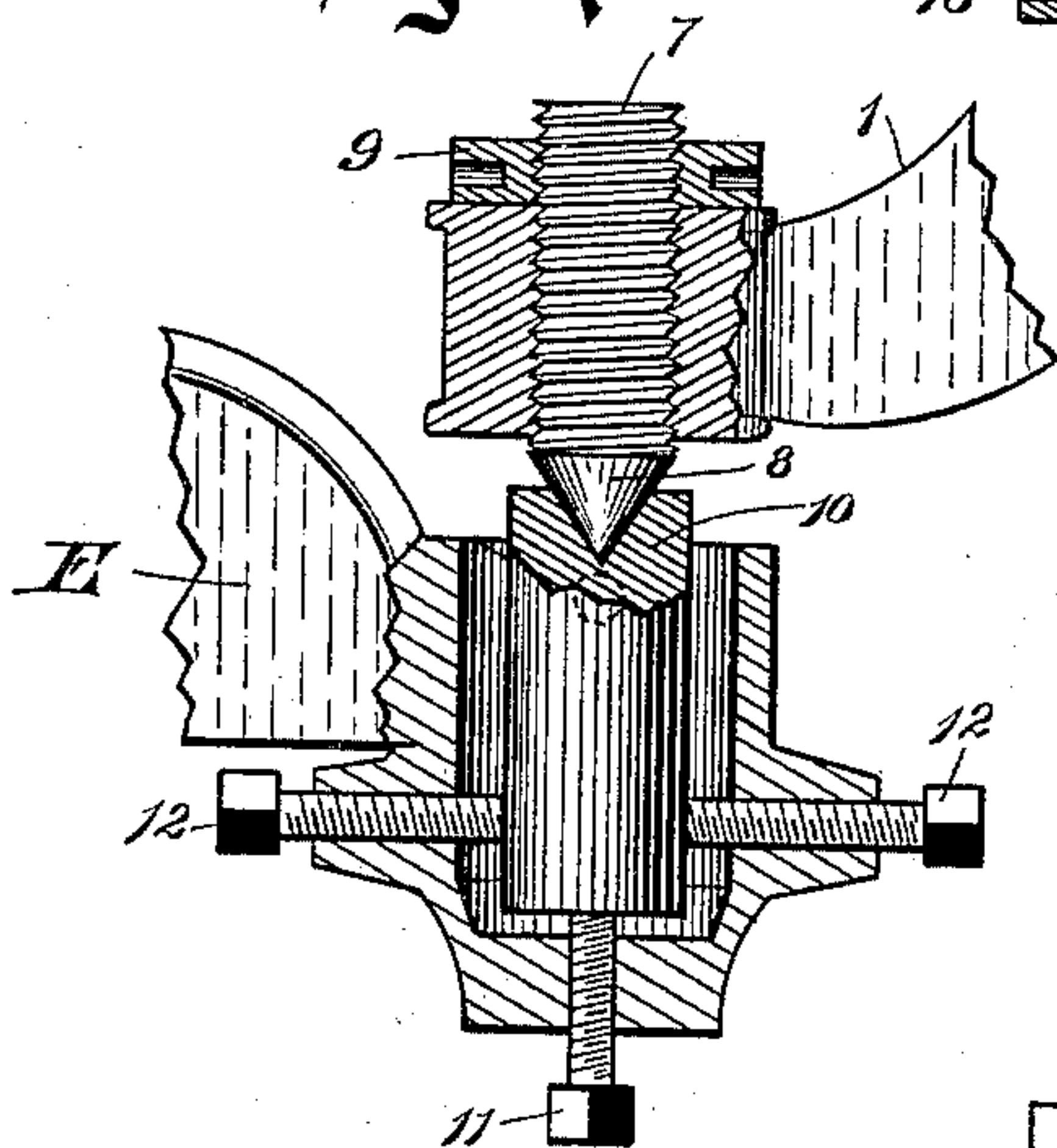


Fig. 6.

