J. COSTON.

Saw-Filing Machine.

No. 210,299. Patented Nov. 26, 1878.

Fig. 1.

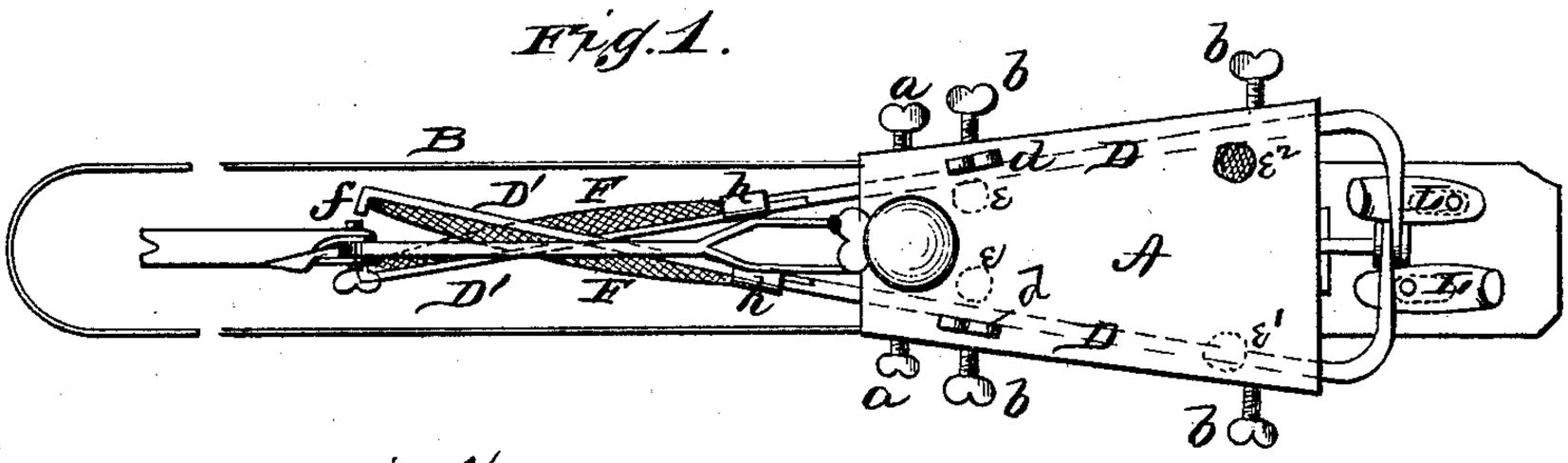


Fig. 4.

