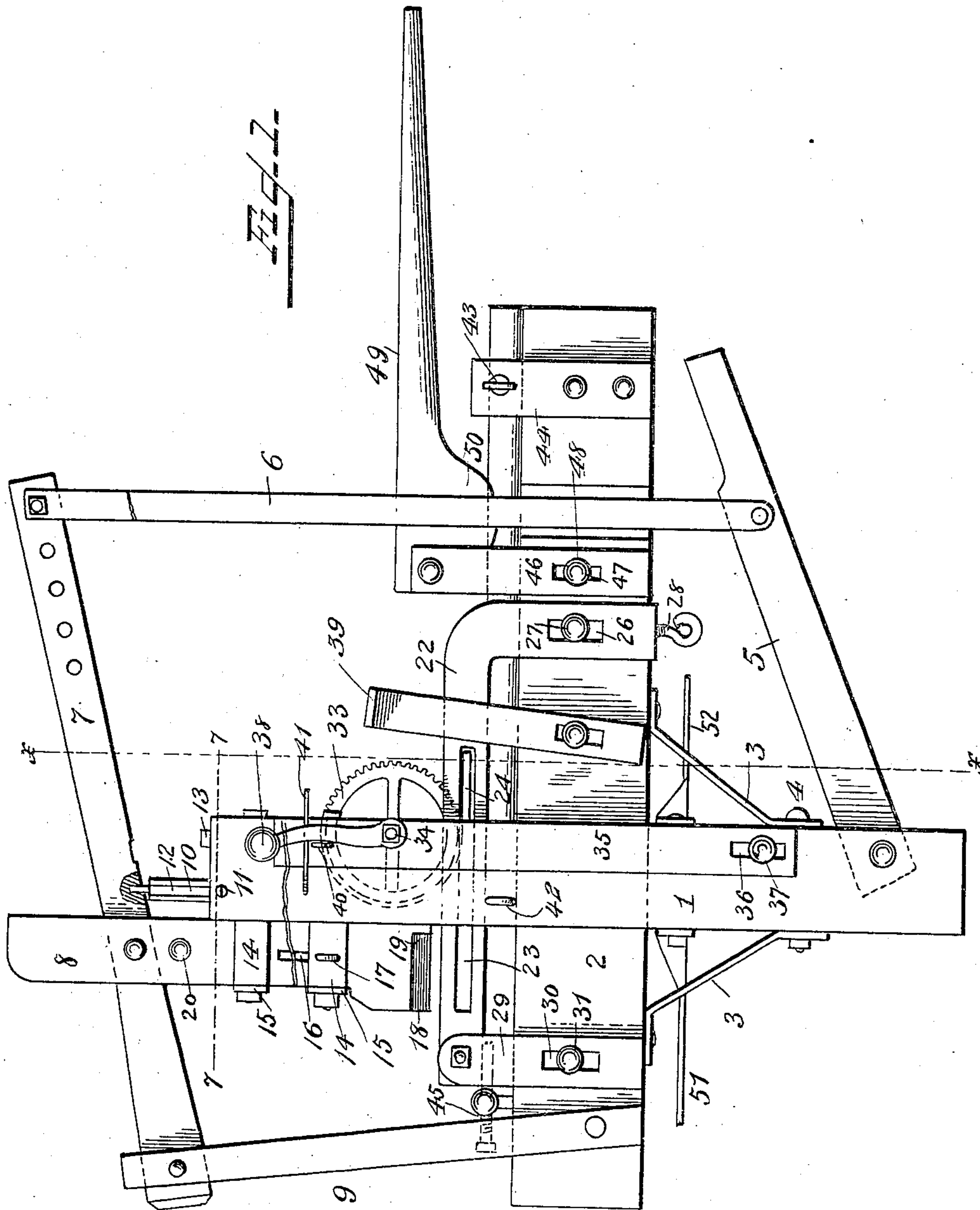


W. J. ADKINS.  
SPOKE MACHINE.  
APPLICATION FILED FEB. 6, 1908.

898,622.

Patented Sept. 15, 1908.

3 SHEETS—SHEET 1.



Witnesses  
F. L. Ourand.  
C. H. Griesbauer.

