2 Sheets—Sheet 1.

M. McP. BEARD.

GIN-SAW FILING-MACHINES.

No. 192,217. Patented June 19, 1877.

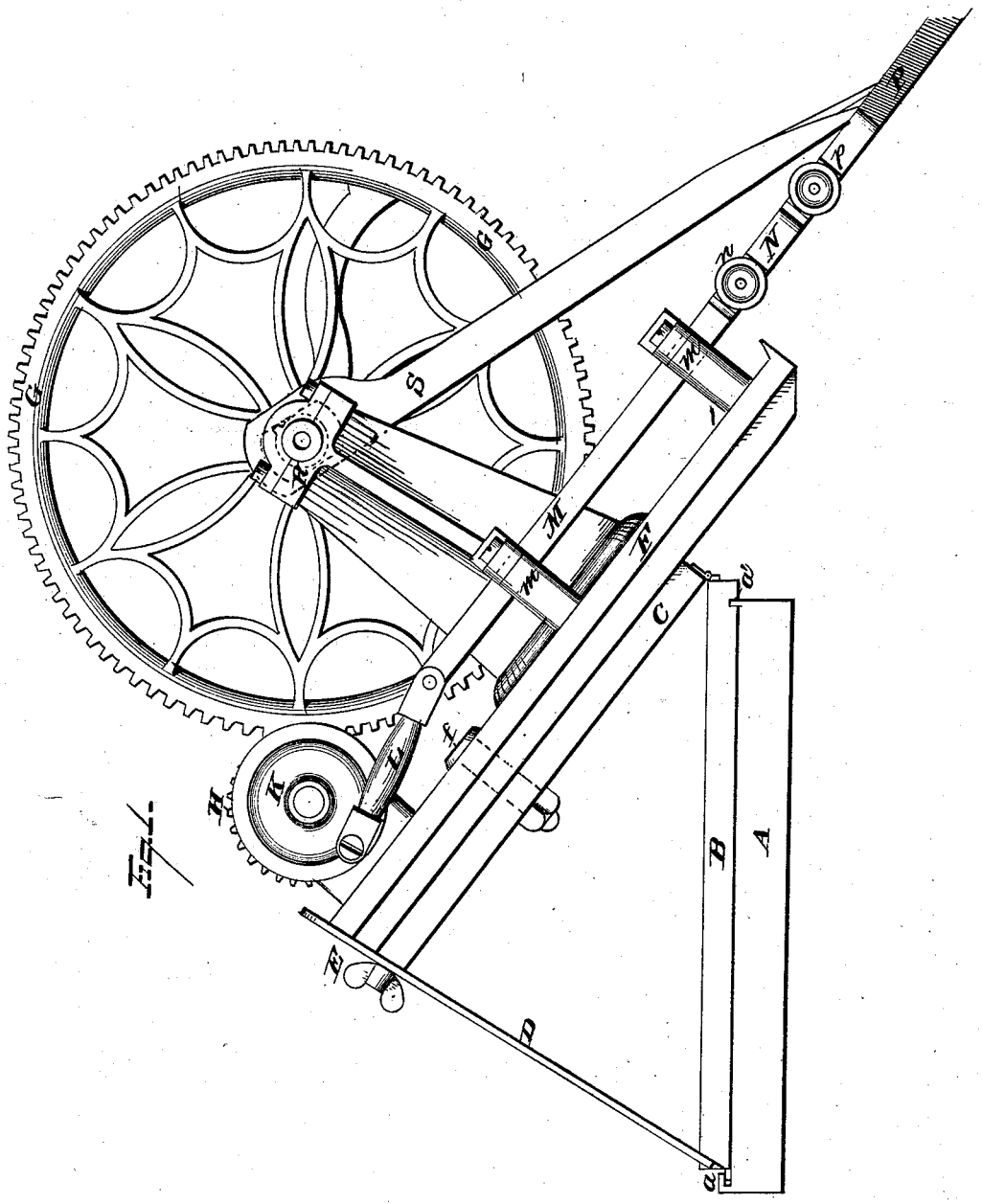

Fig. 1.

WITNESSES

Ed. L. Nottingham

A. M. Bright.

INVENTOR

Matthew McPherson Beard

By Legget and Legget.

