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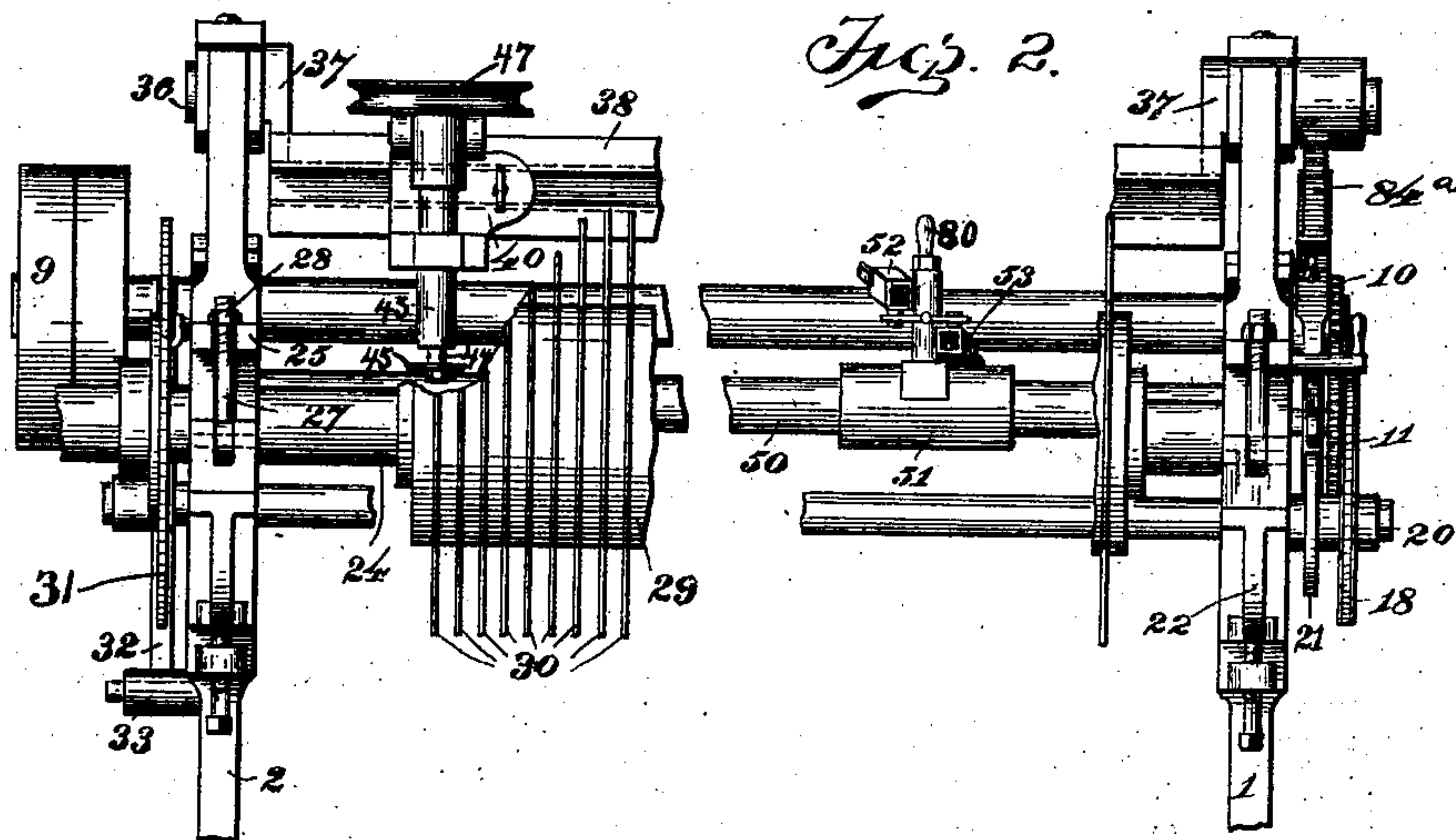
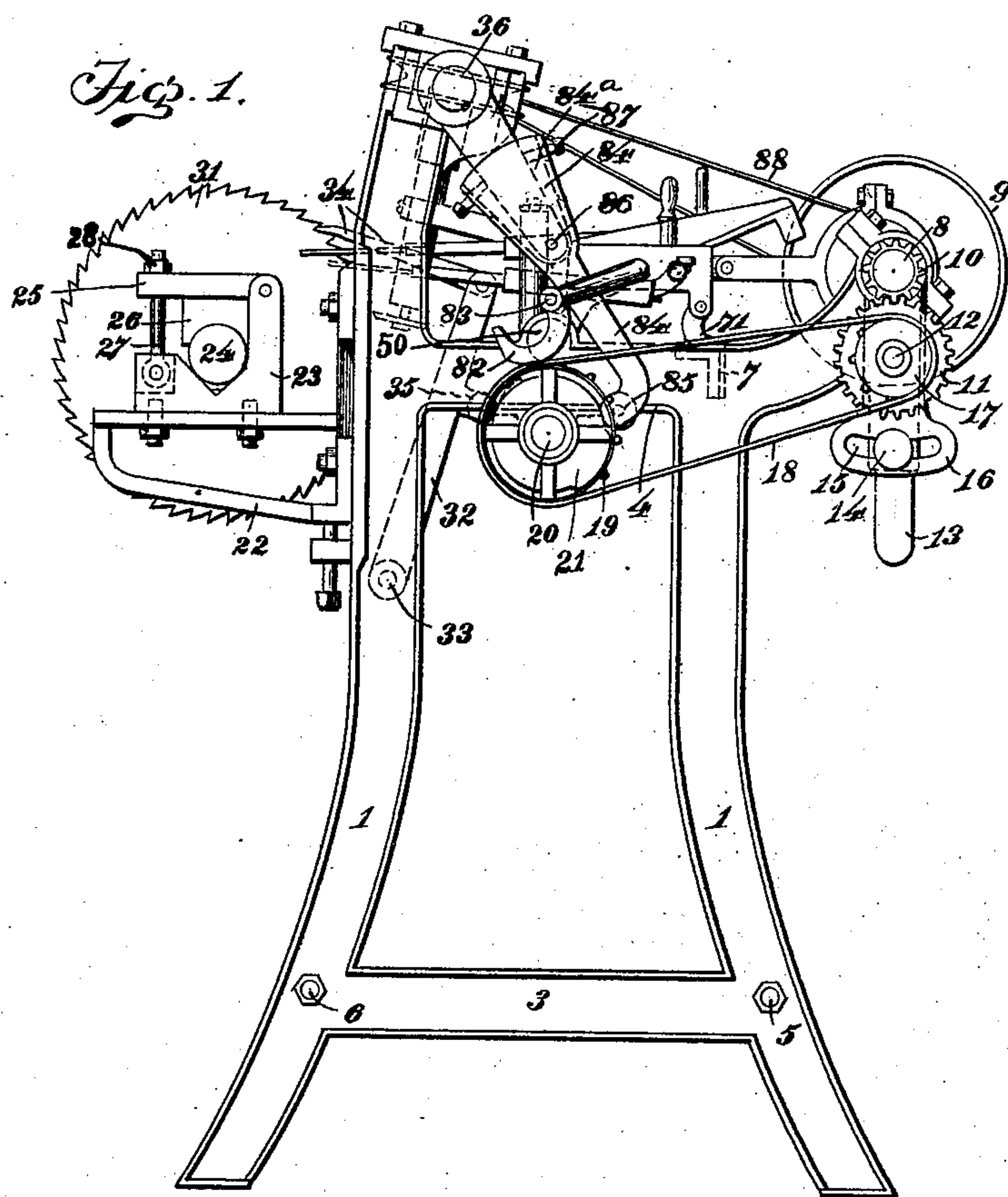
Patented Dec. 9, 1902.

