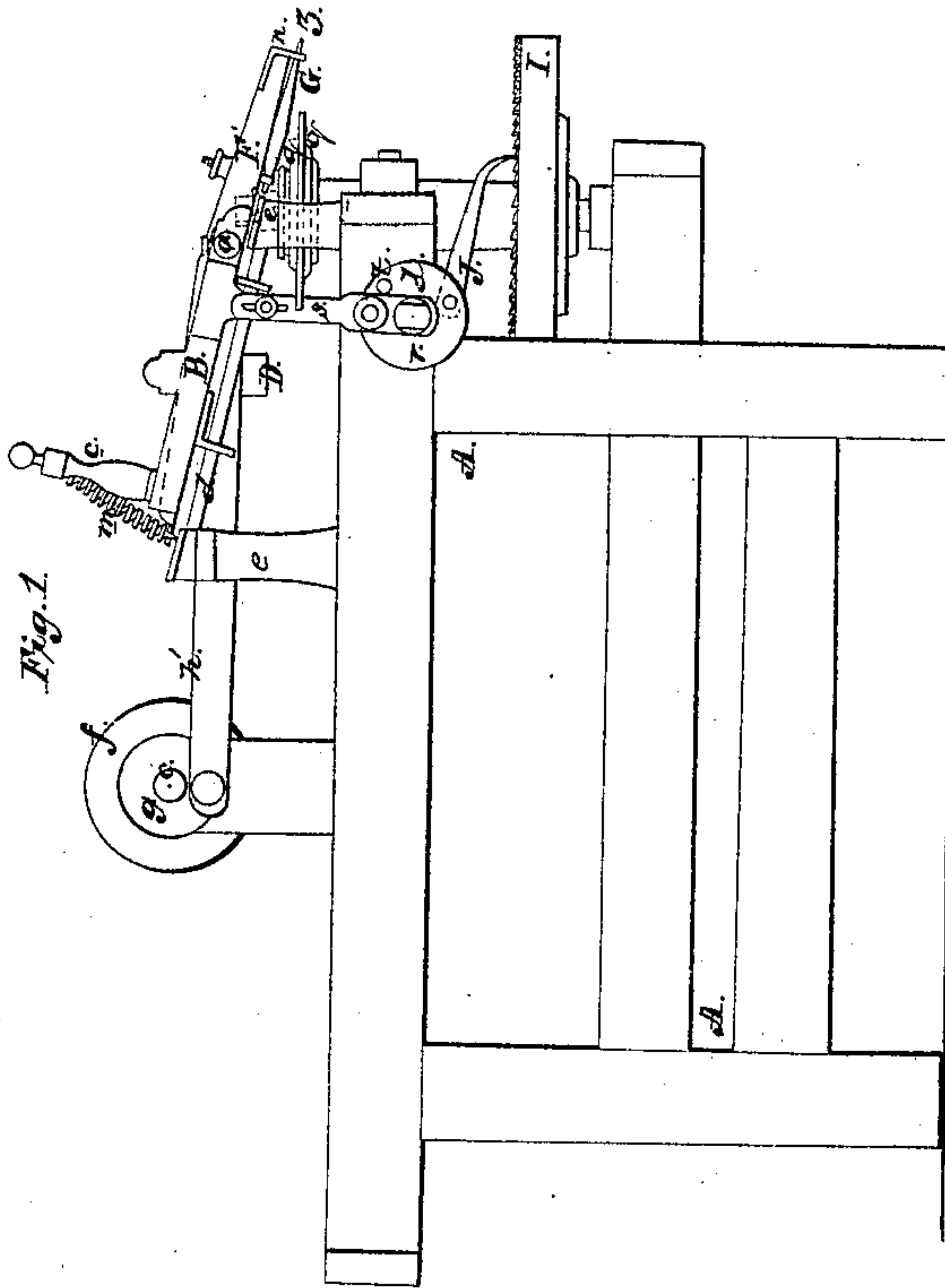
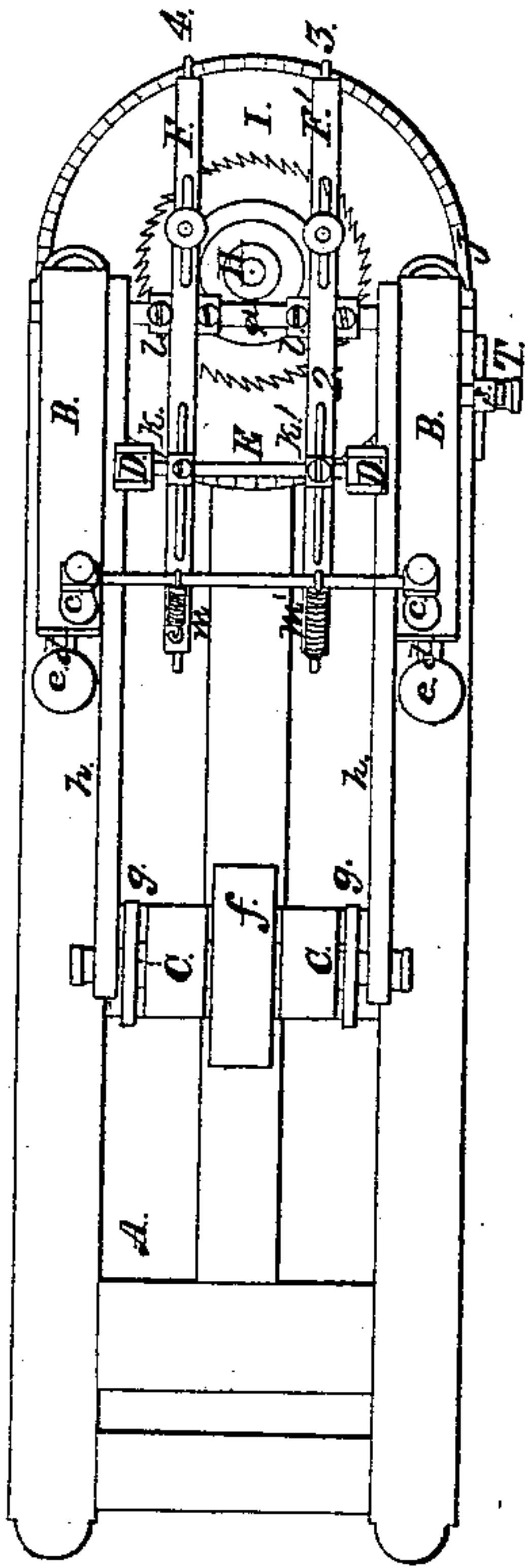