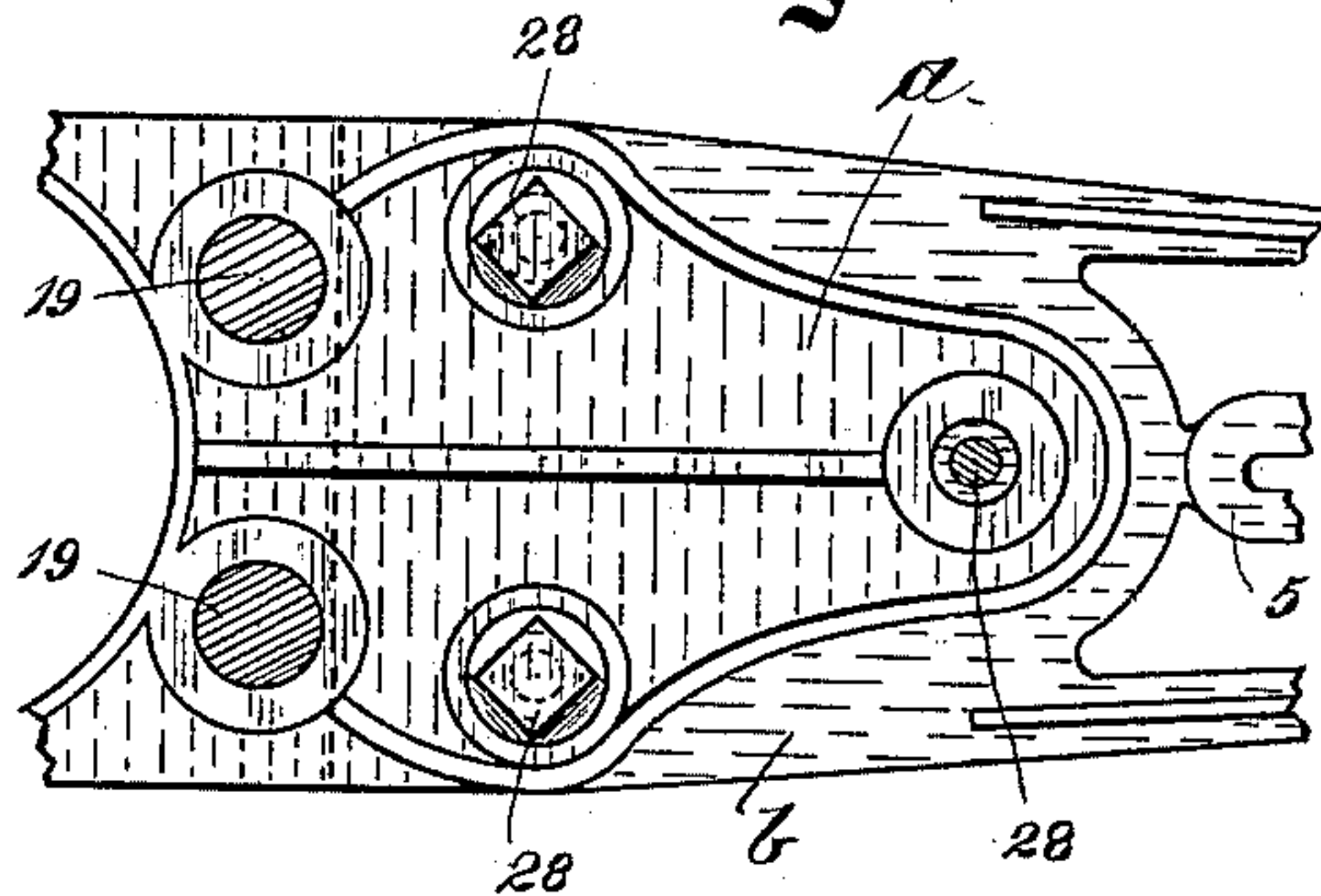