A. FREDRICKSON.
MACHINE FOR FILING GIN SAWS.

(Application filed Aug. 12, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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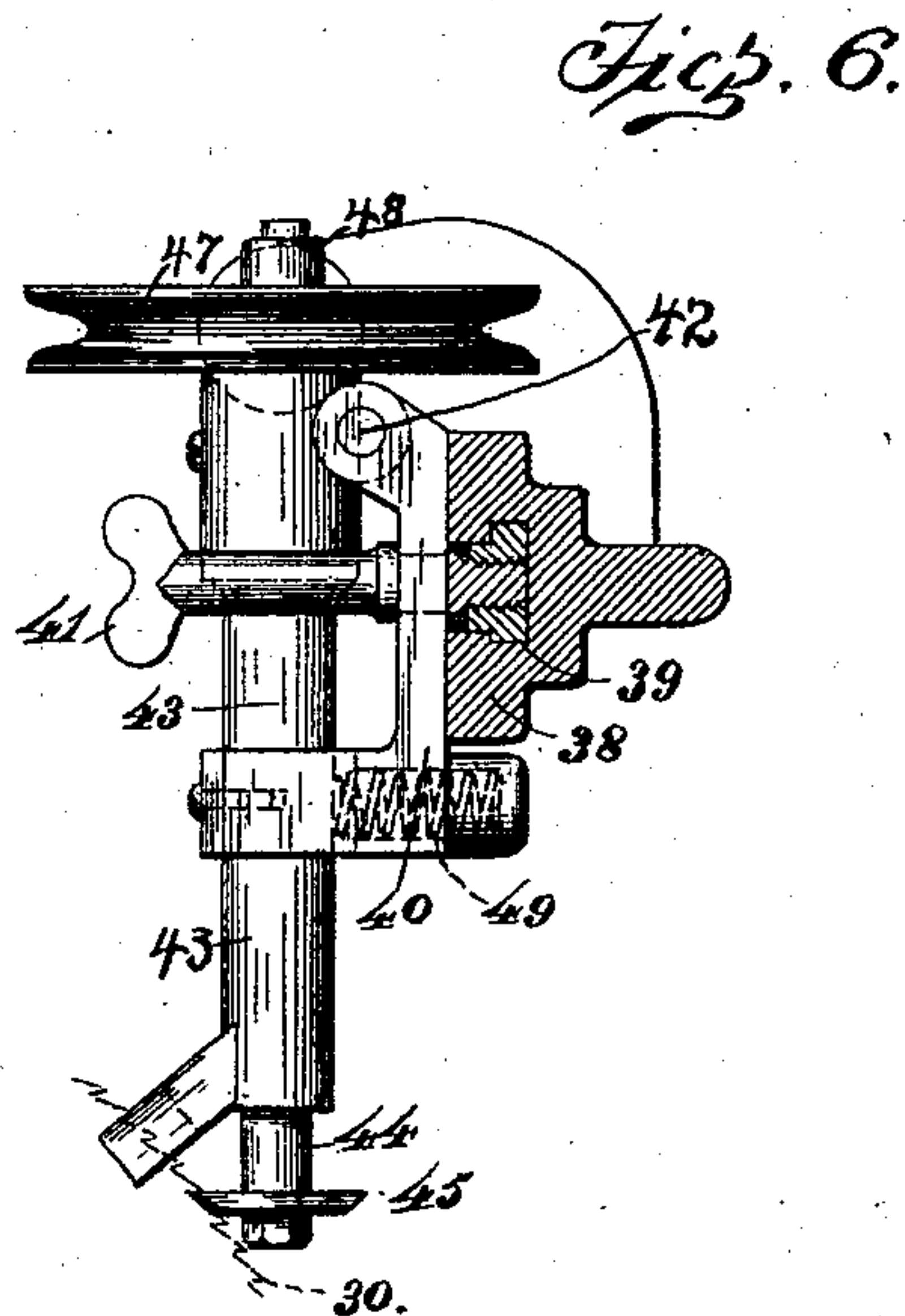
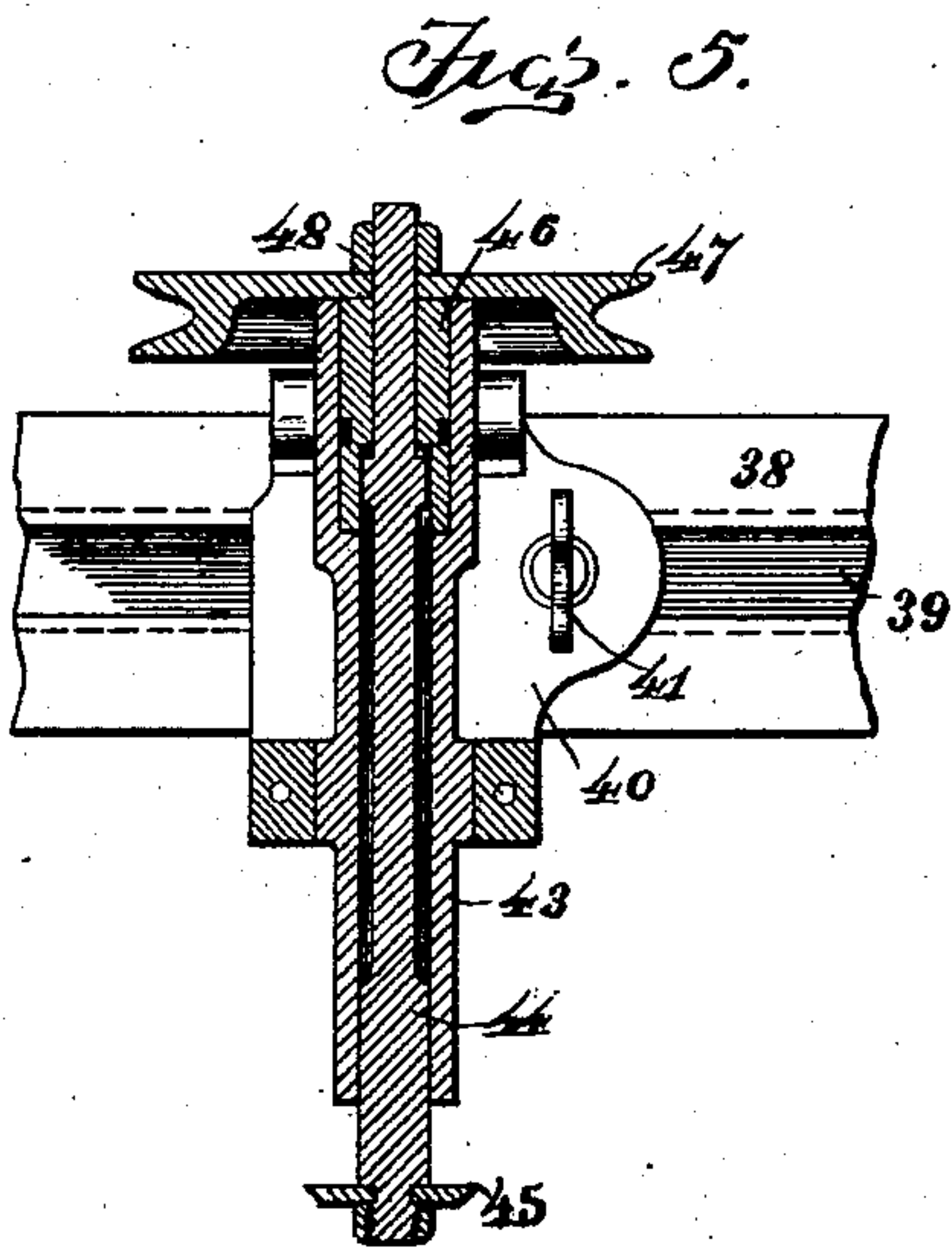
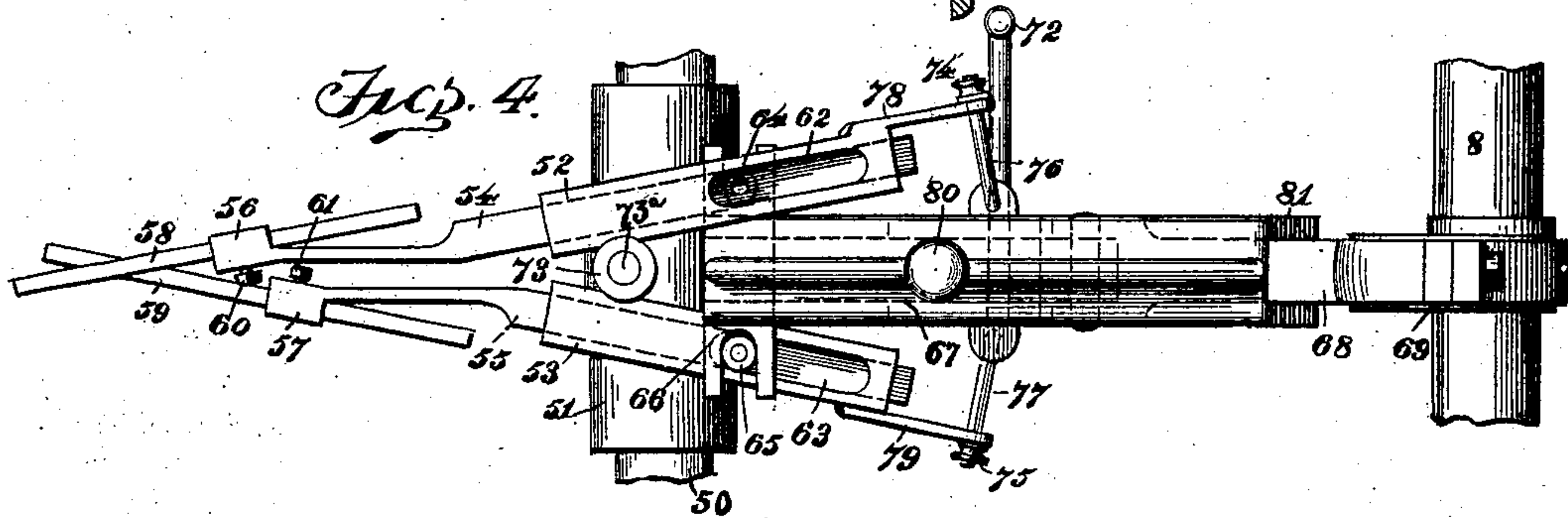