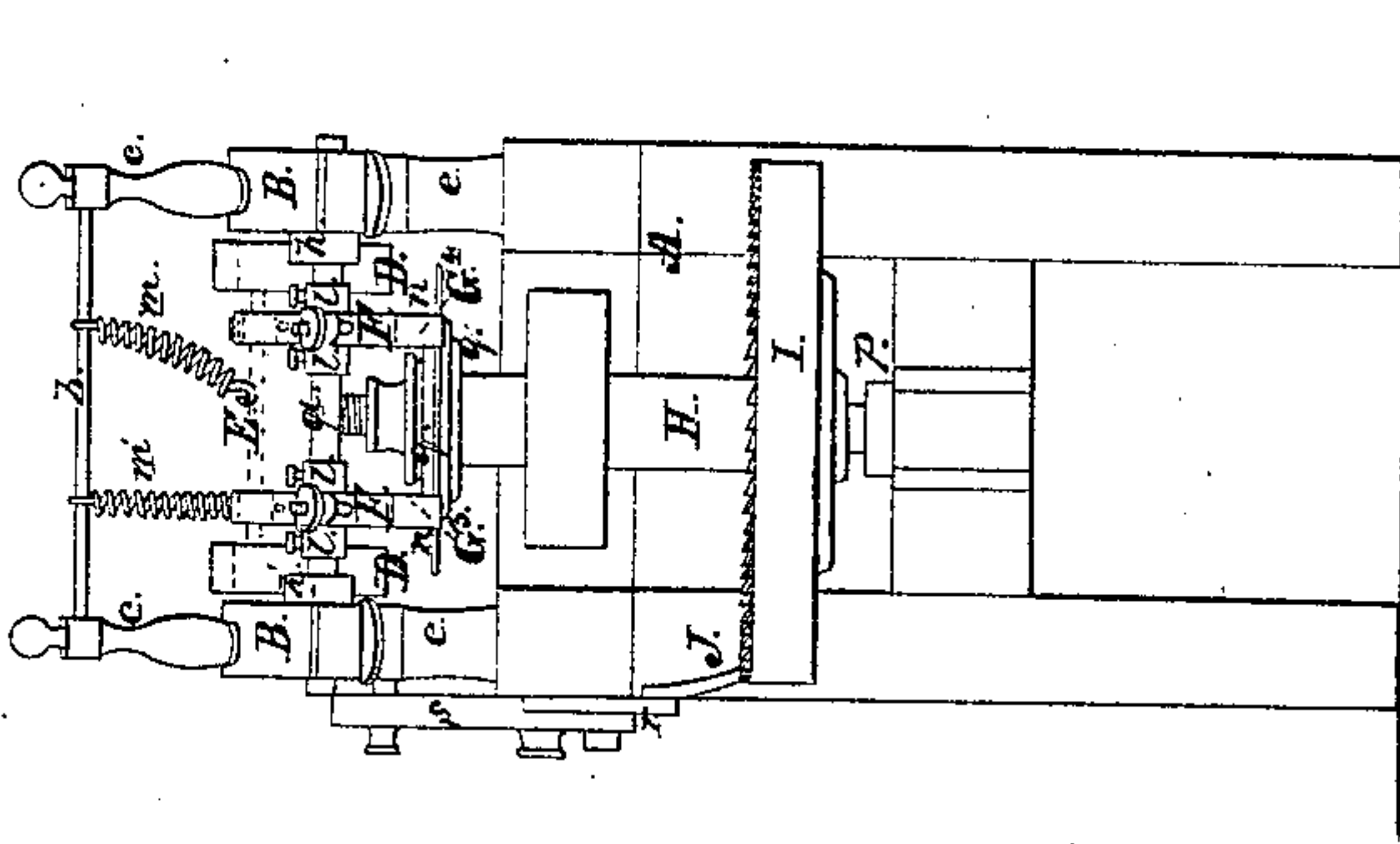
