

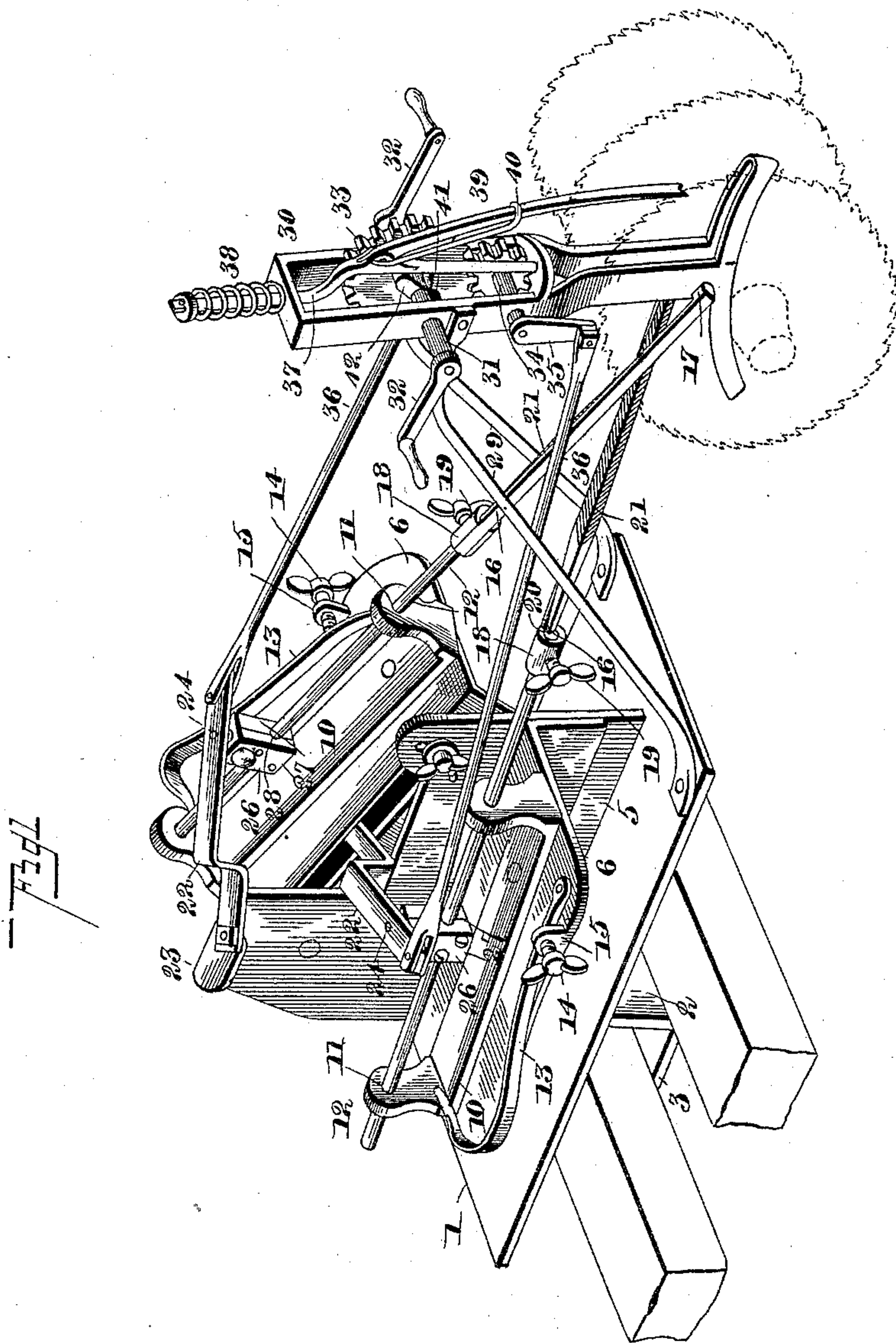
(No Model.)

3 Sheets—Sheet 1.

J. Q. SMITH.
MACHINE FOR SHARPENING GIN SAWS.

No. 431,197.

Patented July 1, 1890.