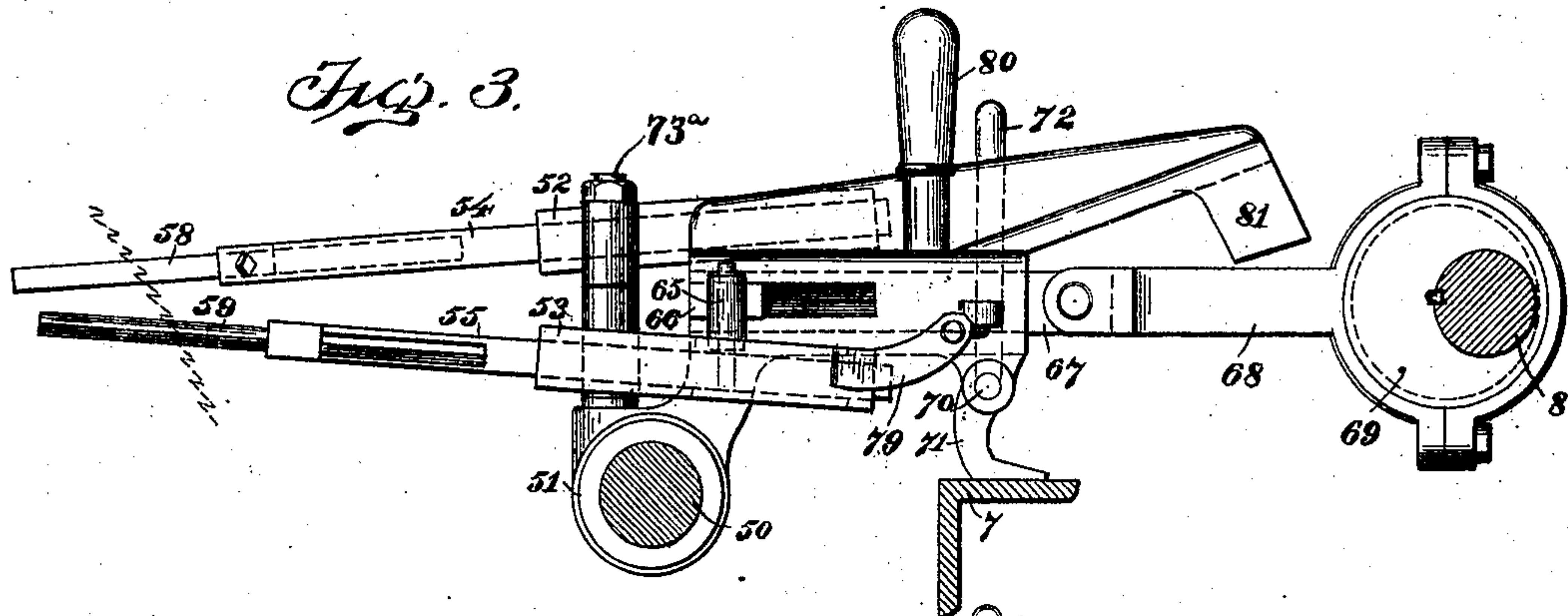
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MACHINE FOR FILING GIN SAWS.