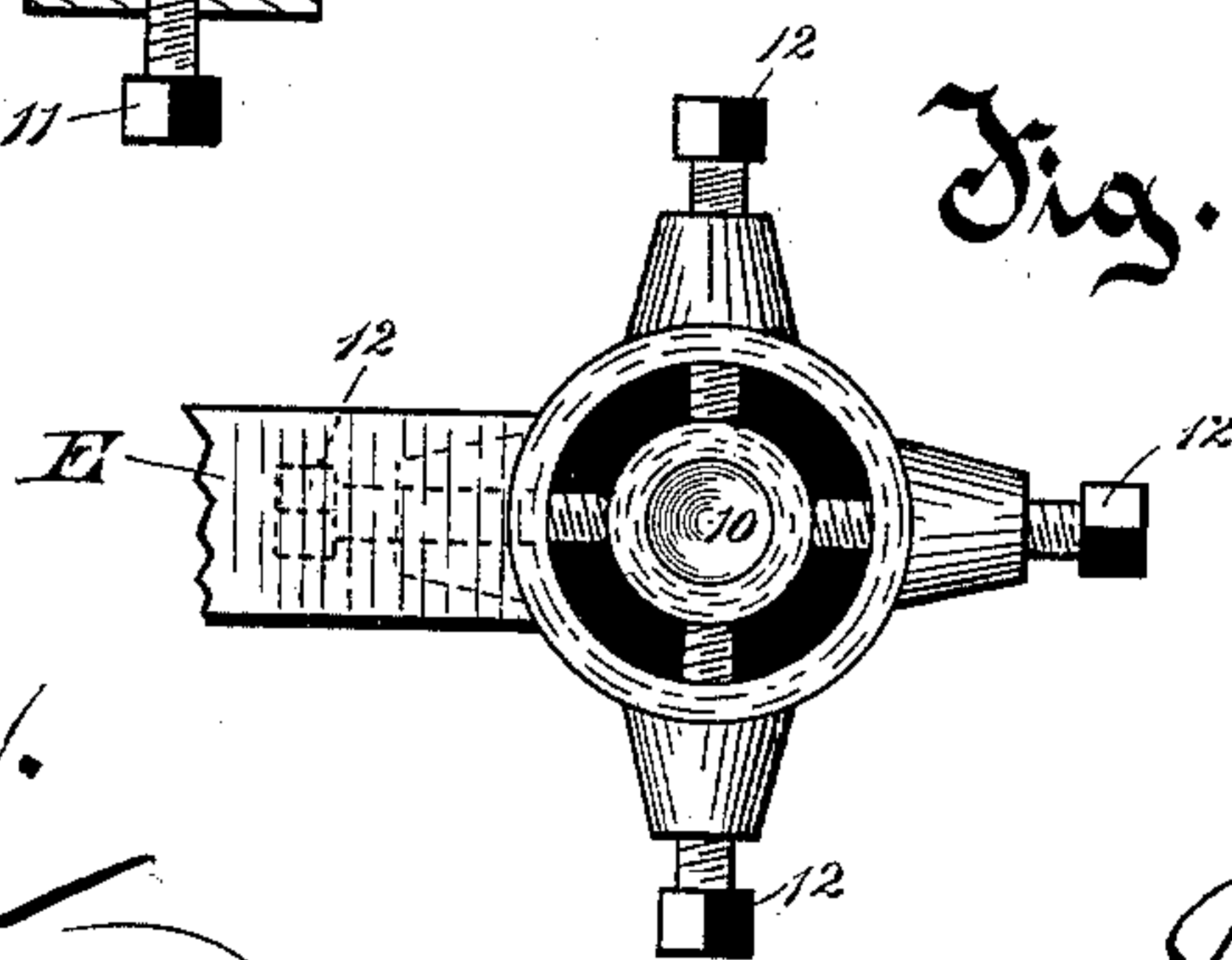