W. J. Adkins Inventor

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Attorneys

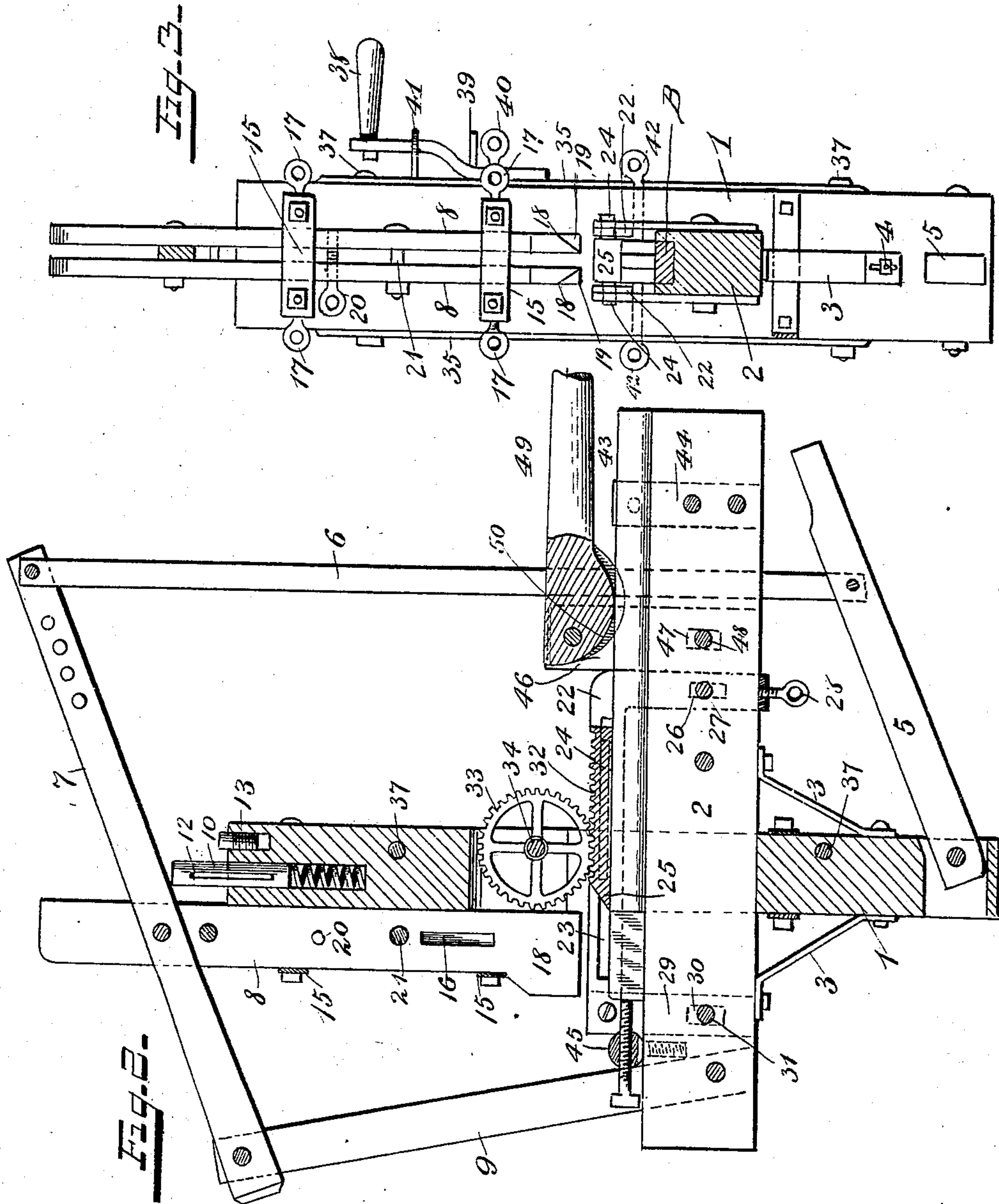
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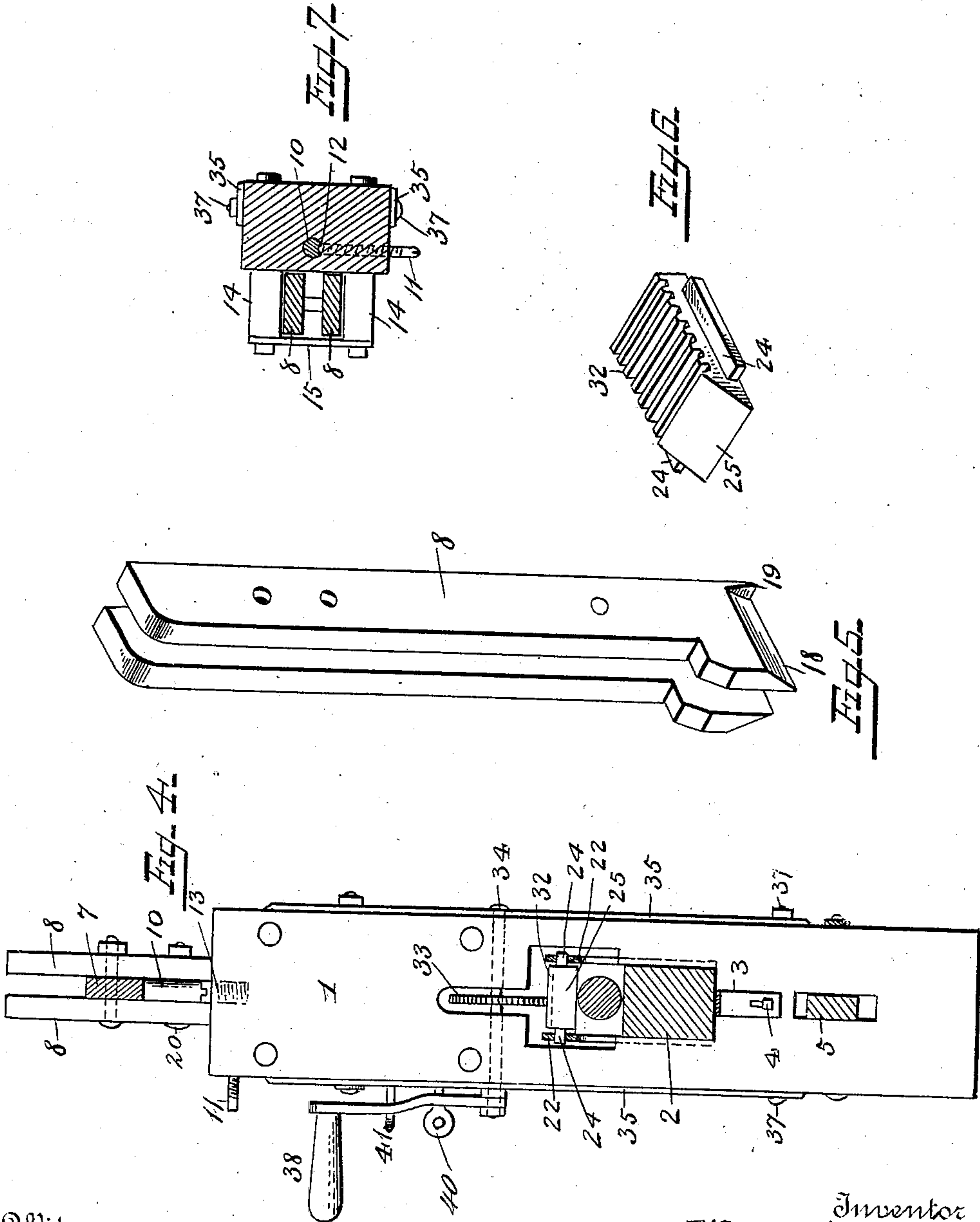
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Witnesses  
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# UNITED STATES PATENT OFFICE