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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

AUGUST FREDRICKSON, OF COLUMBUS, MISSISSIPPI, ASSIGNOR TO THE
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MACHINE FOR FILING GIN-SAWS.

SPECIFICATION forming part of Letters Patent No. 715,653, dated December 9, 1902.

Application filed August 12, 1901. Serial No. 71,812. (No model.)

To all whom it may concern:

Be it known that I, AUGUST FREDRICKSON, a citizen of the United States, residing at Columbus, in the county of Lowndes and State of Mississippi, have invented certain new and useful Improvements in Machines for Filing Gin-Saws; and I do hereby 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.

This invention is in the nature of a machine for filing gin-saws, and has for its object the provision of improved means for feeding a linter or gin cylinder, whereby are secured perfect teeth on the saw no matter what their shape may be.

The further object of the invention is to provide improved means for mounting the gummer-files, whereby a uniform depth of teeth is secured, leaving all the saws of a cylinder of the same diameter.

The further object of the invention is to provide an improved variable-feed mechanism regulated to suit the condition of the cylinder to be filed.

With these several objects in view the invention consists in the improved construction, combination, and arrangement of parts of a machine of this class, as will be hereinafter more fully described and specifically claimed.

In the accompanying drawings, Figure 1 represents a view of the machine in side elevation. Fig. 2 represents a view of the upper part of the machine in end elevation with the middle and some other portions of the machine broken out. Fig. 3 represents in elevation the mechanism for operating the side files. Fig. 4 represents the same mechanism in top plan view. Fig. 5 represents in vertical section a view of the gummer and file-head. Fig. 6 represents a view of the same mechanism in elevation looking at the right-hand side of Fig. 5.

