

No. 742,715.

PATENTED OCT. 27, 1903.

J. MUNROE.  
MACHINE FOR TRIMMING RAILROAD TIES.

APPLICATION FILED AUG. 12, 1902.

NO MODEL.

4 SHEETS—SHEET 1.

Fig. 1.

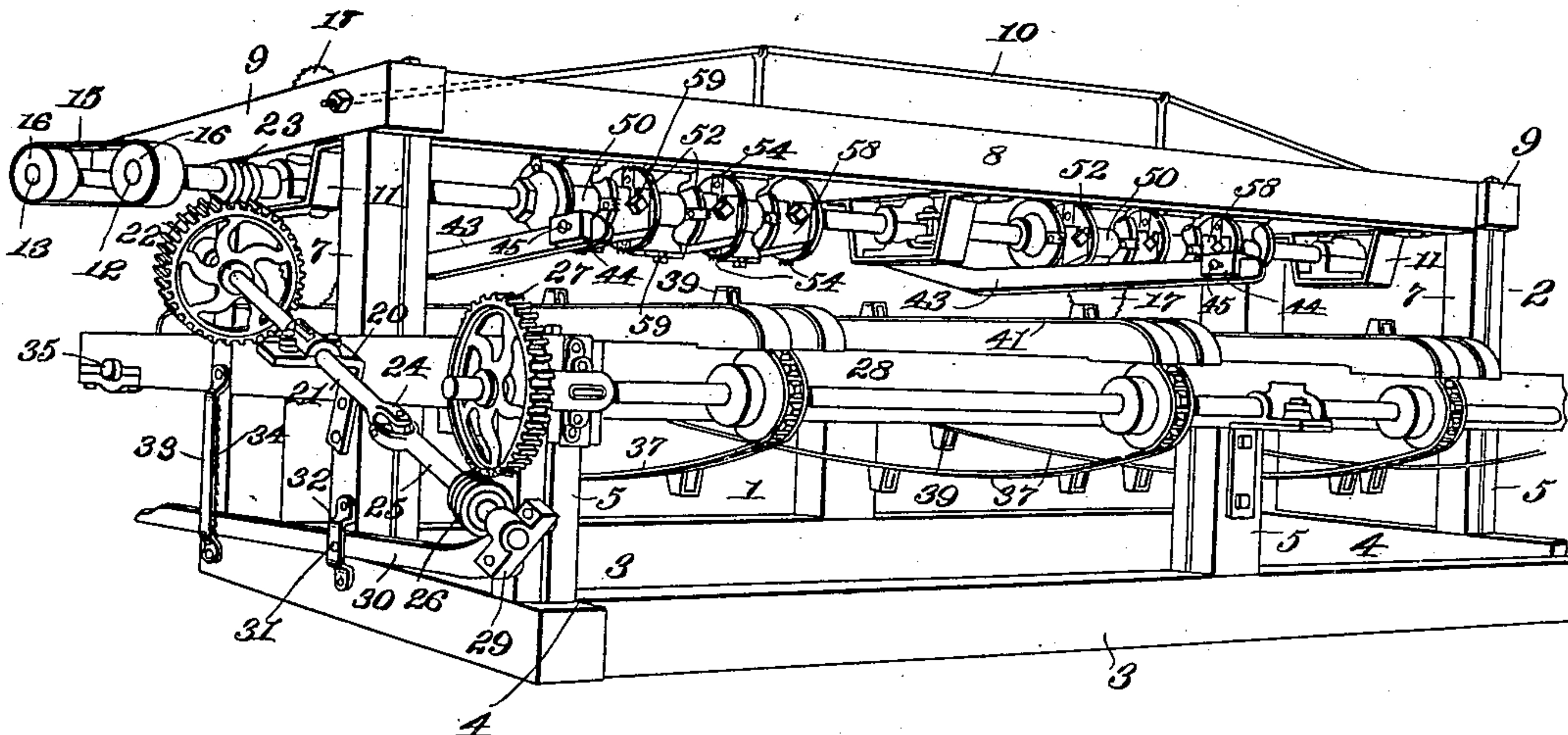
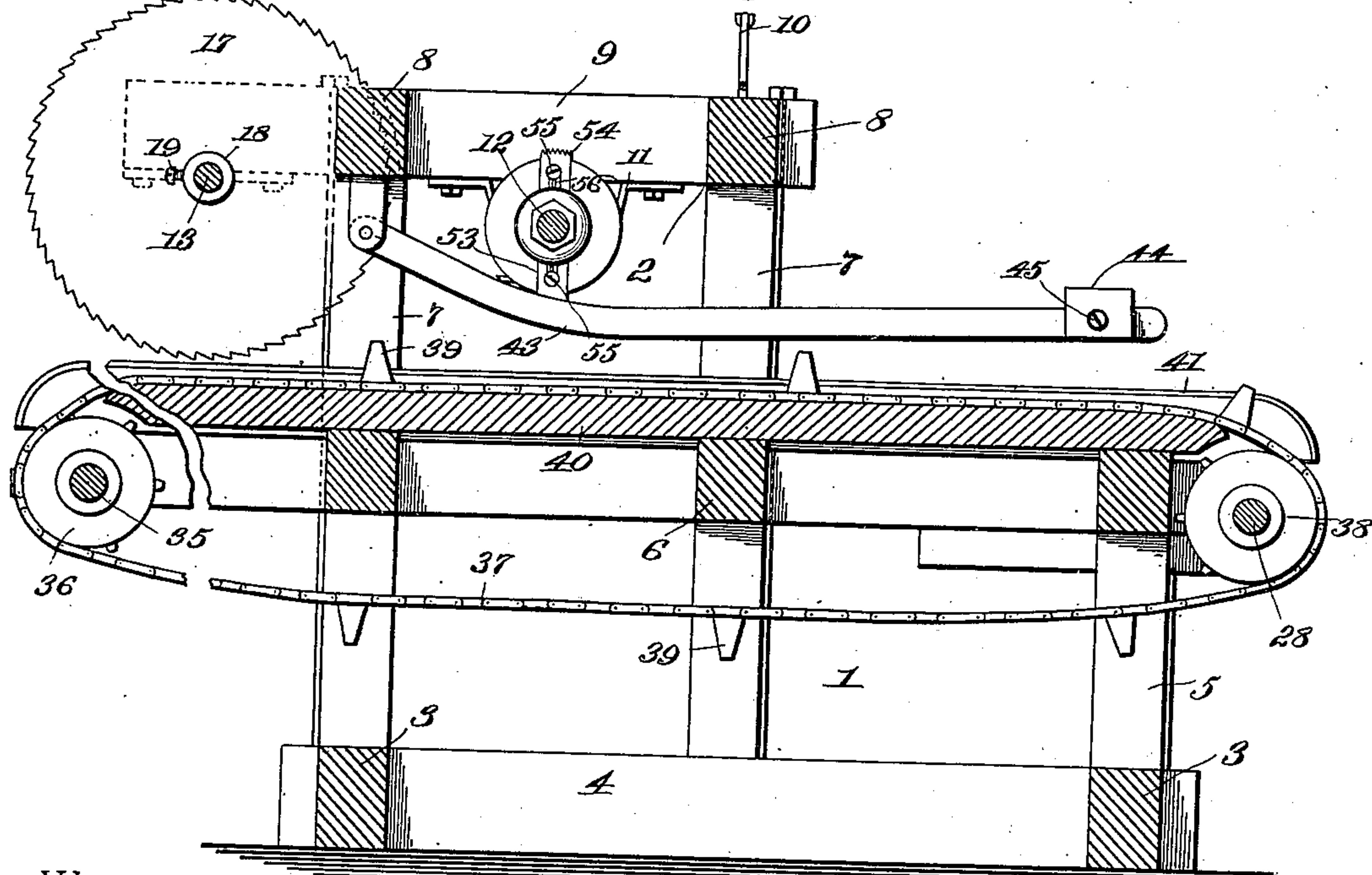