Witnesses

John Amie
Wm. Bagger

Inventor

John A. Smith

By his Attorneys

C. A. Snow & Co.

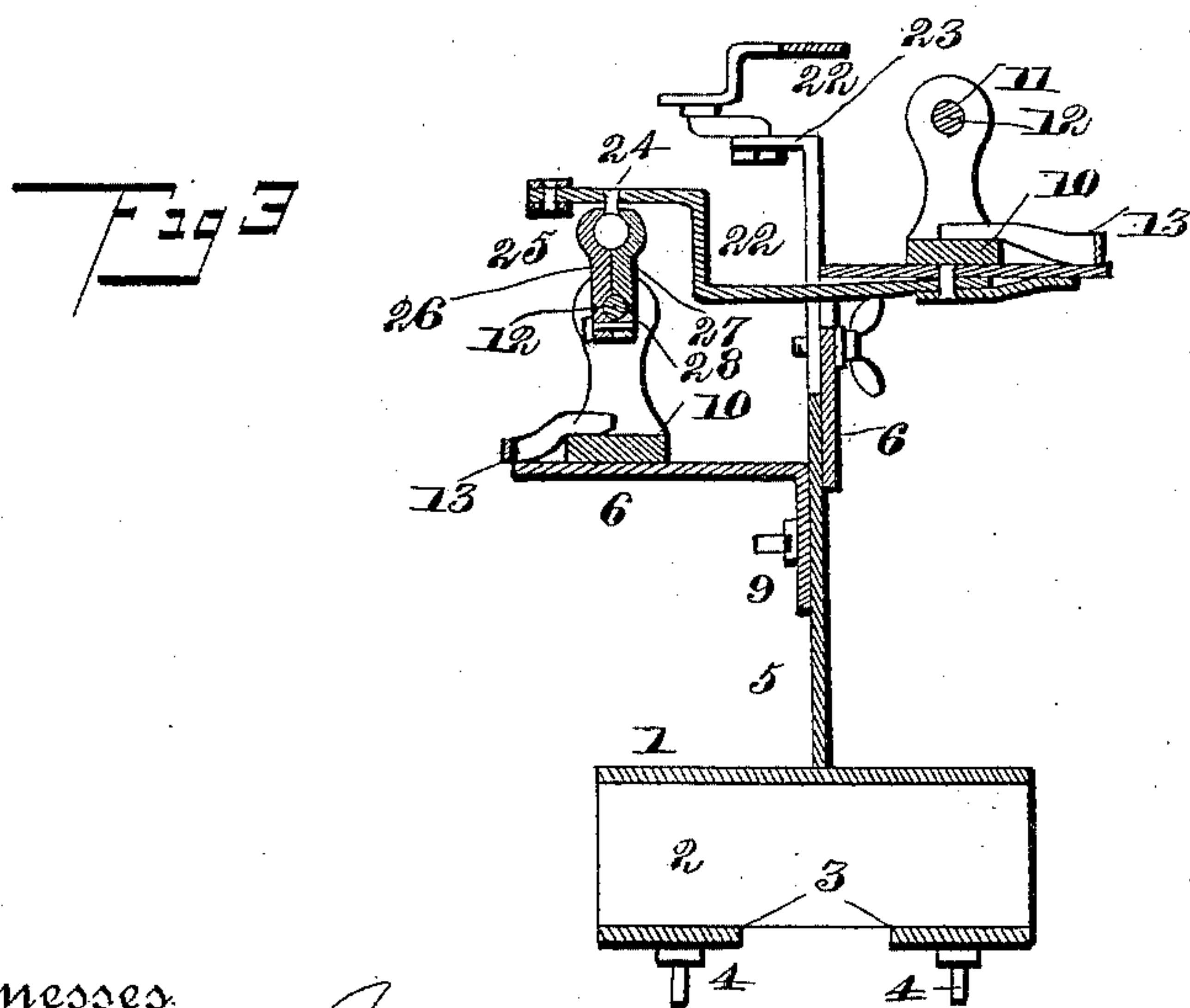
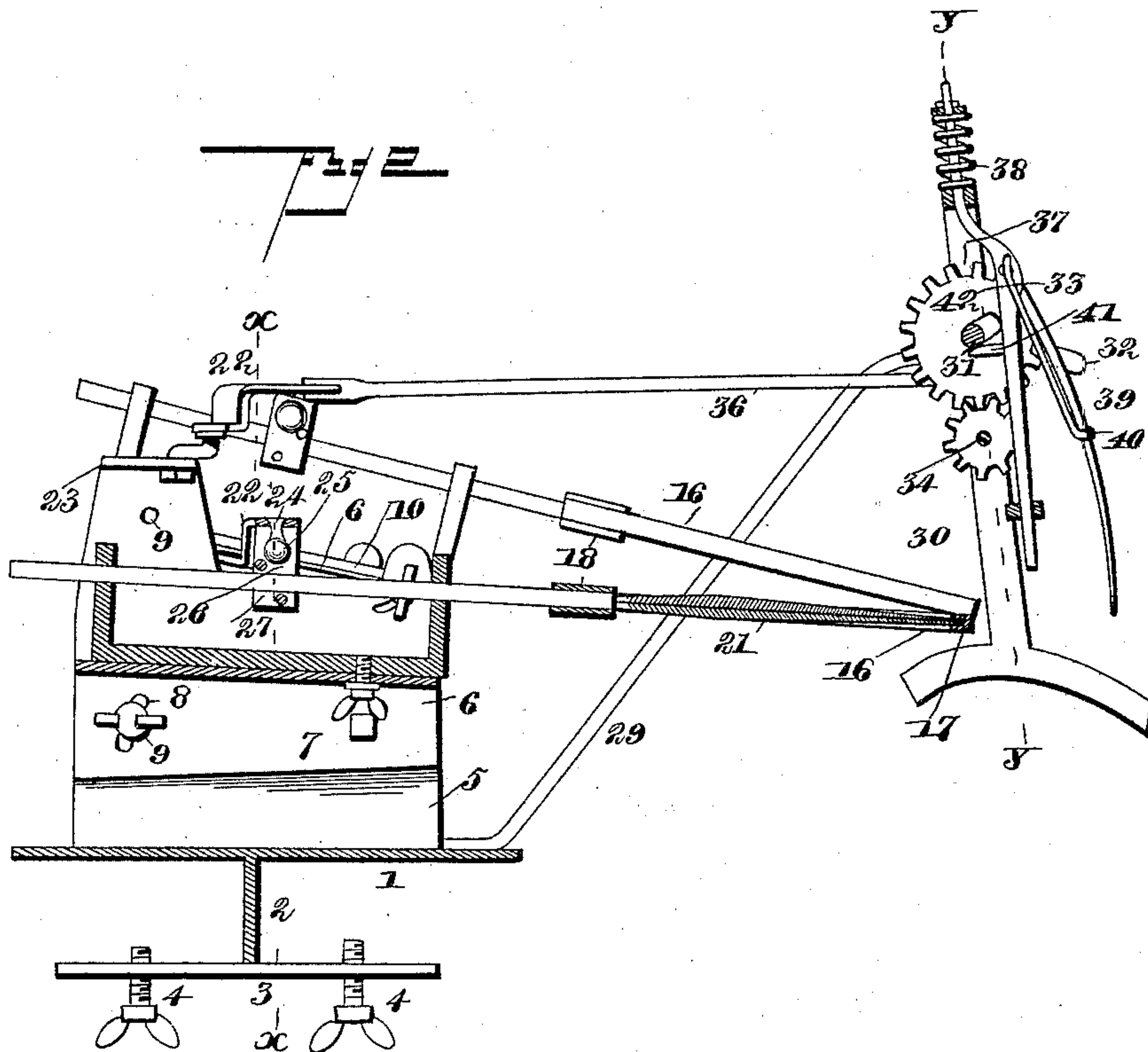
(No Model.)