ATTORNEYS

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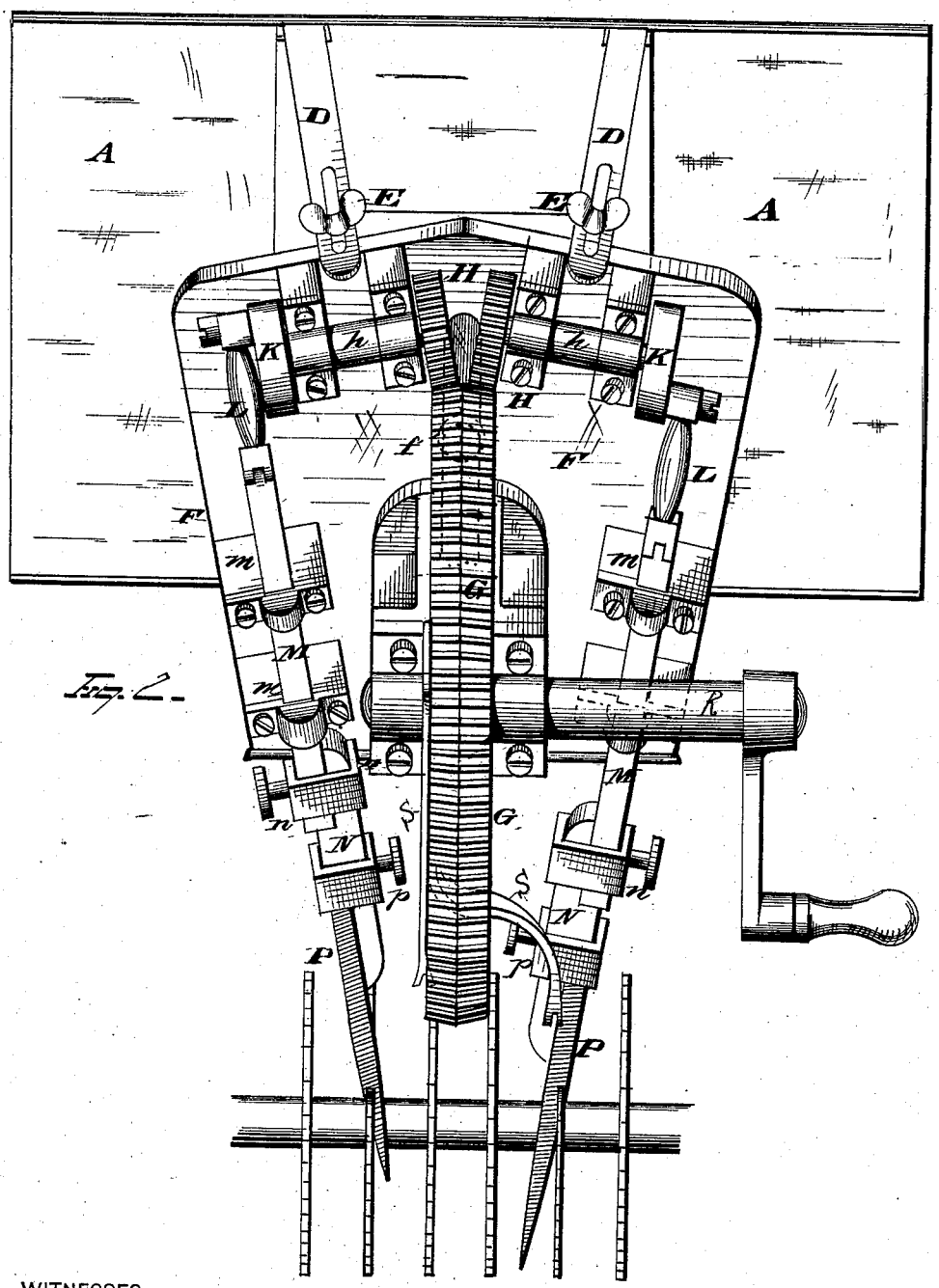

Fig. 2.

WITNESSES

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By Leggett and Leggett.

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UNITED STATES PATENT OFFICE.

MATTHEW McP. BEARD, OF CANTON, MISSISSIPPI.

IMPROVEMENT IN GIN-SAW-FILING MACHINES.

Specification forming part of Letters Patent No. **192,217**, dated June 19, 1877; application filed May 1, 1877.

To all whom it may concern:

Be it known that I, MATTHEW McP. BEARD, of Canton, in the county of Madison and State of Mississippi, have invented certain new and useful Improvements in Gin-Saw-Filing Machines; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in gin-saw-filing machines, and is designed to afford a device which can be readily secured to the stand of a cotton-gin, and sharpen the saw without removal from its operative position. The device is made of independent supporting parts which are adjustable relative to one another, and which permit of any degree of the angular inclination of the operating files, together with their actuating mechanism.