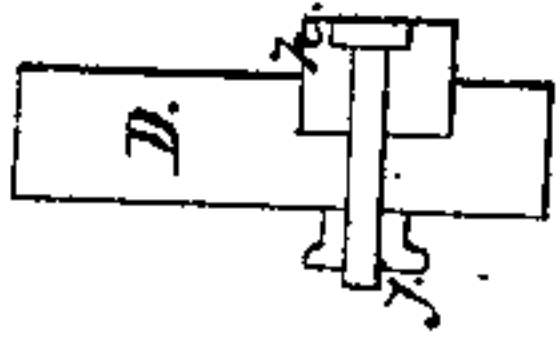
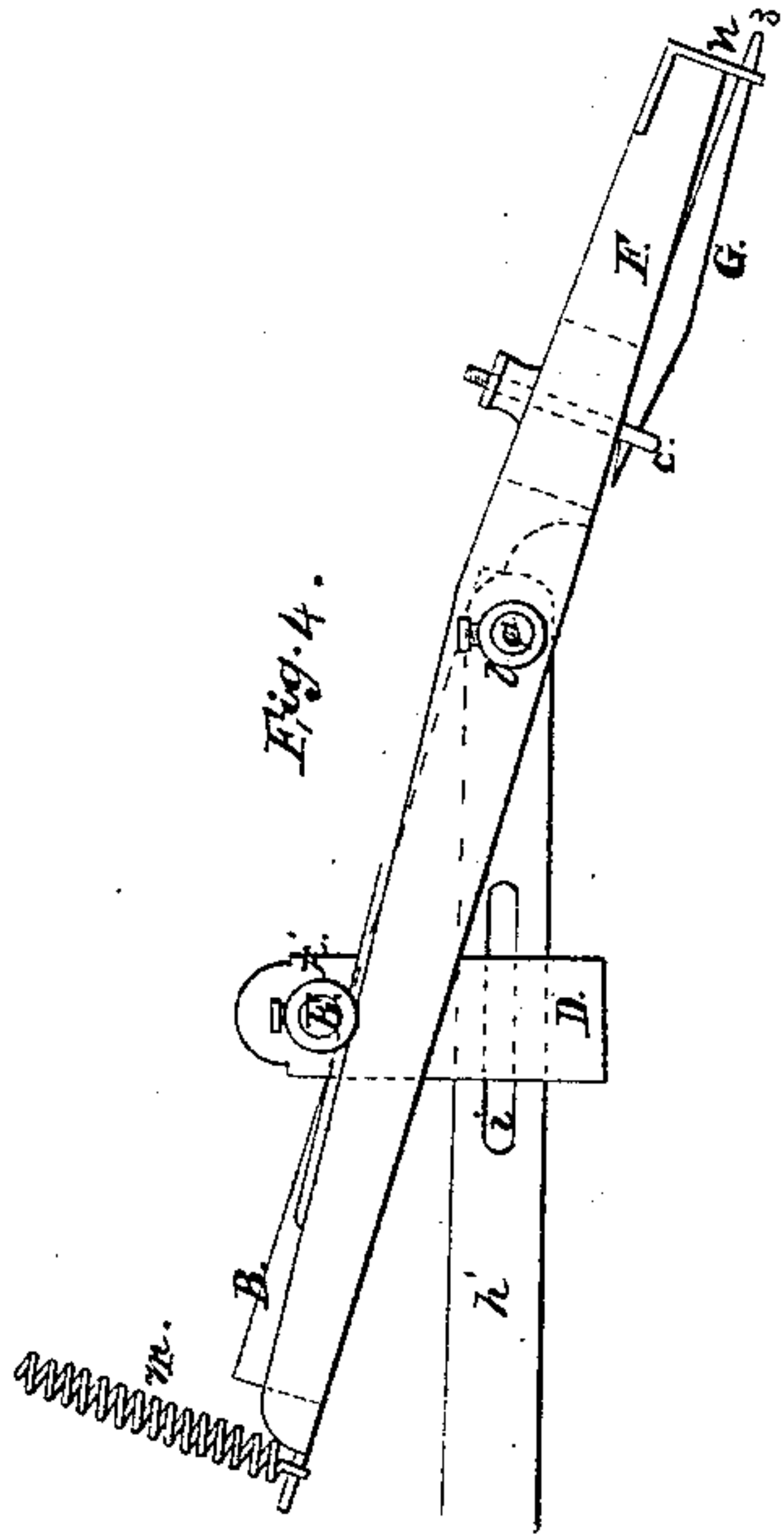