3 Sheets—Sheet 2.

J. Q. SMITH.
MACHINE FOR SHARPENING GIN SAWS.

No. 431,197.

Patented July 1, 1890.



Witnesses

John Inure
Wm. Bagger

Inventor

John Q. Smith

By his Attorneys

C. A. Snow & Co.

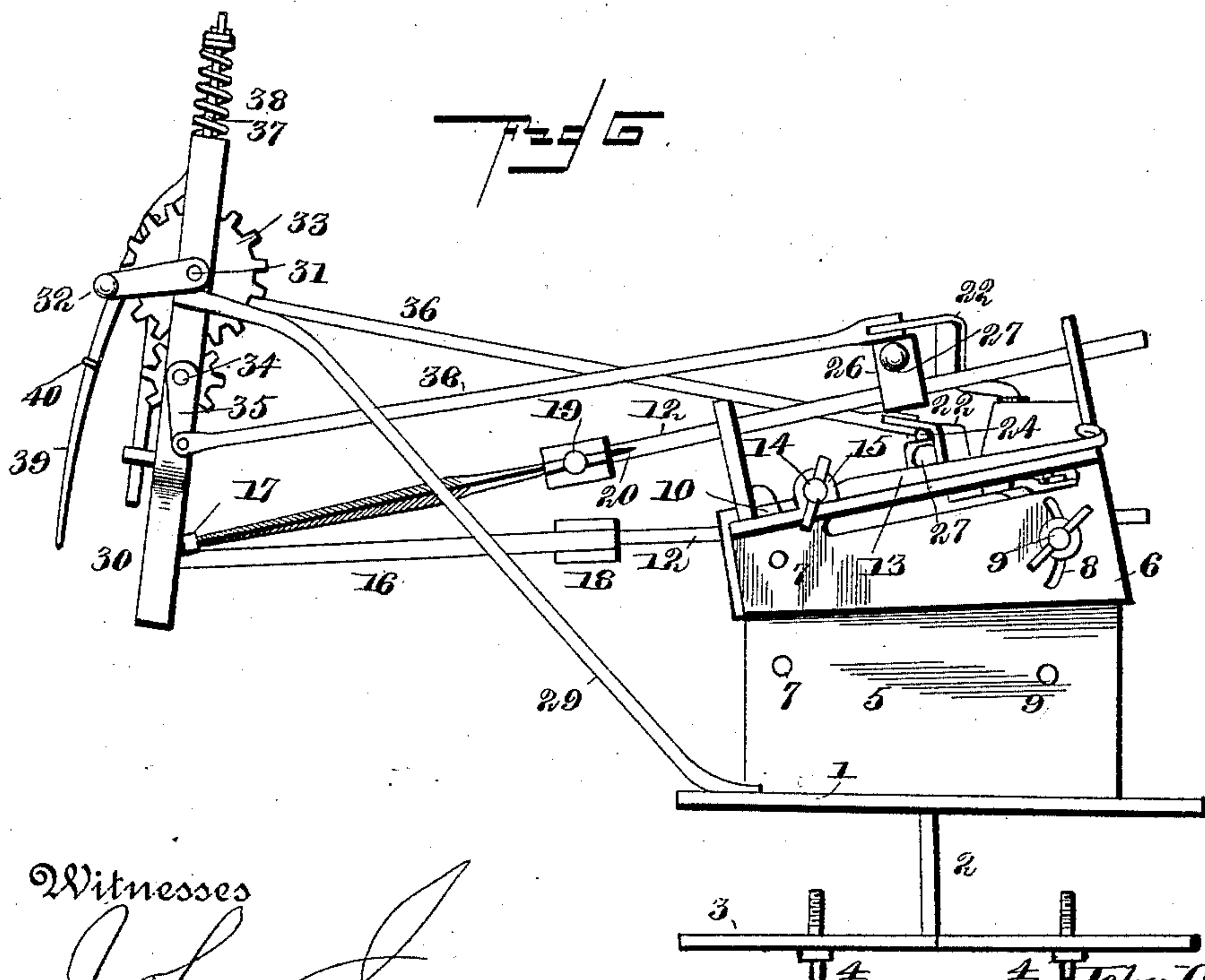
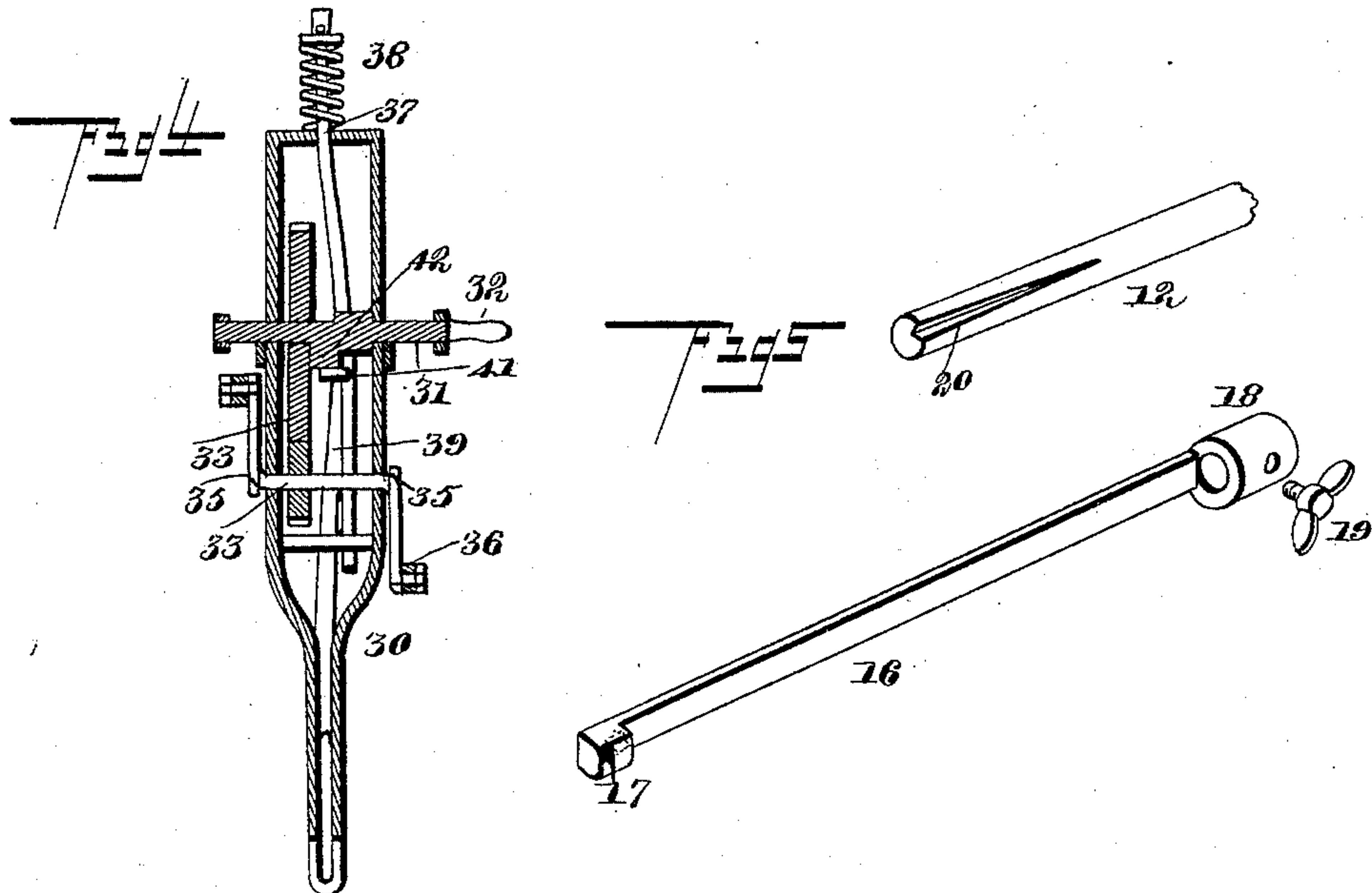
(No Model.)