Fig. 3.



Witnesses

*E. F. Steward*  
*Wm. Bagger*

by

*John Munroe*, Inventor.  
*C. A. Snow & Co.*  
Attorneys

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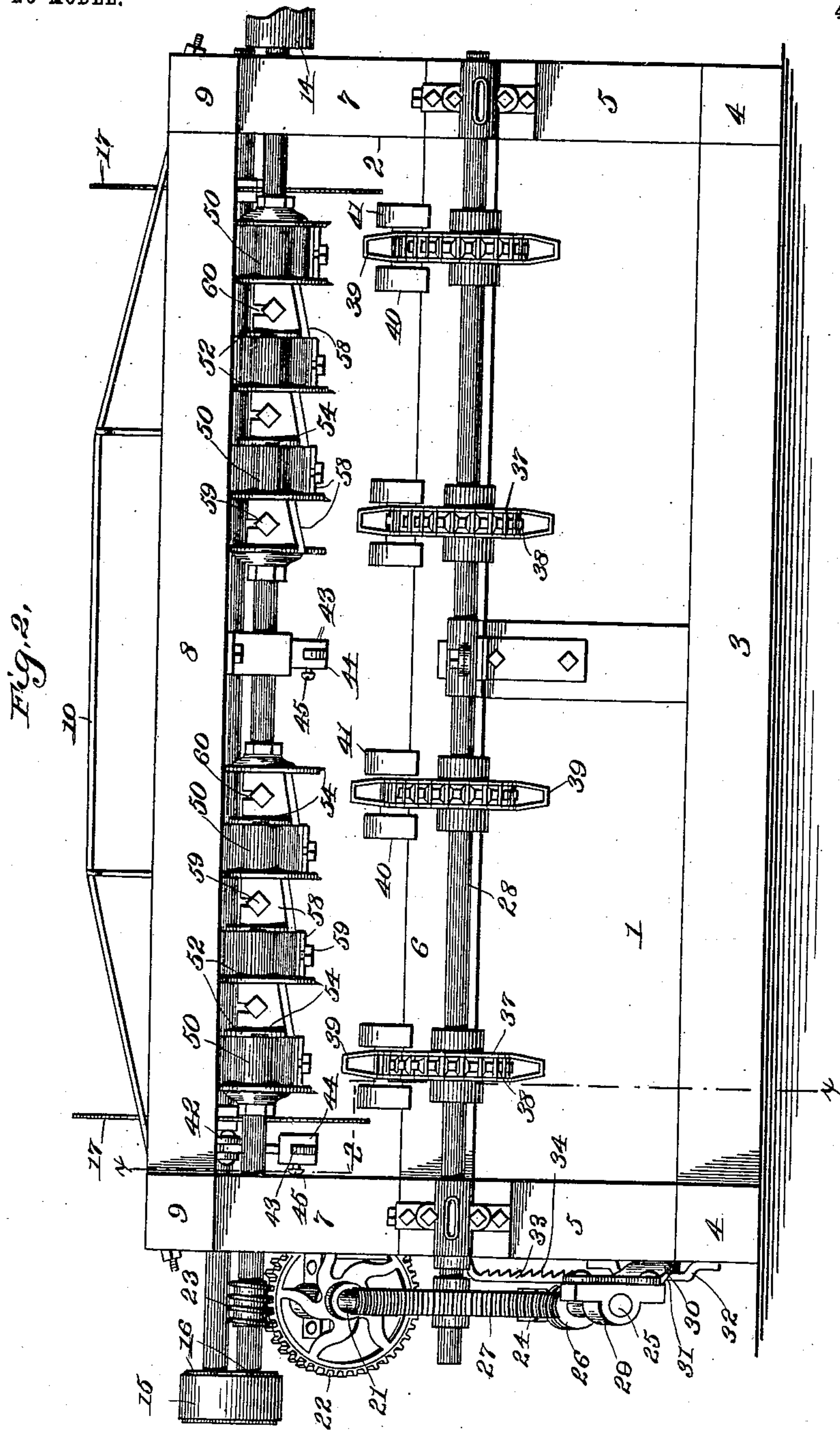
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4 SHEETS—SHEET 2.