The machine is mounted upon two frames 1 and 2, connected near the bottom and top by cross-beams 3 and 4 and secured at a suitable distance apart by suitable stay-bolts 5 and 6 near the floor and an angle-iron stay 7 near the top, the latter being shown in dotted lines in Fig. 1 and in section in Fig. 3.

8 indicates the driving-shaft, provided with suitable pulleys 9 to receive a belt from any suitable power. Upon the driving-shaft is a gear-wheel 10, which engages the gear-wheel 11 on the short shaft 12, projecting from a depending arm 13, pivoted upon the driving-shaft and secured in any suitable position by means of a set-screw 14, passing through a slot 15 in a rigid arm 16, projecting downward from the frame. Upon the shaft 12 is also secured a sprocket-wheel 17, which is connected, by means of a sprocket-chain 18, to a larger sprocket 19 on a shaft 20, journaled in suitable bearings secured to the frame of the machine. A cam 21 is also rigidly secured upon shaft 20, which serves a double purpose, as hereinafter described.

Adjustably secured to the framework is a bracket 22, carrying a box or bearing 23, secured thereto by bolts and provided with a notch to receive and support a shaft 24. Pivoted to the bearing 23 at its upper end is a bar 25, beneath which is mounted a bearing-block 26, resting upon the top of the shaft 24. This bearing-block 26 is pressed downward upon the shaft 24 by means of a pivoted bolt 27, which passes through the outer end of the arm 25 and is provided outside of the arm with a nut 28. Upon the shaft 24 is mounted the gummer-cylinder 29 to be filed, which, as is usual with such cylinders, carries saws 30. Also mounted upon the same shaft 24 is a ratchet-disk 31, provided with teeth in number corresponding with the teeth of the saws 30.

32 indicates an arm pivoted at 33 upon the frame of the machine, to the top of which arm is pivoted a pawl 34, which engages the teeth of the disk 31. Upon a projection of the arm 32 is an antifriction-roller 35 in contact with a cam on shaft 20.

Pivoted to the upper end of the frame at 36 are two arms 37, one at each side of the machine, in the form of crank-arms and carrying at their lower ends a rock-bar 38, in which is formed a T-slot 39 to receive a sliding block or head 40, which is secured by means of a thumb-screw 41 and may be adjusted at any point in the slot 39. To the sliding head 40 is pivotally secured at 42 a socket 43, in which is journaled a shaft 44,

carrying a gummer-file 45. This shaft 44 passes entirely through the socket and near its upper end also passes through a sleeve 46, against which a pulley 47, mounted on the shaft 44, is clamped by a nut 48. In Fig. 6 a part of one of the saws 30 is shown the dotted lines of the gummer-file 45 in contact therewith. This contact is yielding, being maintained by a spring 49, whereby all danger of breaking the teeth when excessively irregular is obviated.

In connection with my improved gumming mechanism I employ a suitable saw-sharpening device mounted upon a shaft 50, supported at each end on the frame of the machine, upon which shaft is slidably mounted a head or block 51, to which are secured guideways 52 and 53. File-holders 54 and 55 are slidably mounted in the guideways 52 and 53 and carry at their outer ends sockets 56 and 57, in which are secured files 58 and 59, rigidly held by set-screws 60 and 61. Projecting from the holders 54 and 55 into slots 62 and 63 in the guideways 52 and 53 are pins 64 and 65, carrying friction-rollers. Said pins are straddled by the bifurcated ends of a cross-head 66, connected to a piston or slide-bar 67, which is reciprocated through a connecting-rod 68 and an eccentric 69, mounted on the driving-shaft 8. Pivoted to the head 51 at 70 is a cam-lever 71, operated by a handle 72. This cam-lever engages the upper surface of the angle cross-bar 7 and serves to raise or lower the head 51 in order to adjust the inclination of the files 58 and 59 with relation to the saw upon which they are operating. The guideways 52 and 53 are both secured to vertical sleeves 73, mounted one above the other upon a pin 73^a, projecting upward from the head 51. The horizontal inclination, and consequently the horizontal angles, of the files 58 and 59 with relation to the saw-blade is regulated by means of set-nuts 74 and 75 on the ends of rods 76 and 77, said rods passing through the projecting ends 78 and 79 of the slideways.