3 Sheets—Sheet 3.

J. Q. SMITH.
MACHINE FOR SHARPENING GIN SAWS.

No. 431,197.

Patented July 1, 1890.



Witnesses

John Inure
Wm. Bagger

Inventor

By his Attorneys

John Q. Smith
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN QUINCE SMITH, OF WEIMAR, TEXAS.

MACHINE FOR SHARPENING GIN-SAWS.

SPECIFICATION forming part of Letters Patent No. 431,197, dated July 1, 1890.

Application filed February 8, 1890. Serial No. 339,641. (No model.)

To all whom it may concern:

Be it known that I, JOHN QUINCE SMITH, a citizen of the United States, residing at Weimar, in the county of Colorado and State of Texas, have invented a new and useful Machine for Sharpening Gin-Saws, of which the following is a specification.

This invention relates to gin-saw sharpeners, and it has for its object to construct a machine of this class which shall be simple, durable, and easily manipulated, and by means of which the teeth of gin-saws may be sharpened in a rapid, convenient, and effectual manner.

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

In the drawings hereto annexed, Figure 1 is a perspective view of my improved gin-saw sharpener. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a vertical transverse sectional view taken on the line $x x$ of Fig. 2. Fig. 4 is a vertical transverse sectional view taken on the line $y y$ of Fig. 2. Fig. 5 is a perspective detail view of one of the file-holders. Fig. 6 is a side elevation of the machine, taken from the side opposite to that shown in Fig. 1.

Like numerals of reference indicate like parts in all the figures.

1 designates the base of the machine, which is provided with a downwardly-extending transverse rib 2, having cross-pieces 3 3, provided with set-screws 4, by means of which the machine may be mounted, as will be hereinafter described, in position for operation. The base-plate 1 is provided with an upwardly-extending longitudinal plate 5, to opposite sides of which the angle-plates 6 6 are attached pivotally by means of transverse pins or bolts 7. The rear ends of the angle-plates 6 are provided with slots 8, which are concentric with the pivoting-pins, and through said slots extend the set-screws or thumb-screws 9, by means of which the said angle-plates may be retained in any position to which they may be adjusted.

The angle-plates 6, which are attached to the plate 5 at different points of elevation, extend outwardly from the said frame-plate and carry on their upper sides the pivoted yokes 10, the ends of which are upturned, as shown, and provided with aligned perforations 11, through which extend the shanks 12 of the file-holders 16, which are mounted to reciprocate longitudinally. Suitably attached to the upper sides of the angle-plates 6, near their front ends, are the springs 13, the rear ends of which bear against the rear ends of the pivoted yokes, which are thereby forced in an inward direction. The tension of the springs 13 may be regulated by means of thumb-screws 14, mounted in brackets 15 at the outer edges of said angle-plates and bearing against the outer sides of the springs.

The file-holders, which are designated by 16, each consist of a bar of suitable length provided at its outer end with a socket 17 to receive the point of the file, and at its inner end with a sleeve 18 to receive the tang of the file and having the set-screw 19. The front ends of the shanks 12, which enter the sleeves 18, are each provided with a groove 20 to accommodate the tang, and it will be seen that by tightening the set-screws 19 the file-holders are firmly secured to the shanks and the files in the holders. The ordinary three-cornered files, as shown at 21, are used in connection with my invention.

22 designate cranks, one of which is secured adjustably to the upper end of the vertical frame-plate 5, which is provided with a horizontal bracket 23. The other crank 22 is likewise mounted adjustably upon the under side of the upper angle-plate 6. Pivotaly mounted upon the said adjustable cranks are the links 24, which are provided on their under sides near their outer ends with balls 25, upon which are mounted the sockets 26, each of which is composed of a pair of clamping-plates 27, connected by means of stud-bolts and provided in their meeting faces with grooves 28 to accommodate the shanks 12 of the file-holders, which are mounted securely in the said sockets.

A pair of arms 29, extending forwardly

from the frame of the machine, support a frame 30, in which is journaled a transverse shaft 31, the ends of which are provided with operating-cranks 32. The shaft 31 carries a gear-wheel 33, which meshes with a pinion upon a transverse shaft 34, journaled in the lower end of the frame 30. The shaft 34 is provided with cranks 35, which are connected by pitmen 36 with the outer ends of the links 24, to which an oscillating or vibratory motion may thus be imparted, thereby reciprocating the shanks carrying the file-holders longitudinally in their bearings in the pivoted yokes 10.