Witnesses  
E. F. Stewart  
Wm. Bagger

John Munroe, Inventor  
by C. A. Snow & Co.  
Attorneys



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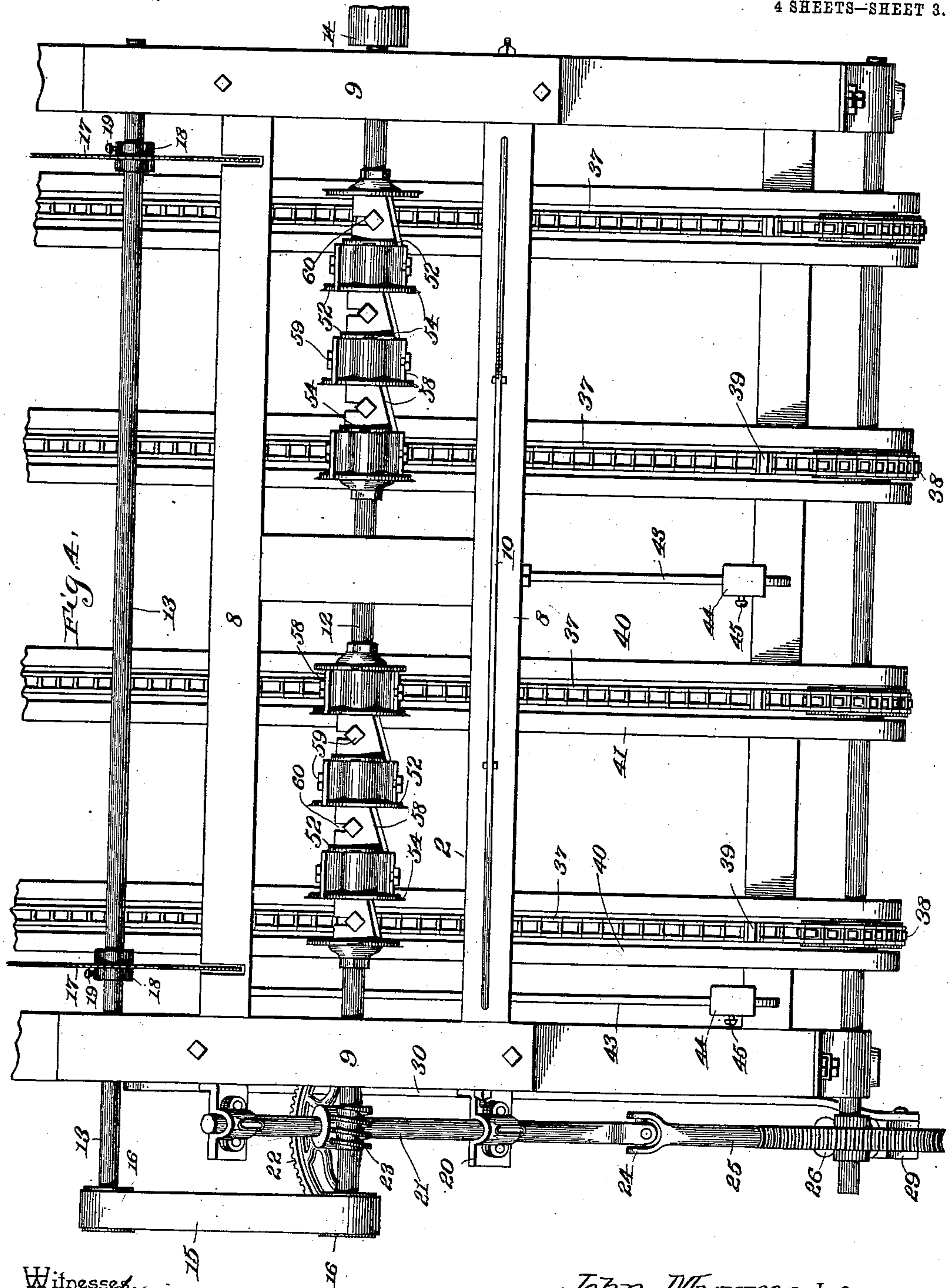
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4 SHEETS—SHEET 3.