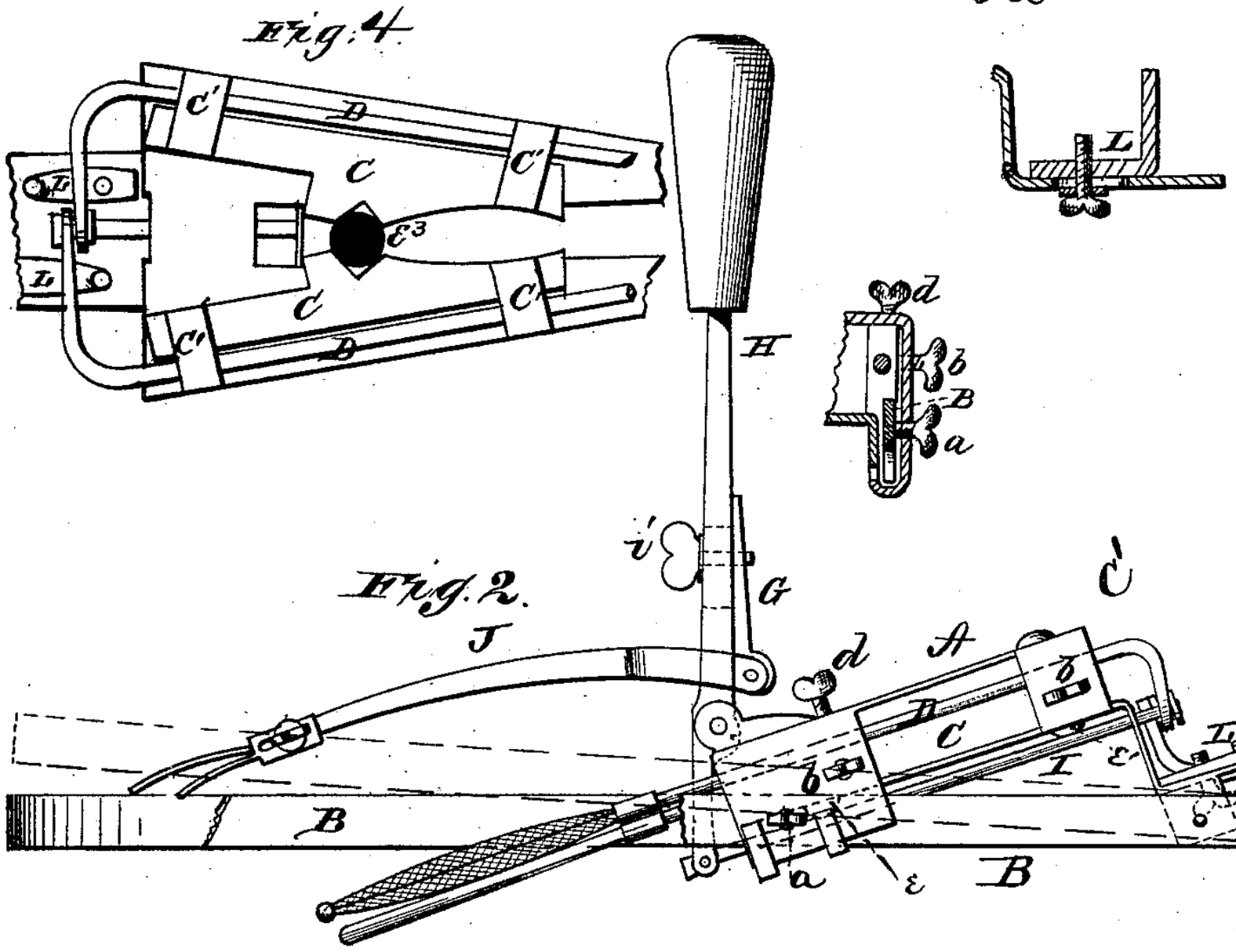
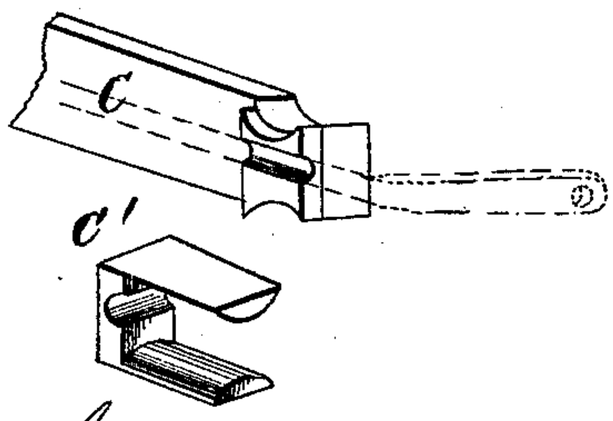


Fig. 2.

Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN COSTON, OF BOWDON, GEORGIA.

IMPROVEMENT IN SAW-FILING MACHINES.

Specification forming part of Letters Patent No. **210,299,** dated November 26, 1878; application file August 15, 1878.

To all whom it may concern:

Be it known that I, JOHN COSTON, of Bowdon, in the county of Carroll, and in the State of Georgia, have invented certain new and useful Improvements in Gin-Saw Sharpeners; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a machine for sharpening the teeth of cotton-gin saws, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of my machine. Fig. 2 is a side elevation of the same. Fig. 3 is a detailed view of a part thereof. Fig. 4 is a plan view of the frame with the top plate removed.

A represents a case or frame, open at both ends, with a bar, B, bent and nearly doubled on itself, pivoted near the back end of each side of the bottom of the frame, and clamped or held in place by means of set-screws *a a* passing through a suitable clamp-bar near the front end of the frame, and which serves to raise or lower the frame, so as to adapt the direction of the files to the pitch of the teeth in different saws, and which bar extends forward sufficiently far to reach a suitable rest in front of the saws.