The frame 30 is provided with bearings for a vertically-sliding rod 37, which is normally forced in an upward direction by means of a spring 38. To the rod 37 is pivotally attached a pawl 39, the outer end of which is bifurcated and adapted to engage the teeth of the gin-saw which is being operated upon and with which it is held in contact by means of a spring 40, attached to the vertically-sliding rod 37. The latter is provided with an arm 41, adapted to be engaged by a roller 42, which is mounted eccentrically on one side of the gear-wheel 32. It will thus be seen that by the joint action of the said eccentric roller and of the spring 38 a vertical reciprocating movement will, when the machine is operated, be imparted to the rod 37, carrying the pawl which engages the teeth of the gin-saw, so as to rotate the latter intermittently the space of one tooth at a time, thus causing the teeth of the gin-saw to be successively exposed to the action of the reciprocating files.

In operation the gin-saw shaft is mounted upon suitable supporting-trusses, and a pair of slats are placed across the trusses in front of and parallel to the gin-saw shaft. Upon these slats the machine is mounted for operation, as will be readily understood. By rotating the shaft 31 by means of its operating-cranks the files which engage opposite sides of the teeth of the gin-saw will be rapidly reciprocated and the gin-saw will be gradually rotated so as to present its teeth successively to the action of the files. By means of the adjusting-screws 14 the files may be caused to bear against the teeth of the saw with any desired degree of pressure, and the said springs also permit the front ends of the files to yield as the gin-saw is being rotated. The construction of the machine is simple and inexpensive, and it may be operated easily and with good results, its manipulation requiring no special skill.

Having described my invention, what I claim is—

1. The frame comprising the base-plate, the downwardly-extending transverse rib having cross-pieces, and the set-screws at the ends of the latter, in combination with the gin-saw-sharpening machine supported on said frame, and the supporting-slats upon which said

frame is adjustably mounted, substantially as and for the purpose set forth.

2. The combination of the frame having the longitudinal vertical plate, the angle-plates mounted pivotally and adjustably on opposite sides of the latter, and the yokes mounted pivotally upon the said angle-plates and having bearings for the shanks of the longitudinally-reciprocating file-holders, substantially as set forth.

3. The combination, with the base-frame and the central longitudinal vertical supporting-plate, of the pivoted supporting angle-plates, the set-screws for retaining the same at any adjustment, the yokes mounted pivotally on said supporting-plates and the longitudinally-reciprocating file-holders, and the springs arranged to bear against the outsides of the said pivoted yokes at the rear ends of the latter, substantially as and for the purpose set forth.

4. The combination, with the base-frame having the central longitudinal vertical plate, of the supporting angle-plates, the yokes mounted pivotally on the same and having bearings for the longitudinally-reciprocating file-holders, the springs arranged to bear against the said pivoted yokes, and the set-screws to regulate the tension of the springs, substantially as set forth.

5. The combination of the pivotal yokes having the reciprocating file-holders, the links connected at their inner ends to adjustable cranks and at their outer ends to the operating-pitman, and means for connecting the said links with the file-holders and suitable operating mechanism, substantially as and for the purpose set forth.

6. The combination of the pivoted yokes, the pivoted links, the pitmen connecting the latter with cranks upon a transverse shaft, the file-holders mounted to reciprocate in the pivoted yokes, and the ball-and-socket joints connecting said file-holders with the pivoted links, substantially as and for the purpose set forth.

7. The combination, with the pivoted yokes having bearings at their front and rear ends, of the reciprocating file-holders, the clamping-plates mounted on the same and having sockets at their upper ends, the pivoted links having balls mounted on the said sockets, and the pitmen connecting the said pivoted links with suitable operating mechanism, substantially as and for the purpose set forth.

8. The combination of a frame, the pivoted supporting-plates, set-screws to retain the latter at any adjustment, the pivoted yokes having the longitudinally-reciprocating file-holders, springs to force the rear ends of said yokes in an inward direction, the set-screws to regulate the tension of said springs, the pivoted links, the ball-and-socket joints connecting the latter with the file-holders, a transverse operating-shaft, pitmen connecting cranks upon the latter with the pivoted

links, a vertically-sliding bar having a pivoted spring-actuated pawl to engage the teeth of the saw which is being operated upon, and mechanism for forcing the said bar intermittently in a downward direction against the tension of the spring, all combined and operating substantially as and for the purpose set forth.

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

JOHN QUINCE SMITH.

Witnesses:

S. J. TOOKE,
DAN STAFFORD.