Referring to the drawings, Figure 1 is a view in side elevation of my sharpener in operation. Fig. 2 is a top or plan view of the same.

The parts of a gin-mill are removed, so as to allow the sharpener to be placed upon the gin-stand, immediately above the saw, and the supporting-board A is detachably secured to the stand with its front edge in horizontal line therewith. This supporting-board is made with an engaging-flange, *a*, overlapping a projection from the lower rear side of the piece B, while its front upper edge has a projection, *a'*, fitting into a groove in the lower front part of this piece B.

Hinged to the front edge of piece B is the adjustable piece C, which is maintained in any degree of inclination by the brace-rods D. Longitudinal slots in the body of these rods allow them, in connection with the screw-clamping mechanism E, to raise and lower the rear portion of part C, and thus determine the angle of inclination at which the machine may be desired to work. These two parts, B and C, form an angular supporting-frame, which, by its adjustment, allows the sharpener to be readily placed at any desired degree of inclination.

The metallic bed-plate F is secured upon this frame-work by means of a bolt, *f*, working in an elongated slot cut in the body of the bed-plate F, by which the latter can be moved up and down on the angular supporting-frame, and to or from the saw, as is suitable in the proper presentment of the files to their work.

The main actuating-gear G is journaled in bearings mounted upon the bed-plate F, and is operated by a hand-crank. Its working periphery has its cogs formed double-beveled, or inclining laterally to each side of its central vertical line; and thus the pinions H, one on each side of this central line of the wheel, while revolving in planes angular to that of their actuating gear-wheel, are yet allowed to mesh with the cogs of the latter. Each of spur-pinions H is journaled on its distinct shaft *h*, which revolves in bearings, preferably cast solid with the bed-plate, and their outer ends have secured to them the crank-disks K. These latter operate by wrist-pins, the pitmans L, which themselves give a reciprocating movement to the file-rods M, working in guide-bearings *m*, also preferably cast with the bed-plate.

The file-holders N are detachably secured to the rods M by adjustable clamp mechanism *n*, so that they may be held at different points on the rods. Their opposite ends secure the files or shanks of the files P to them by means of similar clamping mechanism *p*, and thus the files may be readily adjusted right-angularly to the length of the saw-cylinder. The shaft R is made with a cam working in a slot cut in the saw-feeder S, and thus at each revolution of the driving-wheel the feeder turns the saw the distance of an interdental space on the saw. The engaging extremities of the bifurcated or double-armed feeder are made with claws which fit over respective teeth of the saw and rotate the latter in the operation of the machine.

At each revolution of the main gear G the feeder-bar S causes a new set of teeth to be presented to the sharpening action of the files, as the latter are swiftly reciprocated under the quicker revolutions of the small gears H. Any desired degree of difference between the times of the complete revolution of these small pinions H and that of the gear G may be easily

obtained by making the radius of each relatively proportioned for the slower or quicker actuation of the files, and thus the latter are caused to operate upon each set of teeth as desired.

By means of the clamps securing the file-holders to their actuating-rods the files may of themselves be regulated in their distance relative to the saw, while by means of the elongated slot in the bed-plate, and the clamping-bolt *j*, the entire working parts of the machine may collectively be adjusted at right angles to the length of the circular saw.

The adjustable supporting-frame permits the bed-plate, together with all its operative mechanism, to be placed at any desired degree of inclination in a vertical plane, and thus allow the files to be presented at the proper angle for the teeth of each individual saw. The diagonal position of the small spur-gears H and the file-rods M cause the files to suitably present themselves in the diagonal line of direction relative to the teeth, as is required in sharpening the latter.

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

1. The combination with the supporting-frame, adjustable in a vertical plane, of the bed-plate secured thereon, and adapted to be held at different distances to and from the saw, substantially as described.

2. The combination, with the main actuating gear-wheel provided with the double-beveled cogs, of the pinions engaging therewith at right angles, respectively, with the bevels of the cogs, and revolving in planes diagonally intersecting that of the said main gear, substantially as described.

3. The combination, with the angularly-adjustable supporting-frame, of the independent adjustable metallic bed-plate, the latter having bearings for the pinion gears, and file-rods cast in the same piece therewith, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of April, 1877.

MATTHEW McPHERSON BEARD.

Witnesses:
W. M. REID, Jr.,
G. W. THOMAS.