I. F. Brown,

Sharpening Reciprocating Saws.

N^o 6,769.

Patented Oct. 2, 1849.



UNITED STATES PATENT OFFICE.

I. F. BROWN, OF COLUMBUS, GEORGIA.

MACHINE FOR FILING CIRCULAR SAWS.

Specification of Letters Patent No. 6,769, dated October 2, 1849.

To all whom it may concern:

Be it known that I, ISRAEL F. BROWN, of Columbus, in the county of Muscogee and State of Georgia, have invented a new and useful Improvement in the Machine for Filing and Sharpening Circular Saws, for Cotton-Gins and for other Purposes, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a side elevation of the machine. Fig. 2 is an end elevation of ditto. Fig. 3 is a top or birds eye view of ditto. Fig. 4 is a longitudinal section of the inclined traversing frame and parts attached to the same on a larger scale.

Similar letters in the figures refer to corresponding parts.

The nature of this invention and improvement consists in securing the saw to be filed between disks, at the upper extremity of a vertical shaft, turning in boxes in a suitable frame, and arranging above said disks and saw, an inclined traversing frame, operated by connecting rods and cranks, and attaching to said traversing frame two vibrating adjustable levers, having angular files secured at one end, immediately over the saw, and suspended, alternately, by spiral springs at their opposite ends, to a cross bar, secured to the traversing frame, and combining with the same other appurtenances, in such a manner as to cause said files to be forced back and forth over the saw, and alternately with the reversion of the same, to file and sharpen the tangential edges of its teeth.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the frame, made of a rectangular form, of suitable size, strength and material, to contain and support the several parts of the machine.

B is an inclined traversing frame, consisting of two inclined timbers connected together at one end by a horizontal shaft (a) and at the opposite end by a horizontal bar (b) secured to pillars or posts (c), rising from the side timbers, and moving on inclined rods (d) or ways, passing through openings formed in right angled plates, secured to the under surfaces of said side timbers, and secured to upright posts (e) rising from the main frame.

C is a horizontal revolving shaft, turning

in suitable boxes in uprights rising from a cross timber of the main frame having a band, wheel, or pulley (f) at its center, and circular disks or wheels (g), at its extremities provided with pins or wrists, projecting from their outer surfaces, in such a manner as to form cranks, to which are attached connecting rods (h) also connected at their opposite ends to the horizontal transverse shaft (a) of the inclined traversing frame.

D are rectangular timbers or blocks having cavities on one of their surfaces in which the inner side of the connecting rods (h) fit, and secured to said connecting rods by screw bolts, having circular heads passing through slots (i) formed in said connecting rods, and provided on their inner ends with thumb or other screw taps (j), in such a manner as to allow of their being moved nearer to, or farther from the shaft (a), as occasion may require.