Fig. 5.



Witnesses.

C. H. Keeney,
Rosa Faust.

Inventor.

Stephen F. Moore
By Emmit R. Ruckelshaus
Attorneys.

UNITED STATES PATENT OFFICE.

STEPHEN F. MOORE, OF MILWAUKEE, WISCONSIN.

CARVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 409,695, dated August 27, 1889.

Application filed February 11, 1889. Serial No. 299,483. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN F. MOORE, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Carving-Machines; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in the carving-machine for which Letters Patent of the United States No. 384,995, issued June 26, 1888, and No. 394,710, issued December 12, 1888, were granted to me, my present invention being embodied in special features of the mechanism hereinafter to be claimed.

In the drawings, Figure 1 is a side elevation of my improved device. Fig. 2 is a plan of the lower portion of the device shown in Fig. 1, taken on line X X, looking downwardly. Fig. 3 is a detail, part in vertical section, of the middle axle pin and bearing of the principal swinging bracket or arm. Fig. 4 is a detail, part in vertical section, of the lower axle pin and bearing of the principal bracket or arm. Fig. 5 is a plan or top view of the bearing shown in Fig. 4. Fig. 6 is a plan of the adjustable joint in the lower tool-carrying arm. Fig. 7 is a front elevation of a guide-post.

In the drawings, A is a post, to which a bracket B is secured, which bracket is provided with arms C, D, and E, one above the other, adapted to support the mechanism thereon, and in two of which, C and D, the driving-shaft F is journaled. The shaft F is provided with a driving-pulley, on which a band G runs, which supplies the motive power for the operative mechanism. A bracket or arm 1 is pivoted to and supported on the brackets C, D, and E, and carries thereon the standard 2, on which are supported the vertically-moving arms 3, 4, and 5, which arms swing horizontally with the standard 2 on bracket 1. The bracket 1 is hinged near its upper extremity at 6 on the arm C by the shaft F by the same means and in the manner as corresponding parts are hinged in my earlier device, as is particularly pointed out in the Patent No. 394,710. At its lower extremity the bracket 1 is pro-

vided with a screw-threaded pin 7, turning through the bracket and terminating at its lower end in a conical pivot 8. A jam-nut 9 turns on the pin 7 against the bracket 1, whereby pin 7 is locked in position in the bracket.

The arm E is provided with a socket, in which is placed an adjustable centering and bearing pin 10, somewhat smaller in diameter than the diameter of the socket in which it is placed in the arm E. This pin 10 is provided in its top with a conical bearing adapted to receive the pivot 8, and the pin is made adjustable vertically in the arm E by means of the screw-bolt 11, turning through the under wall of the socket against the lower end of the pin, and is adjustable laterally in the socket by the screw-bolts 12 12 turning through the side walls of the socket against the sides of the pin. By means of the adjustment of which this pin is capable a slight vertical movement and adjustment of the bracket 1 is provided for, whereby wear may be taken up or other necessary adjustment made, and by means of the lateral adjustment of the pin a slight tilting or leveling movement of the bracket 1 may be accomplished.

For steadying the bracket 1 an intermediate bearing in the arm D is provided, which bearing is formed by means of a pin 13, having a conical pivot end 14, which end enters a bearing therefor in the arm D. The pin 13 passes through an aperture therefor in a projection 15 on the bracket 1, which aperture is somewhat larger in diameter than the diameter of the pin, and the pin, being screw-threaded, is secured to the projection 15 by means of jam-nuts 16 16, one on either side of the projection 15, turning on the pin against the projection, whereby the pin is locked to the bracket 1, and may be adjusted either longitudinally or laterally with reference thereto. The shaft F at its lower extremity is pivoted in the arm D, and an oil-cup 17 is provided thereabout. The standard 2 is pivoted and supported in the bracket 1 in forwardly-projecting arms thereof at 18 18, and has a lateral swinging motion thereon. The arms 3, 4, and 5 are connected rigidly together by rods 19 19, and are supported on the standard 2 in bearings therefor 20 20, in which they have vertical movement. The arm 3 carries the pattern-

guide 21, and the arms 4 and 5 each carry a cutting-tool 22 in their outer extremities. The arms 3, 4, and 5 are supported adjustably on the standard 2 by a counterpoise 23 on one arm of the lever 24, which is fulcrumed on an upright 25, projecting upwardly from and integral with the standard 2, the other end of the lever 24 being connected to the arm 3 by a flexible cord 26. The lever 24 is steadied and held in the same vertical plane with the arm 3 by means of a post 27, projecting upwardly rigidly from the arm 3, which post is bifurcated in its upper part, between which bifurcated parts the arm moves vertically, and is held against any lateral movement except in conformity with the movement of the arm 3.

The cutting-tool-carrying arm 4 is located in the vertical plane with the pattern-guide-carrying arm 3, and the tool-carrying arm 5, which I have added to this machine, is in the same vertical plane with the arms 3 and 4, so that the pattern-guide and the cutting-tools 22 22 in the arms 4 and 5 are all in line at right angles to the line of the swinging motion of the arms 3, 4, and 5. To secure an exact adjustment of the cutting-tool in the arm 5 in line with the cutting-tool in arm 4 and the pattern-guide in arm 3, the arm 5 is made in two parts, secured together adjustably to provide for lateral adjustment in any direction. The inner part of the arm 5 at its outer extremity *a* overlaps the inner extremity *b* of the outer part of the arm 5, and the three bolts 28 28 severally pass through an aperture therefor in the part *a*, each of which apertures is of greater diameter than the diameter of the bolt itself, and the bolt being provided with screw-threads turning into the part *b*, the heads of the bolts being turned down firmly against the part *a*, whereby the two parts *a* and *b* may be secured rigidly to each other, but are adjustable laterally when the bolts are loosened to the extent of the greater diameter of the apertures in the part *a* than the diameter of the bolts 28 28 passing therethrough.

