E. L. HARRIS.
Gin-Saw Filer.

No. 203,338. Patented May 7, 1878.

Fig. 1

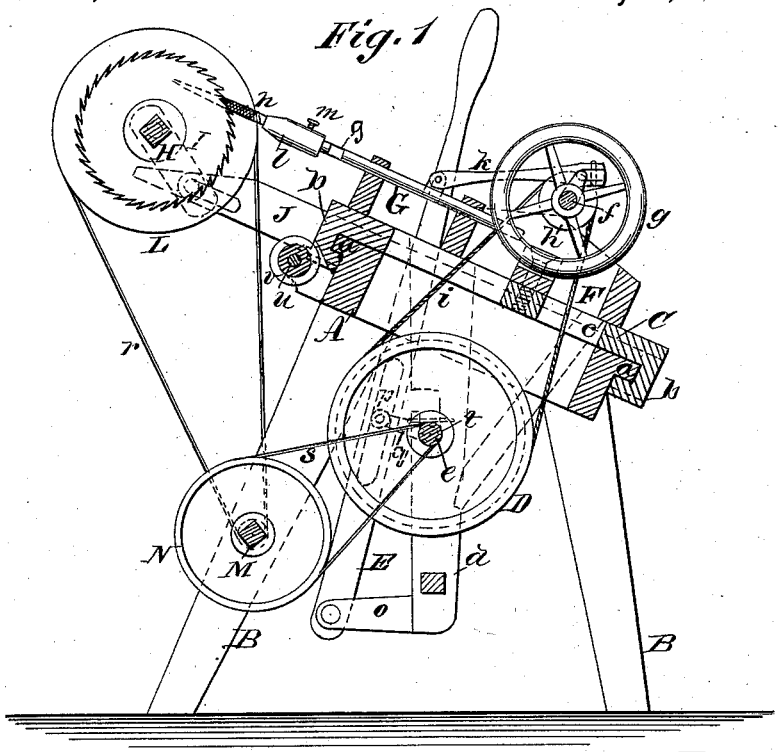
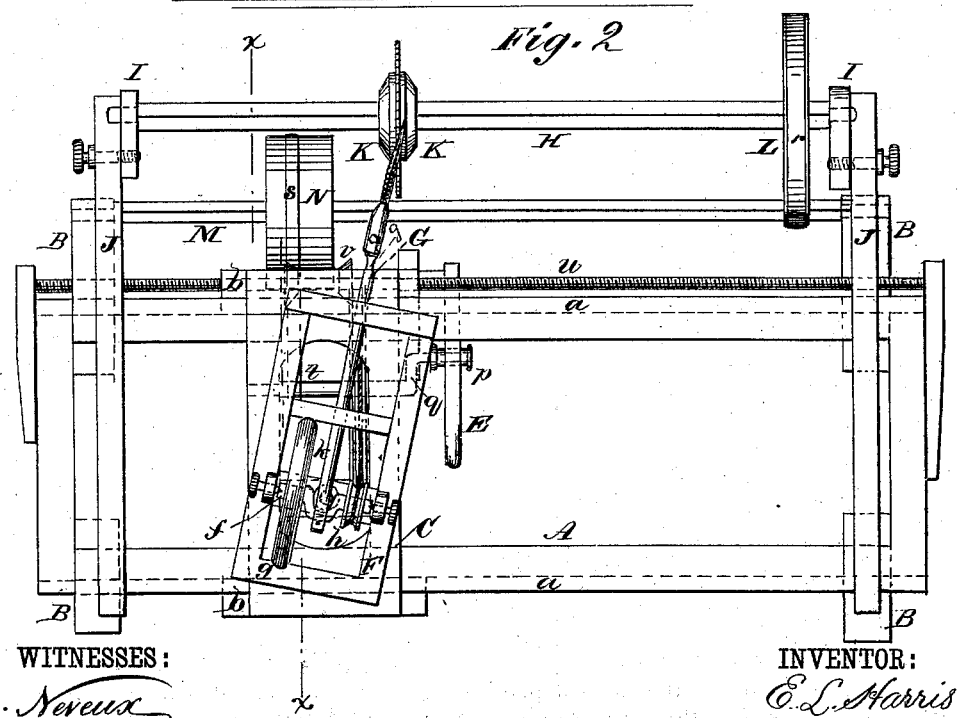


Fig. 2



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD L. HARRIS, OF RED BANKS, MISSISSIPPI.