E is a horizontal shaft, extending from the upper end of one of these timbers or blocks to the other, and having collars or hubs (k), at intermediate points between its extremities, secured to the same by screws, or in any convenient manner, and having angular grooves or nicks in the lower part of their peripheries.

F, F', are vibrating bars or levers, suspended on the horizontal shaft, which passes through the same, provided with sliding collars (l), with set screws on either side, for adjusting and keeping said levers in the required position, and connected at their opposite ends to spiral springs (m) attached to the cross bar (b), of the pillars or posts (c).

G are angular files, secured to the under part of the end of the vibrating bars or levers, just mentioned, nearest the shaft (a), by inserting one of their ends into openings in right angled plates (n) secured to the ends of said levers, and their opposite ends into metallic loops or rings (o) having screw shanks, extending through slots formed in the levers, and provided with thumb or other taps, in such a manner as to allow of the files being removed and replaced by others, as occasion may require.

H is a vertical shaft, provided with an adjustable collar (p) having a set screw at its lower end, for securing said shaft at any required height, and turning in a suitable box secured to the frame near its upper end, and having circular disk plates (q) between

which the saw plate to be filed is secured by means of a screw and tap at its upper end.

I, is a horizontal rag or ratchet wheel, secured to near the lower end of the vertical shaft H, just mentioned. J is a curved pawl, engaging with this rag or ratchet wheel, and connected by a pin to near the periphery of a wheel (r) turning on a suitable shaft at the side of the machine provided with a lever or vibrating bar (s) on its outside, attached loosely to the shaft and to near the periphery of the wheel by a screw bolt passing through openings (t) in said wheel, and lever or bar, and a screw tap on the end of the same. The upper end of said lever or bar being attached to the inclined traversing frame B, by a screw bolt projecting from a plate on the side of the same, and passing through a slot in the lever or bar, and provided with a thumb or other screw tap. The wheel to which the pawl is attached is perforated with three or more openings (t) next its periphery at equal distances in order to allow the operator to secure the lever or bar (s) opposite either by the screw bolt and tap to increase or diminish the movement of the pawl and consequently the movement of the rag or ratchet wheel.

The mode of operating this machine is as follows: The saw plate to be filed being secured firmly between the disks (q) at the upper extremity of the vertical shaft H, and one of the levers or vibrating bars F' being suspended to one of the spiral springs (m') and the other F detached. Motion is communicated to the main shaft by the application of any convenient power to the main band wheel (f), which causes the inclined traversing frame B, and its several attachments, to be moved forward and back over the inclined rods or ways (d). The spiral spring (m') attached to the extremity of the lever or vibrating bar causing the rod or tongue 2 on said lever F' to be constantly kept in contact with the adjustable collar or box (k'), and the movement of the connecting rod (h') allowing this extremity to be drawn up by the spring (m'), one half

the extent of the descending stroke, and depressed the remainder, causing the file (3) to be forced over the tangential edges of the teeth of the saw plate, in its descent, and raised from the same during its ascent, (the screw bolt or pin, projecting from the side timber of the inclined frame B, causing the pawl to be moved to the next succeeding notch of the rag or ratchet wheel, during the descending stroke, and said pawl to force the wheel and saw plate the required distance in their revolution, to bring the next tooth under the file 3 during the ascending stroke) in such a manner as to file the teeth to the required degree; the extent of filing being regulated by moving the adjustable timbers D, either way, on the connecting rods, and clamping them at the desired point by the screws, and the surfaces of the file being made to conform to the edges of the teeth, by moving the collars (l) between which the levers or vibrating bars F are secured, and the collars (k) on the shaft F, nearer to, or farther from the sides of the main frame. After filing the upper surface of the saw plate, it is removed, and its lower surface is turned upward, and clamped between the disks (q) as before, and the lever or vibrating bar F', is detached from the spiral spring (m'), and the opposite lever F attached to the spiral spring (m), and the operation of filing the opposite edges of the tangential teeth performed by the file 4 on said lever F, in a similar manner to the filing of the other edges by the file on the lever F', described above.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the adjustable collars (k, k' and l) with the adjustable rectangular timbers or blocks D for regulating the up and down play of the levers F F' and files 3, 4, and moving them to either side as occasion may require, as described, thus adapting the machine to various sized saws.

ISRAEL F. BROWN.

Witnesses:

THOMAS KNOX,
W. N. CURTIS.