Witnessed  
*E. C. Lewis*  
*Wm. Bagger*

John Munroe, Inventor.  
by *C. A. Snow & Co.*  
Attorneys

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4 SHEETS—SHEET 4.

Fig. 5.

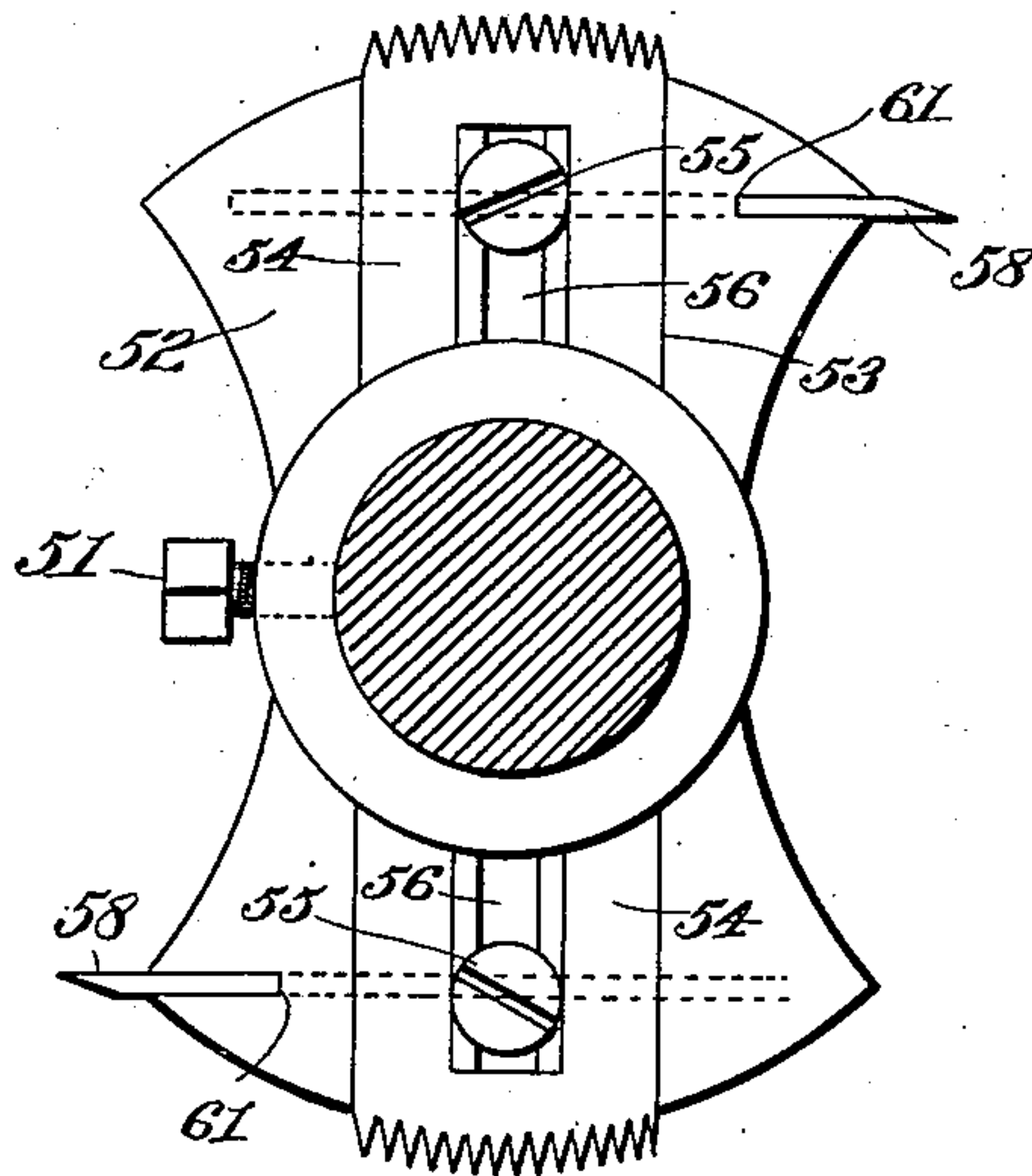


Fig. 6.

