

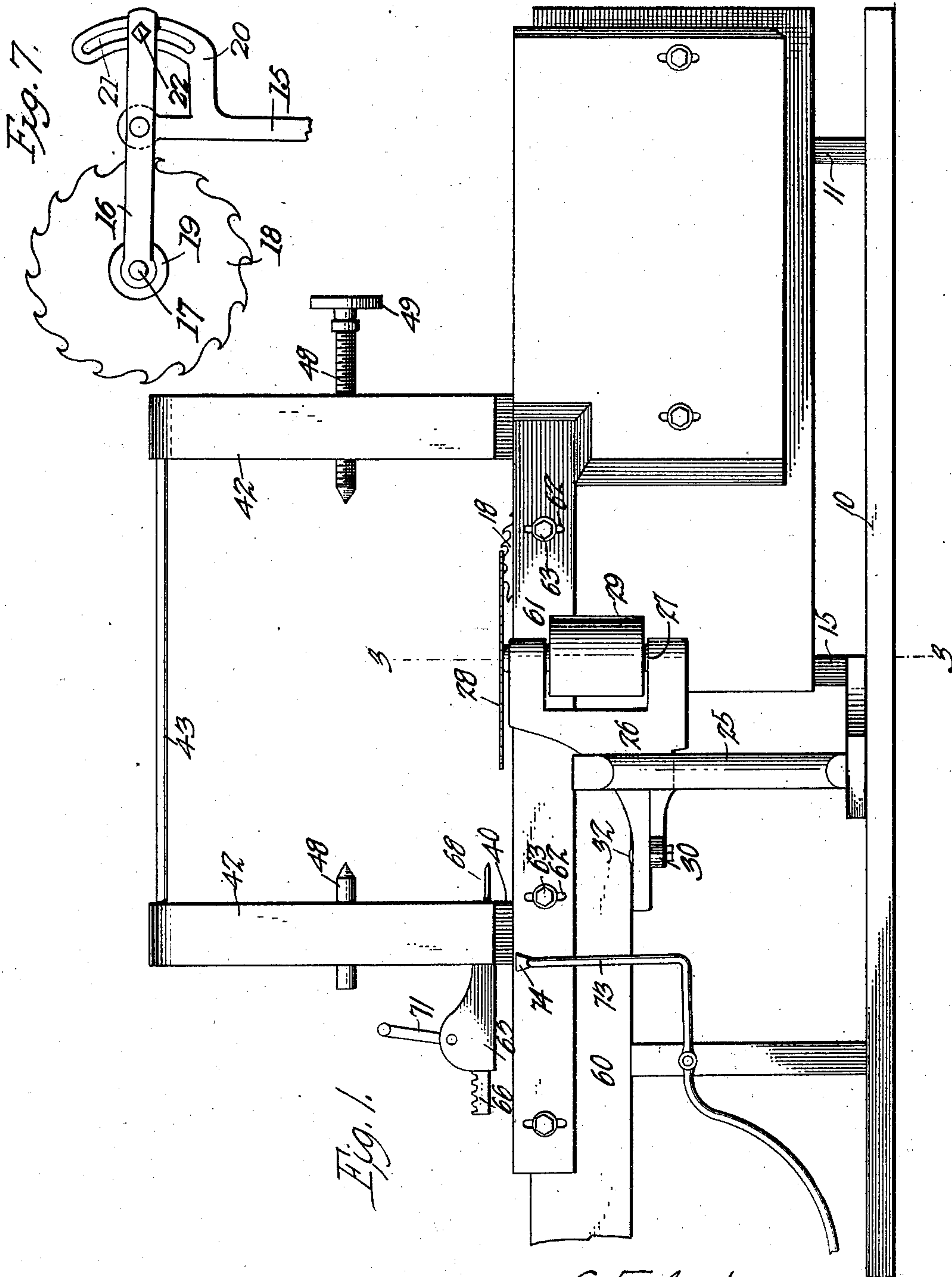
No. 752,640.

PATENTED FEB. 23, 1904.