The head 51 is, as before stated, slidably mounted upon the shaft 50 and can be moved longitudinally of the shaft to bring the files 58 and 59 into operation upon the different saws 30 of the cylinder by means of a handle 80 and to at the same time cause the eccentric 69 to slide along the shaft 8. A bifurcated or forked bar 81 is carried by the head 51 and is made to straddle the connecting-bar or pitman 68 when the files are lifted from the gin-saws, so as to prevent the eccentric 69 from binding upon the shaft 8 when the said eccentric is to be slid upon the same. A cam 82 is pivoted at 83 to the frame and may be swung upon its pivot to bear under a rocking arm 84, carrying a friction-roller 85 at its outer end in contact with the cam 21. The arm 84 is in two sections, the inner section 84^a being secured upon the pivot of the rock-bar 38. The two sections 84 and 84^a are pivoted together at 86, and their an-

gle with each other is adjusted by means of set-screws 87.

The shaft 44, which carries the gummer-saw 45, is driven from the main driving-shaft 8 by means of a belt 88, connecting a pulley on said driving-shaft 8 with the pulley 47, and the pivotal center of the head or block, which carries a gummer-file, is in line with the center of the pulley 47, so that no means need be provided for tightening and loosening the belt in the different positions to which the pulley 47 is tilted in the adjustment of the gummer-file.

It will be noted that the shaft 20, which carries the cam 21, is rotated much easier than the driving-shaft, and the relative speed of the two may be regulated by removing the sprocket-wheel 17 and replacing it with a larger or smaller one. The provision of the pivoted arm 13, upon which the shaft 12 of the sprocket-wheel 17 is mounted, is for the purpose of taking up or letting out the sprocket-chain 18 to suit the sprocket-wheel 11, the manner of adjustment being readily understood from the foregoing description.

As the cam rotates the lever 32 is oscillated on its pivot 33, thus causing the pawl 34 to alternately drop and take on the teeth of the disk 31 and pass said disk around one step at a time, carrying the shaft 24 with it, and with the shaft the saw being operated upon, so that with each rotation of the shaft 20 and its cam the saw is moved one tooth around.

While the shaft 20 is completing its single revolution, it will be evident that the roller 35 will ride over the high portion of the cam 21, which will remove the gummer-file out of the tooth of the saw and hold it out for a short while. At this time the pawl-lever will move the ratchet-wheel one tooth. Then the levers 32 and 84 will both attain their former positions, and the gummer-file will be at work again. At the same time the side files will have passed off one tooth onto the next.

From the foregoing description it will be seen that I have provided improved means for feeding a linter or gin cylinder and its saws in a manner to secure perfect teeth on the saws without regard to their shape.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for filing linter or gin saws, the combination of a rock-bar pivotally suspended in the frame of the machine, a socket slidably secured thereon, a shaft journaled in said socket, a gummer-file secured upon the said shaft, means for holding the gummer-file against the saw with a yielding pressure, and means for rocking the bar with the gummer-file so that the said file will be out of contact with the saw, substantially as described.

2. A machine for filing linter or gin saws, comprising means for supporting the saw head or cylinder, a pivoted rock-bar arranged near the saws, a gummer slidably mounted upon the said bar being pivotally secured

theretoso that the gumming-file carried thereby may be moved toward the saws, yielding pressure devices for forcing the gummer-file to its normal position but capable of yielding should the gummer be forced against the saws with too great force, and means for swinging the rock-bar to force the gummer toward or away from the saws, substantially as described.

3. In a machine for filing linter or gin saws, the combination with means for supporting the gin-saws, of a rock-bar, swinging supports carrying the said bar, opposite the same, a gummer-file slidably supported thereon, a head carrying said file, a spring interposed between the head and file for strongly forcing the gummer-file against the saw, the said spring yielding sufficiently to prevent injury to the gummer-file or the saw-teeth should the bar be adjusted too close to the saws, and means for swinging the rock-bar away from or toward the saws for moving the gummer into or out of engagement therewith, substantially as described.

4. In a machine for filing linter or gin saws, the combination of a swinging rock-bar mounted opposite the saws, an arm for swinging said bar, a cam for raising and lowering the arm to lift a gummer-file out of contact with the saw being operated upon when changing from one tooth to another, a head sliding on said bar, a gummer-file pivoted to said head, and a spring carried by the head for forcing the gummer outwardly to a proper extent for producing teeth of proper length, substantially as described.

5. A saw-gumming mechanism, comprising a spindle carrying a circular file, a casing rotatably supporting the said spindle, said casing being pivoted upon a block or head, a head carrying said casing, a rock-bar having a dovetail groove for supporting the said block or head, a clamp sliding in said groove, and a thumb-screw for tightening the clamp and holding the gummer at any suitable point on said bar for limiting the outer movement of the casing, a spring for forcing the casing normally toward said limiting means, and means for moving said rock-bar with its gummer toward or away from the saw operated upon, substantially as described.