WILLIAM J. ADKINS, OF LITTLE SANDY, KENTUCKY.

## SPOKE-MACHINE.

No. 898,622.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed February 6, 1908. Serial No. 414,608.

*To all whom it may concern:*

Be it known that I, WILLIAM J. ADKINS, a citizen of the United States, residing at Little Sandy, in the county of Elliott and State of Kentucky, have invented certain new and useful Improvements in Spoke-Machines; and I do 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.

My invention relates to spoke machines, and particularly to that type of machine which shapes and makes the tenon and shoulder.

The object of the device is to provide a bench machine which may be rapidly operated, and which will be cheap to manufacture.

A further object of the invention is the provision of means in a device of this character whereby the parts may be adjusted to accommodate different sized spokes and to cut different widths and lengths of tenons.

Further objects will appear when the specific description is read in connection with the accompanying drawings, which form a part of this specification and in which,

Figure 1 is a side elevation of the device, Fig. 2 is a vertical section thereof, Fig. 3 an end elevation, Fig. 4 a vertical transverse section on line  $x-x$  of Fig. 1, Fig. 5 is a detail perspective of the shoulder and tenon knives, Fig. 6 is a perspective of the side knife, and Fig. 7 is a horizontal sectional view of the standard taken on line 7-7 of Fig. 1.

Referring more especially to the drawings, 1 represents an upright standard through which is passed a horizontal member 2, at or about the center of the standard. Suitable braces 3 extend upwardly and diagonally from the standard and engage the under side of the horizontal member 2. These braces are slotted at their lower ends and graduated to receive the bolt 4, which passes through the standard, so as to secure the horizontal member in adjustable position.

Mounted centrally in the lower bifurcated end of the standard 1, is a foot lever 5, which is connected by links 6 to a power lever 7, adjustably pivoted between the standards 8 of the tenon knives. At the opposite end of this lever there is pivotally secured a pair of brace rods 9, which extend upwardly from the horizontal member 2, and serve as a fulcrum for the lever 7. The lever 7 is normally held in its upper position by a spring-

pressed pin 10, which is limited in its upward movement by a set screw 11, which engages the groove 12, and is limited in its downward movement by an adjustable stud 13, projecting from the upper end of the vertical upright.