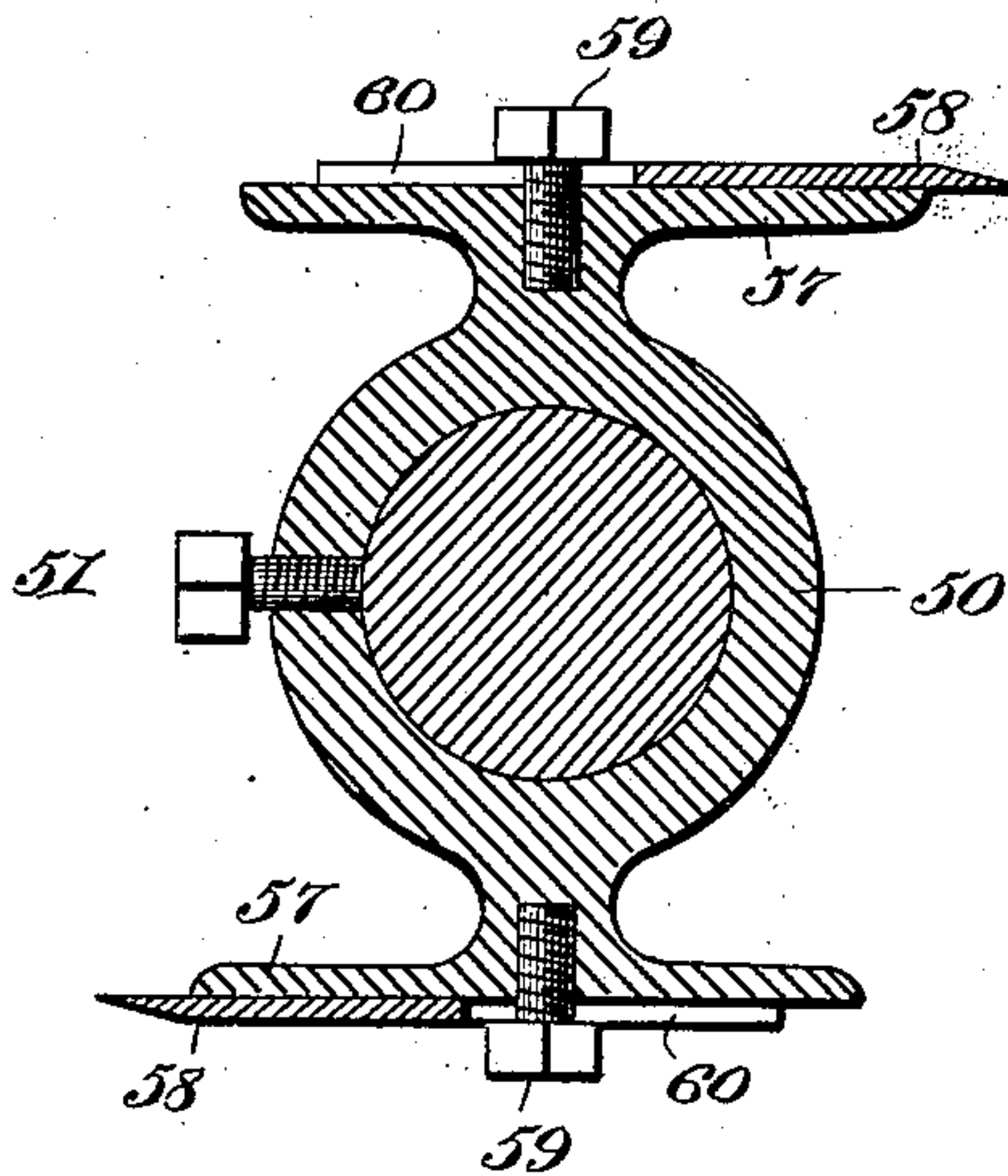


Fig. 7.