G. F. AUTRY.
SPOKE CUTTING MACHINE.
APPLICATION FILED DEC. 1, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
E. H. Stewart
John C. Parker

G. F. Autry, Inventor:
by *C. A. Snow & Co.*
Attorneys

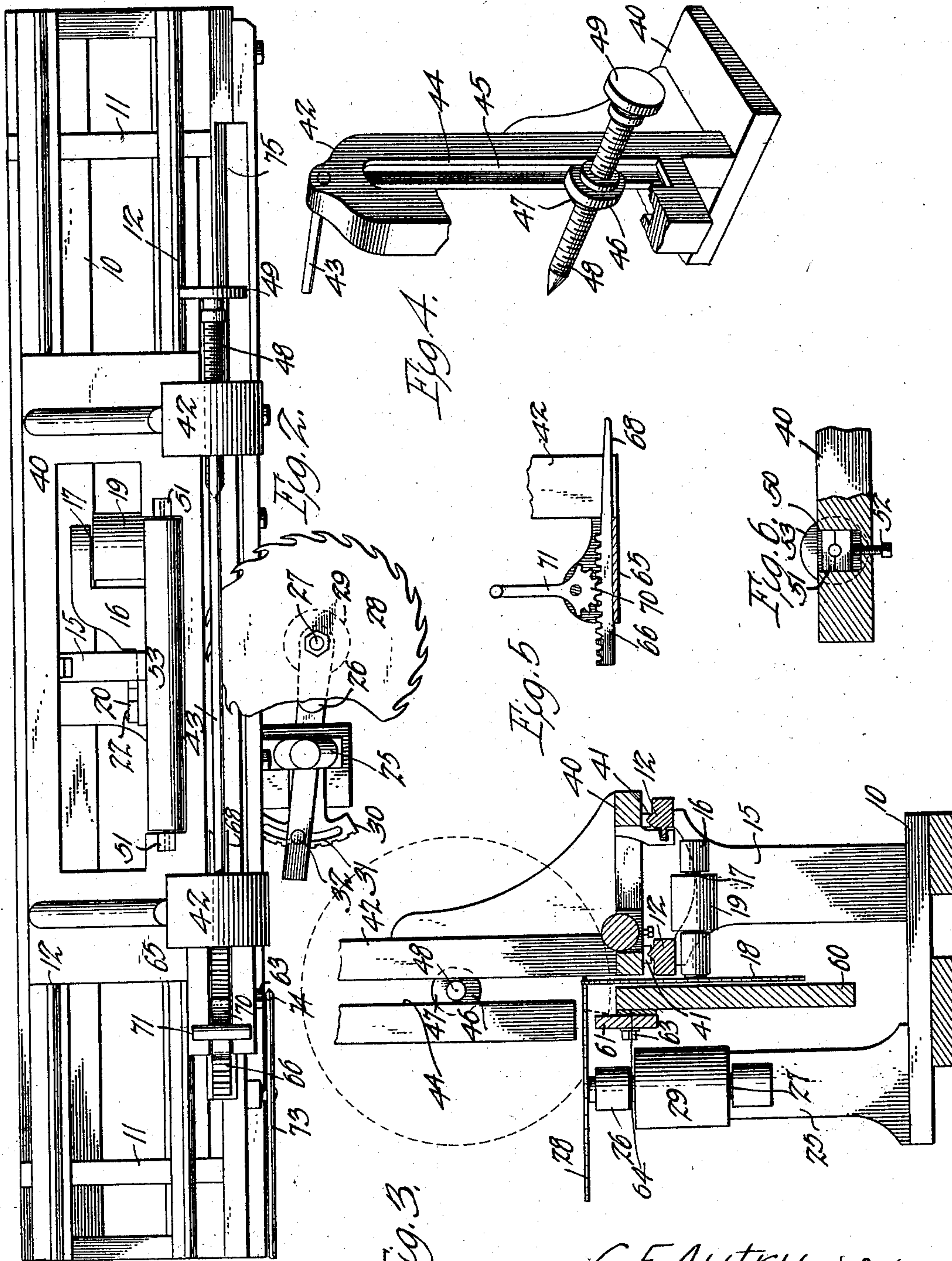
No. 752,640.

PATENTED FEB. 23, 1904.

G. F. AUTRY.
SPOKE CUTTING MACHINE.
APPLICATION FILED DEC. 1, 1902.

NO MODEL.

2-SHEETS-SHEET 2.



Witnesses
E. J. Stewart
John E. Carter

G. F. Autry, Inventor.
by *Ca. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE F. AUTRY, OF GREENFIELD, TENNESSEE, ASSIGNOR OF ONE-HALF
TO JAS. T. GARDNER, OF GREENFIELD, TENNESSEE.

SPOKE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 752,640, dated February 23, 1904.