Suitable guiding arms 14 project outwardly from the sides of the upright 1 and are connected by guide plates 15 so as to hold the standards 8 of the tenon knives in proper position throughout their movement. These standards are provided upon their side faces with limiting grooves 16, which are engaged by set screws 17, so as to limit the downward movement of the cutters carried by the standard. These cutters comprise a tenon knife 18 and a shoulder knife 19. Each standard has a similar set, which are separated and held apart by set screws 20. A clamping bolt 21 holds two members together against the set screws.

Mounted on either side of the standard and connected together by a connecting bar are L-shaped guide bars 22, slotted at 23 to receive the reduced projecting edge 24 of the edging knife 25. These guide members are slotted at 26 and engaged by a clamping bolt 27, which permits one end to be adjusted up and down. This end is provided with a tension screw 28, passing through the connecting bar and abutting the under face of the horizontal member 2. The opposite ends of the guide members are pivoted to adjustable standards 29, which are slotted at 30, to receive the connecting bolt 31 passing through the member 2. The edging knife 25 has a rack surface 32, which is engaged by a gear wheel 33, carried upon a shaft 34, which is journaled in adjustable side members 35 carried by the vertical standard 1. These side members are slotted at 36 to accommodate adjusting bolts 37 so that the wheel may be moved vertically to accommodate the adjustment of the guide members 22 and the knife 25. An operating handle 38 is secured to the shaft 34 and is limited in its downward movement by an adjustable stop 39, and in its opposite movement by a stop 40, both of which lie in the path of movement of the handle. It is also held in its normal position against the upper stop by a spring 41. A pair of screws 42 passed through from opposite sides of the standard adjacent the cutter 25 so as to clamp the spoke in proper central position at the point of operation, and a pair of screws 43 carried by arms 44, are arranged



adjacent the rear end of the horizontal member 2 to clamp the opposite end of the spoke. A limiting screw 45 is provided so that the length of the tenon may be regulated as is desired.

Extending up from the horizontal member 2 adjacent the vertical parts of the guide members 22 are a pair of arms 46, which are slotted at 47 to receive the adjusting bolt 48. At the upper end of these arms is pivoted a clamping lever 49, having a suitable cam 50, which is adapted to engage the spoke and clamp it against the horizontal member 2. The device is mounted upon a bench or other suitable support by means of the brackets 51 and 52, which extend out from opposite sides of the standard 1 and are apertured to receive fastening devices.

In operation a spoke is placed upon the supporting member 2 with the tenon end in engagement with the adjusting screw 45. The adjusting screws 42 and 43 are then set to clamp the spoke in proper position and the lever 49 forced down to prevent any vertical movement of the spoke. The foot lever is then depressed, which carries with it the knives 18 and 19 and thereby forms the shoulder and tenon. The foot lever is then released and the knives are carried back to their normal position by the spring-pressed post 10. The handle of the lever 38 is then grasped and pulled down to its limiting stop 29. This rotates the wheel 33 and moves the edging knife 25 over the spoke to determine the width of the tenon. This knife is returned to position manually.

As the device is preferably made of metal or similar material, I insert a block of hard wood in a mortise under the knives so as to prevent their edge being turned in operation.

Having described my invention, I claim:—

1. In a device of the class described, the combination with a spoke support, a standard secured thereto, a pair of combined

shoulder and tenon knives adapted to reciprocate on the standard, means for operating said knives, an edging knife traveling parallel with the support and transversely to the movement of the tenon knives, means for operating the edging knife independently of the tenon knives, work guiding means upon the support, and an adjustable cam lever carried by the support for clamping the work thereupon.

2. In a device of the class described, the combination with a spoke support, of a standard secured thereto, a pair of tenon knives adapted to reciprocate on the standard, a foot lever for operating said tenon knives, an edging knife traveling parallel to the support and transversely to the movement of the tenon knives, a rack upon the upper edge of said edging knife, a hand controlled gear for engaging said rack to operate the edge of the knife independently of the tenon knives, means to adjust the edging knife, means to adjust the operating gear therefor, guiding means for the work carried by the support, clamping means for the work, and an adjustable cam lever carried upon the support adapted to hold the work in position to be acted upon by the knives.

3. In a spoke machine, a horizontal spoke support, knife supporting guides adjustably carried thereby, an edging knife slidably mounted in said supports, means for operating said knife, adjustable means for limiting the operating means in both directions, and a resilient retaining device for holding the operating means in normally inoperative position against one of said stops.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM J. ADKINS.

Witnesses:

JAMES W. SPARKS,  
JOHN C. WELLS.