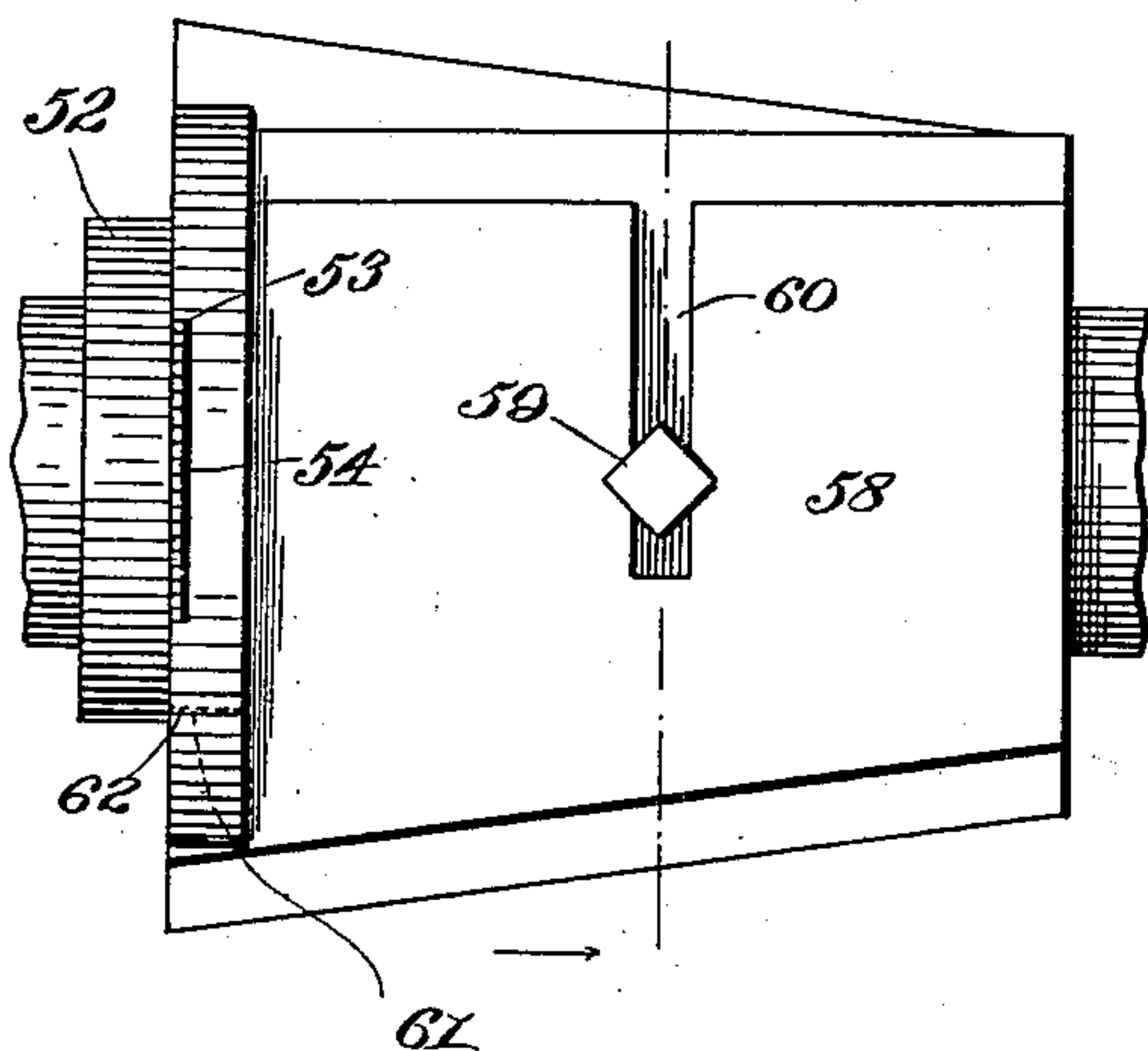
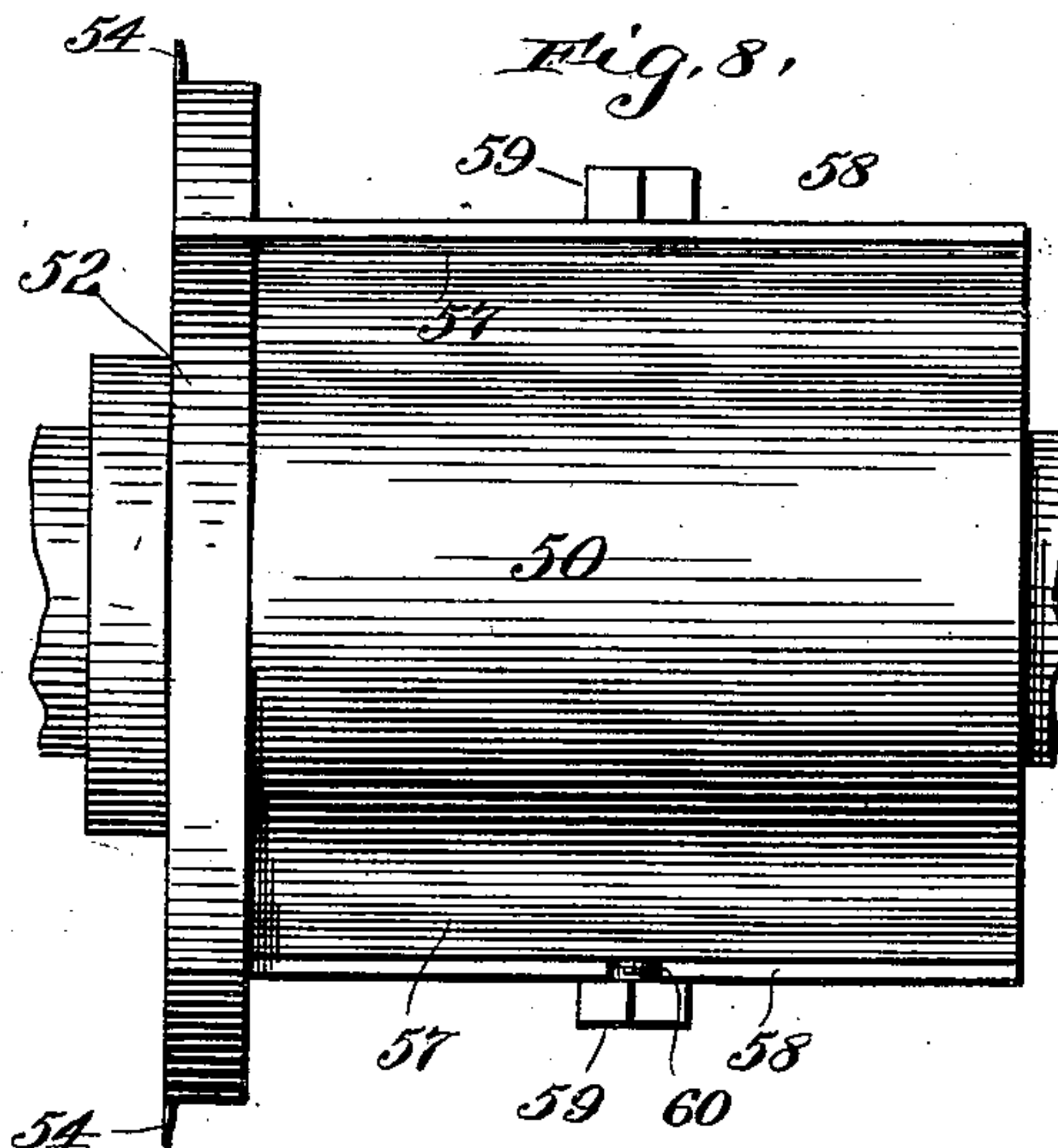