Application filed December 1, 1902. Serial No. 133,410. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. AUTRY, a citizen of the United States, residing at Greenfield, in the county of Weakley and State of Tennessee, have invented a new and useful Spoke-Cutting Machine, of which the following is a specification.

The invention relates to certain improvements in machines of that class employed for cutting substantially rectangular bolts from timber for the formation of spokes or rims for vehicle-wheels.

The principal object of the invention is to provide an improved mechanism whereby the cutting operation may be carried on without waste and in which the cut of timber may be easily adjusted for successive cuts.

A further object of the invention is to provide a mechanism in which the various parts may be separately adjusted for the reception of a cut of timber of any desired size and for the formation of bolts of any desired cross-sectional area.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a spoke-cutting machine constructed in accordance with the invention. Fig. 2 is a plan view of the same. Fig. 3 is a transverse sectional elevation of the device on the line 3 3 of Fig. 1. Fig. 4 is a sectional perspective view of a portion of the timber-carriage. Fig. 5 is an enlarged sectional detail of the manually-actuated locking device for holding the timber in adjusted position during the sawing operation. Fig. 6 is a detail sectional view illustrating the means for adjusting the log-supporting roller. Fig. 7 is a detail of a portion of the bracket which supports the vertically-disposed saw.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The bed-plate 10 of the machine is of any desired construction and provided at suitable points with standards 11, which support a pair of horizontally-disposed parallel tracks 12 for the support of a suitable carriage on which the cut of timber is held and moved with the carriage to the saws.

To the base of the machine is secured a standard 15, connected at its upper end with the two tracks. The standard is provided with a central recess, through which passes the rear end of a pivoted bracket 16, the front end of said bracket being bifurcated and forming bearings for an arbor 17, on which is mounted a circular saw 18 and a pulley 19, driven by a belt from any suitable source of power. The rear end of the bracket is arranged adjacent to a segment 20, having a segmental slot 21 for the reception of a locking-bolt 22, carried by the bracket, the construction being such as to permit of a considerable range of adjustment of the bracket to alter the depth of cut of the saw. The base is also provided with a standard 25, arranged at a point outside the parallel tracks and provided with a recess for the reception of the rear end of a horizontally-adjustable pivoted bracket 26, carrying an arbor 27, in which is mounted a circular saw and a driving-pulley 29. The rear end of the bracket is disposed adjacent to a segment 30, having a segmental slot 31 for the reception of a locking-bolt 32, passing through the rear end of the bracket and serving to lock the bracket in any position to which it may be adjusted.

Mounted on the tracks 12 is a carriage 40, having grooved blocks 41 on its lower face for engaging the trackways, and at the opposite ends of said carriage are vertically-disposed slotted heads 42, united by a bracing-bar 43. Each of the heads 42 is provided with a vertical slot 44, and the opposite walls of the slots are grooved, as at 45, for the reception of an annular flange 46, forming part of a circular nut 47. The nuts serve to receive the threaded portions of center pins 48, having

milled knobs or handles 49 to facilitate adjustment, or, if necessary, only one of the pins may be adjustable and the other formed integral with the nut member. The cut of timber is properly centered and one or both of the threaded pins forced into engagement with the ends thereof, the pins and timber then maintaining the positions to which they are adjusted until the entire operation is complete, the object of the flanged nuts being to prevent any movement of the timber from its central position by reason of the wear which would occur if the timber turned and the pins remained stationary. During the circumferential adjustments of the timber the center pins and nuts turn together, the grooves 45 preventing any longitudinal displacement, while the walls of the grooves 44 prevent lateral movement in either direction.

In the lower portion of the carriage 40 are vertical slots 50 for the reception of bearing-blocks 51, which may be adjusted vertically by hand-screws 52. These blocks serve as bearings for the reception of the reduced end portion of a roller 53, the center of the roller being in a vertical plane to one side of the plane in which the center pins 48 are placed and serving to support the log or cut of timber during the entire operation. By lowering the roller the depth of cut of the saw 18 may be increased, while, as the roller is mounted to one side of the axial line of the timber, the latter will tend to move by gravity to adjust itself at the completion of each cutting operation. The roller is further advantageous in that its use avoids the necessity of constant adjustment of the vertical height of the center pins, it being possible to cut the small bolts continuously in the form of a spiral line without any manual adjustment whatever, the timber always resting on the roller and maintaining its proper position with respect to the saws.