6. A gin-saw-gumming mechanism comprising a frame for holding the gin-saws to be gummed, a gumming-file, a pivotally-mounted file-supporting rock-bar, extending in front of all the saws, the rock-bar by its movement applying the gumming-file to the saws, or retracting the same therefrom no matter what the position of the said gumming-file along the length of said bar, means for adjustably securing the gumming-file upon the said bar, a cam mounted on the frame of the machine, a lever connected with said rock-bar for moving it, one end of said lever engaging said cam, means for turning the saws to be gummed, the cam operating automatically to cause the rock-bar to lift

the gumming-file out of engagement with the saws at the time when the saws are fed around in the machine, substantially as described.

7. A saw-gumming machine comprising a frame for holding gin-saws and means for turning the said gin-saws step by step, a gumming-file, a gumming-file-carrying rock-bar, pivotally suspended in the frame and extending from one end thereof to the other, the said bar serving to support the gumming-file opposite any one of the said saws and at the same time to move the gumming-file toward or away from the said saws, adjustable means for holding the gumming-file in its different positions on the said bar, a lever attached to said bar, a cam for engaging the free end of the lever, and means for rotating the cam in conjunction with the means for moving the saw-cylinder so that the gumming-file will be lifted from the saws at the proper time, substantially as described.

8. A gin-saw-gumming mechanism, comprising a rock-bar pivotally suspended in a suitable frame in proper relation to the saw-cylinder to be gummed, a cam mounted in the frame, a lever connected with the said pivoted bar at one end and engaging the said cam at the other end for moving the bar back and forth with relation to the saws to be gummed, a slide-block mounted upon the pivoted bar, a spindle mounted upon said block, and a gumming-file carried by the said spindle, together with means for rotating the same, the pivoted rock-bar permitting of the gumming-file being moved away from the teeth of the saws being gummed when the said saws are turned to a new position for further operation, substantially as described.

9. A gin-saw-gumming mechanism, comprising means for revolubly supporting a saw-cylinder, a gumming-file-supporting bar pivoted in the frame of the machine, an adjustable lever for moving said bar, comprising an arm secured to said bar, and an auxiliary arm pivoted to the end of said arm, means for limiting the pivotal movement of said auxiliary arm with respect to the fixed arm, and a cam for engaging the upper end of the auxiliary arm to lift the bar and the gumming-file away from the teeth of the saw-cylinder, substantially as described.

10. A saw-gumming mechanism, comprising means for revolubly supporting a saw-cylinder, a pivoted gumming-file-supporting mechanism mounted in the frame of the machine, a lever for operating the same, made up of two sections, one section being attached to the gumming-file-supporting mechanism, and the other section being pivoted thereto, the outer of said sections having a flaring recess formed in one end for receiving the end of the section carried by the file-supporting mechanism, set-screws for regulating the position of the arm-sections with respect to each other, and a cam for moving said arm, substantially as described.

11. A gin-saw-gumming mechanism com-

prising a suitable frame, adjustable brackets
carried thereby, and provided with bearings
for supporting a saw-cylinder-supporting
shaft, means for turning the saw-cylinder, a
5 bar arranged parallel with the saw-cylinder
and formed with upwardly-extending arms
at its ends pivoted to the frame of the ma-
chine, the said bar having a dovetailed slot
formed therein, a block provided with means
10 for engaging said dovetailed slot, a gumming-
file, means for clamping said block at any
point in the said slot so as to bring the gum-
ming-file opposite any of the teeth upon the
saw-cylinder a socket-piece pivoted to said
15 block, a spindle journaled within said socket,
a pulley carried by the said spindle, the cen-
ter of the pulley being arranged opposite the
pivotal centers of the bar-supporting arms, a
power-shaft on the frame of the machine, a
20 pawl carried thereby, a belt connecting the

said pawl with the pawl of the gumming-file
shaft, and means for moving the pivoted bar
back and forth to move the gumming-file to-
ward or away from the teeth of the saws, sub-
stantially as described. 25

12. In a machine for filing gin-saws, the
combination of a rock-bar extending the full
length of the machine, a gummer-file slidably
mounted thereon, so that it may be brought
opposite any one of the gin-saws, the said rock- 30
bar also operating to dip the gumming-file to-
ward or away from the saws, and means for
rocking the said bar, substantially as de-
scribed.

In testimony whereof I hereunto affix my 35
signature in presence of two witnesses.

AUGUST FREDRICKSON.

Witnesses:

JNO. A. NEILSON, Sr.,
E. M. HIGHT.