Fig. 8.



Witnesses  
*E. H. Stewart*  
*Wm. Bagger*

John Munroe, Inventor.  
by *C. A. Snow & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

JOHN MUNROE, OF EAST JORDAN, MICHIGAN.

## MACHINE FOR TRIMMING RAILROAD-TIES.

SPECIFICATION forming part of Letters Patent No. 742,715, dated October 27, 1903.

Application filed August 12, 1902. Serial No. 119,412. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN MUNROE, a citizen of the United States, residing at East Jordan, in the county of Charlevoix and State of Michigan, have invented a new and useful Machine for Trimming and Framing Railroad-Ties and other Timbers, of which the following is a specification.

This invention relates to machines for trimming and framing railroad-ties and other timbers; and it has for its object to provide a device of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency.

With these and other objects in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view showing a machine constructed in accordance with the principles of my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical sectional view taken on the plane indicated by the line  $x-x$  in Fig. 2. Fig. 4 is a top plan view. Fig. 5 is a transverse sectional view of the main shaft, showing in elevation one of the cutting means mounted upon said shaft in position for operation. Fig. 6 is a transverse sectional view taken through the main shaft and one of the cutters. Fig. 7 is a detail plan view of one of the cutters. Fig. 8 is a plan view showing one of the cutters in a different position.

Corresponding parts in the several figures are indicated by similar numerals of reference.

The frame of the improved machine comprises a lower or bed portion 1 and an upper supporting-frame 2, the former comprising mainly the longitudinal base-beams 3, the transverse beams 4, the uprights 5, and the upper bed-beams 6. The upper frame 2 includes the uprights 7, which may be upward extensions of the uprights 5, and the longitudinal and transverse frame-beams 8 9, the former of which, especially the front one, may be trussed, as shown at 10, in order to secure the required rigidity to the frame. Boxes 11, depending from the upper end beams of the frame, form bearings for a pair of shafts, (designated, respectively, 12 and 13.)

12 is the main drive-shaft, which receives motion from the source of power, the motion being applied to a pulley or band wheel 14 at one end of said shaft or in any other suitable manner. Motion is transmitted from the drive-shaft 12 to the shaft 13 by means of a belt, chain, or other equivalent means (indicated at 15) serving to connect pulleys or other engaging means 16 upon the ends of said shafts. The main drive-shaft 12 carries the cutting and framing means, which will be hereinafter more fully described, and the counter-shaft 13 carries a pair of circular saws 17, adjustable upon the shaft by means of collars 18, having set-screws 19, or in any other suitable manner in order that they may be adjusted toward or from each other, so as to trim the timbers or ties to any desired length.