At one side of the machine is secured a board 60, and to the outer face of this is secured a gage-strip 61, the latter being provided with vertical slots 62 for the passage of securing-bolts 63, permitting the vertical adjustment of the strip, while the inner face of the strip may be adjusted to a greater or less distance from the face of the vertical saw by the insertion of spacing blocks or strips 64 of any desired thickness. The gage-strip is adjusted to regulate the size of the bolt, and at the end of each cutting operation the timber is turned until the freshly-cut edge rests against this gage-strip.

Secured to or formed integral with the carriage is a bracket 65, slotted to form a guide for a rack 66, terminating at its inner end in a pointed finger 68, which may be forced into engagement with the end of the timber and hold the latter from circumferential movement during the sawing operation, the finger passing through the slot in one of the car-

riage-heads 42. As a means of operating the locking-finger I preferably employ a toothed segment 70, pivoted to the bracket and provided with a suitable handle 71.

For convenience in turning the timber at the completion of each cutting operation I preferably employ a pivoted pedal-lever 73, having a pointed or slightly-sharpened end 74 for engaging the periphery of the log.

In operation, the several parts being adjusted for the formation of bolts of a desired size and the first cut having been made in the usual manner, the carriage is forced past the saws, the bolt severed from the timber falling through a slot 75 near the end of the board 60. The carriage is then run back toward the left of Fig. 1 to the starting-point. The manually-operated locking-finger 68 is now released, and the timber tends to turn by gravity on its roller-support 53. If the turning is not readily accomplished, the pedal-lever 73 may be brought into play and the timber turned until the freshly-cut edge rests against the gage-strip 61, and the apparatus is ready for another operation of the saws.

Having thus described the invention, what is claimed is—

1. The combination in a spoke-cutting machine, of a pair of saws disposed at an angle to each other, a saw-carriage, center pins on said carriage for engaging the ends of the timber from which the spokes are to be cut, and an independent manually-operated tongue or finger arranged on the carriage and adapted to engage with the end of the timber at a point substantially in alinement with the saws to hold the timber from rotative movement and resist endwise thrust due to the action of the saws.

2. The combination in a spoke-cutting machine, of a pair of saws disposed at an angle to each other, a longitudinally-movable carriage, center pins arranged on the carriage for engaging the ends of the timber, a timber-supporting roller disposed on the carriage and arranged in a vertical plane to one side of the vertical plane of said center pins, and an independent timber-engaging means disposed on the carriage below said pins at a point substantially in alinement with the saws and serving to lock the timber from rotative movement.

3. The combination in a spoke-cutting machine, of a pair of cutting-saws disposed at an angle to each other, a longitudinally-movable carriage, vertically-movable center pins guided by the carriage, a timber-engaging tooth disposed at one end of the carriage to engage the end of the piece of material being severed by the saws and resist endwise thrust due to the sawing operation, and means for forcing said tooth into positive engagement with said material.

4. The combination in a spoke-cutting machine, of a pair of saws disposed at an angle

to each other, a carriage having vertically-slotted heads, the walls of each slot being provided with vertical grooves, a center pin having an annular flange fitting in one pair of the
5 grooves to permit free revoluble movement of the pin and free vertical movement thereof, a second flange or collar having an internal thread, and an adjustable threaded pin fitting within said threaded flange or collar, the flange
10 or collar moving freely in the grooves of said opposite head, substantially as specified.

5. The combination in a spoke-cutting machine, of a pair of cutting-saws arranged at an angle to each other, a timber-supporting
15 carriage, timber-engaging center pins mounted on the carriage, and a pedal-lever pivoted to the frame of the machine independent of the carriage and having a tooth for engaging and turning the timber.

20 6. The combination in a spoke-cutting ma-

chine, of the frame, a timber-supporting carriage mounted thereon, slotted standards carried by the frame, brackets pivoted to said standards and each having one end bifurcated and arranged to form bearings for a saw-arbor, 25 saw-arbors carried thereby and disposed parallel with the bracket-pivots, a saw and a driving-pulley mounted on each arbor, a fixed bracket carried by each standard and provided with a segmental slot, and a locking-bolt ex- 30 tending through the slot and through the adjacent end of the pivot-saw-carrying bracket, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 35 the presence of two witnesses.

GEO. F. AUTRY.

Witnesses:

J. B. SWAINES,

GEO. W. NOWLIN.