IMPROVEMENT IN GIN-SAW FILERS.

Specification forming part of Letters Patent No. **203,338**, dated May 7, 1878; application filed January 5, 1878.

To all whom it may concern:

Be it known that I, EDWARD L. HARRIS, of Red Banks, in the county of Marshall and State of Mississippi, have invented a new and Improved Gin-Saw Sharpener, of which the following is a specification:

Figure 1 is a transverse vertical section taken on line *x x* in Fig. 2. Fig. 2 is a plan view.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

In the drawing, A is an oblong rectangular frame supported by legs B in an inclined position, one of the long sides of the frame being higher than the other. This frame is provided with flanges *a* for receiving the guides *b* of the carriage C, which supports the file-carrying mechanism.

The carriage C consists of a bed, *c*, from which two arms, *d*, project downward for supporting the shaft *e* of the drive-wheel D and the lever E, by which the said drive-wheel is operated.

To the carriage C a frame, F, is pivoted so as to swing in a plane parallel to the top of the frame A. In the frame F a crank-shaft, *f*, is journaled, which is provided with a fly-wheel, *g*, for maintaining a uniform motion, and a pulley, *h*, for receiving a belt, *i*, which is carried by the drive-wheel D. A bar, G, is placed in guides formed in the cross-bars of the frame F, and is connected with the crank of the shaft *f* by a pitman, *k*. A file-holder, *l*, is fitted to the outer and upper end of the bar G, and is secured by a set-screw, *m*. Near the file-holder *l* the bar G is flattened at *g'*, so as to form a spring which has sufficient strength to hold the file to its work. The file *n* is driven into the outer end of the file-holder, and when it becomes worn on one side it is turned by turning the file-holder on the bar G.

The lever E, by which the machine is operated, is pivoted to an arm, *o*, that is attached to one of the arms *d*, and is slotted to receive a roller, *p*, placed on the crank *q* of the shaft *e*. The drive-wheel D is rotated by oscillating the lever E.

A shaft, H, is journaled in arms I that are clamped to the projecting ends of cross-pieces J, that are secured to the top of the frame A. Upon this shaft collars K are placed, between which the saw to be sharpened is clamped.

A pulley, L, is secured to one end of the shaft H, and takes its motion by a belt, *r*, from the shaft M, which is journaled in the forward legs of the frame. The shaft M is round at the end that receives the belt, and the remaining portion is square. Upon the square portion of the shaft a drum, N, is loosely placed for receiving a belt, S, from a pulley, *t*, on the shaft *e*.

A feed-screw, *u*, is supported in front of the frame A, and upon it a nut, *v*, is placed, which is fitted to a recess in the front of the carriage C. By turning this nut the carriage is moved on the bed.

The operation of the machine is as follows: A saw being placed upon the shaft H, and secured between the collars K, and the file *n* being adjusted at the proper angle by moving the carriage C on the frame A and swinging the frame F on the carriage, the wheel D is rotated by oscillating the lever E, and the file is rapidly reciprocated. At the same time the saw is slowly rotated by the connection of the shaft H with the drive-shaft *e*. The file will work between two of the teeth until the force that drives the shaft H overcomes the resistance of the file and one of the saw-teeth slips by the file, when the file works between it and the next tooth, and so on until one side of the saw is filed, when the file is readjusted and the opposite side is filed.

The angle of the teeth may be varied by raising or lowering both ends of the shaft H, and by adjusting the carriage C and frame F.

The file-carrying bar G is made thin, forming a spring of only sufficient strength to hold the file to its work.

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

A gin-saw sharpener having a carriage, C, that supports the drive-wheel shaft and lever E in two downwardly-projecting arms, as shown and described.

EDWARD LEONIDAS HARRIS.

Witnesses:
H. W. BERKLY,
A. E. CROOK.