One end of the frame is provided with suitable boxings or bearings 20 for an inclined shaft 21, carrying near its upper end a worm-gear 22, which meshes with a worm 23 upon the main shaft 12. The lower end of the shaft 21 is connected by a knuckle-joint 24 with another suitably-supported shaft-section 25, forming an extension thereof and having a worm 26, meshing with a gear 27 upon the end of the shaft 28. The support for the end of the shaft-section 25 which carries the worm 26 is formed by a box or bearing 29, secured to the end of a lever 30, fulcrumed at 31 in a bracket 32 and having its operating end extended through a bracket 33, provided with teeth or ratchets 34, engaging the said lever 30, thereby enabling it to hold the worm 26 in mesh with the gear-wheel 27 with any desired degree of pressure or to be entirely withdrawn from such engagement. An additional feed-shaft 35, suitably mounted in the rear part of the frame parallel to the feed-shaft 28, is provided with a series of sprocket-wheels 36, connected by means of chains 37 with sprocket-wheels 38 upon the front feed-shaft 28. The said chains are provided at intervals with lugs 39, serving to engage the ties or timbers placed upon the bed of the machine at the rear end of the same and to feed them in a forward direction. The bed proper of the machine is formed by a plurality of bars 40, having curved front and rear ends and preferably shod with iron, as indi-



cated at 41. These bed-bars or supporting-bars are mounted upon the bed-beams 6 adjacent to the feed-chains 37 and are extended to the sprocket-wheels 35 and 38 in order that the ties or timbers operated upon may be fed by said chains across the entire length of the head.

Brackets 42, depending from the rear upper frame-beam 8, serve as fulcrums for a plurality of levers 43, which are bent downwardly under the main shaft 12 and extended in a forward direction over the feed-table or bed of the machine. These levers may be weighted, as shown, by means of adjustable weights 44, secured by set-screws 45. These weighted levers are for the purpose of holding the ties or timbers that are being operated upon securely in contact with the bed of the machine while they are being fed forwardly during the progress of such operation.

The cutting means of my improved machine are constituted by a plurality of collars mounted upon the main or drive shaft 12 in the desired positions upon said shaft, it being understood that by using one or more of these collars one or more notches or gains may be cut in the tie or timber passing through the machine, while by placing a plurality of said collars adjacent to each other notches or gains of any desired length may be cut and in any desired location upon the tie or timber. These collars, as will be seen by reference to the drawings, where they are designated 50, are provided with set-screws 51 for securing them upon the shaft. These collars are also provided with end flanges 52, having recesses 53, in which toothed bits 54, the teeth of which resemble saw-teeth, are secured adjustably by means of set-screws 55 engaging slots 56 in said bits, the faces of which, as well as the heads of the set-screws, are flush with the outer faces of the flanges 52. The collars 50 are provided with oppositely-disposed faces 57, upon which the bits or cutters 58 are adjustably mounted by means of set-screws 59 or stud-bolts engaging slots 60 in the said bits. The latter are provided at their edges with recesses 61, forming shoulders 62, which abut against the edges of the flanges 52. It will be seen that by this construction the bits are not merely extended to cut in front of the flanges 52, but that the bits 58 receive a very decided and important support by means of the said flanges, which thus serve to prevent the accidental displacement of the said bits.

The operation of this device will be readily

understood from the foregoing description taken in connection with the drawings hereto annexed. The ties or timbers which are to be operated upon being placed upon the feed-table or the bed of the machine, at the rear side of the latter, are engaged by the lugs 39 of the chains 37 and are thus fed forward under the saws, which trim the ends of said ties or timbers, and then under the main shaft, the cutters upon which form the desired recesses or gains in the faces of the timbers. The latter are held down to the feed by means of the weighted levers and are dumped or discharged at the front end of the machine.

The machine may at any time be instantaneously thrown out of gear by manipulating the lever 30 to disengage the worm 26 from the gear-wheel 27 of the main feed-shaft 12.

The structural details of the machine are capable of being modified in numerous ways, and I desire it therefore to be understood that I do not limit myself to the precise construction and arrangement of parts herein described, but reserve the right to any changes and alterations which may be resorted to without detracting from the utility of my invention or departing from the spirit and scope thereof.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

In a machine of the class described, the combination of a driven main shaft, a plurality of cutters adjustable upon said main shaft, a counter-shaft, trimming-saws upon the latter, means for transmitting motion from the main shaft to the counter-shaft, endless chains disposed below the main and counter shafts and having protruding fingers for feeding the material to be operated upon under said main and counter shafts, sprocket-wheels supporting said chains, shafts supporting said sprockets, and means for transmitting motion to one of said shafts from the main shaft, said means including a worm and a worm-gear and means whereby said worm and worm-gear may be thrown into and out of engagement with each other.

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

JOHN MUNROE.

Witnesses:

R. S. WEITZELL,  
A. O. ROBERTSON.