The frame A, with the doubled bar B, forms the base of the machine, and it is applied to the gin for use just as the gin stands without removing it from the gin-frame, and by resting the base on the gin-brush or other parts of the gin-frame or any solid substance behind the gin, and the bent bar on the rest in front of the gin-saws; the bent or doubled bar includes about three saws between its branches, and they are all held steadily in place by means of a strap or belt passing over the bar and attached to a lever, which extends beneath the gin-frame, by which pressure is made on the machine to steady it while in use.

On the bottom of the frame A are placed suitable bearings C C, to carry the arms with the files, and these bearings are adjustable sidewise by means of set-screws *b*, placed in the side of the frame, and which may be used to press the files more heavily or lightly on the saws, or to give proper direction or angle to the files. They are also adjustable upward and downward by means of set-screws *d*, placed in the top of the frame, and the distance between the files may be changed to suit different-sized saw-teeth by the same screws.

The front end of each bearing rests on an elastic cushion, *e*, and the back end of the left-hand bearing rests on a similar cushion, e^1, which presses it up while the back end of the right-hand bearing is pressed downward by an elastic cushion, e^2, placed above it, and thus proper angle of the arms is preserved. These elastic cushions move the bearings in obedience to the set-screws, and between the bearings is placed another elastic cushion, e^3, which serves as a center pivot to the bearings, while at the same time it equalizes the pressure of the files on the saws.

The ends of the bearings C are provided with suitable boxes C′, and the bearings carry in said boxes two arms, D D, of suitable size and length, which cross each other toward the front end.

The point or front end of each arm forms a knob or lift, *f*, in the base of which is a sink or hole to receive the point of the file F, and from thence backward for the length of the file the arm is provided with a file-bed, D′. The back end of the file is held in place by a cuff, *h*, and at this point the arm makes an offset or bend by means of a lap-joint, so as to receive the back end of the file into a sink or bed between the two pieces of the arm, and held in place by the cuff *h*, so as to bring the edge of the file when in position nearly in line with the center of the arm. From this point back the arms D D are straight for a suitable length. They then bend to an angle toward each other and downward until they meet at a point below the level of the arms themselves, and by means of a pitman, I, passing through them at the back end of the frame, they are jointed or coupled together. The pitman I

then extends forward to near the front end of the frame, where it is pivoted to the extreme lower end of a lever, H. This lever works on a pivot above the level of the arms D, and just above this pivot on the back of the lever is a slide, G, held in place and regulated by a set-screw, *i*. To this slide is attached a double-pointed pawl, J, by straddling the lever and pivoted to the slide, the end of the pawl fitting over the teeth of the saw to be sharpened.

By this arrangement and attachment of the pawl it gives a sudden motion to the saws just as the files have done their work on the tooth and the lifts *f* on the ends of the arms have lifted the files out of the teeth, so as to pass the file to the next tooth without rubbing or filing on the side of the tooth. The length of this ratchet-motion is regulated to suit teeth of different sizes and conditions by raising or lowering the back end of the pawl by means of the slide G and set-screw *i*.

The length of the stroke of the files on the teeth is regulated to suit teeth of different conditions by means of stops L, placed on the floor or bottom of the machine, at the back end, and controlled by set-screws.

By moving or working the handle back and forward, with the pitman attached to it, the arms carrying the files are put in motion simultaneously, thereby moving the files across the saw-teeth. At the same time, by the peculiar coupling of the arms, they are rotated as they go forward, and thereby the file-edges are turned upward and pressed under the saw-tooth, so as to round it into proper shape, and with the same motion the pawl pushes forward the saw suddenly to the next tooth, for which one point of the pawl is usually sufficient; but on badly broken or abused saws the second point is necessary.

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

1. The combination of the frame A, adjustable bent bar B, and adjustable stops L L, whereby the length of the stroke of the files on the teeth is regulated to suit teeth of different conditions, as herein set forth.

2. The elastic cushions e e^1 e^2 e^3, interposed between the frame A and the bearings C C, with their adjusting-screws *b d*, as and for the purposes herein set forth.

3. The combination of the file-arms D D, having their rear ends bent inward, the pitman I, connecting the arms together, and the lever H, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of July, 1878.

JOHN COSTON.

Witnesses:

L. J. ADERHOLD,

JABEZ MILES.