A short shaft 29, having bearings at its extremities in the brackets 1, carries thereon a band-wheel, over which the band 30 runs, which band also runs on a wheel on the shaft F. Two band-pulleys, also fixed on the shaft 29, carry the bands 31 31, which run on pulleys on the spindles, to which the cutting-tools 22 22 are affixed. These bands 31 31 are guided by the idle-pulleys 32 32.

An oil-cup 33 is provided about the pivotal point of the lower extremity of the shaft 29.

The arms 3, 4, and 5 are strengthened and stayed by stay-rods 34, 35, and 36, respectively, the rod 34 being secured at its extremities to the arm 3, and a tightening-pin 37, turning by a screw-thread through the arm 3 and bearing at its other end against the rod 34, being adapted for tightening the rod, the rods 35 and 36 being each secured at their outer ends to the shield or bracket in which the spindle of the cutting-tool has its bear-

ings, and at its inner end being secured adjustably by two jam-nuts to brackets 38 and 39, respectively, the bracket 38 being secured rigidly to the rods 19 19, and the bracket 39 being secured to the inner end of part *b* of arm 5.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a carving-machine, a swinging bracket 1, and a fixed bracket B, having three arms, to each of which arms bracket 1 is hinged, in combination with adjusting devices consisting of pins 7 and bearing 10 and pin 13, substantially as described, located in brackets 1 and B at two of the pivotal points, whereby bracket 1 is adjusted to bracket B, as and for the purpose set forth.

2. In a carving-machine, the means for centering and adjusting a swinging bracket on a fixed bracket, consisting of the combination, with a bearing-pin 10 in a socket in the fixed bracket, and adjusting-bolts 11 and 12 12, turning through the walls of the socket and against the bearing-pin, whereby it can be adjusted longitudinally and laterally, of a pivot-pin 7, adjustable by screw-thread in an arm of the swinging frame, the pin 7 being provided with a jam-nut 9 thereon, substantially as described.

3. In a carving-machine, two or more vertically-moving arms 3 4 5, secured rigidly together and supported on a laterally-swinging standard, on which standard the arms have their vertical movement, in combination with a lever 24, centrally fulcrumed on an upright 25, rigid on the standard, the lever being provided with a counterpoise 23 on one arm, and a bifurcated post 27, rigid on arm 3, in and by which the lever 24 is guided in its tilting movement against lateral movement with reference to the arm 3, that one of the lever-arms not having the counterpoise thereon being connected to the arm 3 by a flexible cord, substantially as described.

4. In a carving-machine having two tool-carrying swinging arms, an arm (being one of said tool-carrying arms) in two parts *a* and *b*, overlapping each other at their extremities, and bolts passing through apertures therefor in one of said parts and turning into the other part, the apertures being of greater diameter than the bolts passing therethrough, substantially as described.

5. In a carving-machine, a swinging guide-carrying arm 3 and two tool-carrying arms 4 and 5, rigidly secured to the guide-carrying arm 3, having common vertical and lateral movement, in combination with two bands 31 31, a pulley on the spindle of the cutting-tool in each of said arms 4 and 5, and pulleys on a common shaft 29, having its bearings in the supporting swinging bracket 1, on which pulleys the bands run, the guide and tool carrying arms being supported and pivoted on the bracket 1 in and by the standard 2, substantially as described.

6. In a carving-machine, a swinging tool-

5 carrying arm and a bracket on its outer free end, in which bracket are the bearings of the tool-carrying spindle, in combination with a stay-rod secured at one end rigidly to the spindle-carrying bracket, and at the other end at a distance from the spindle-carrying bracket adjustably secured to a harmoniously-moving part of the machine, substantially as described.

In testimony whereof I affix my signature in 10 presence of two witnesses.

STEPHEN F. MOORE.

Witnesses:

C. T. BENEDICT,
ANNA FAUST.