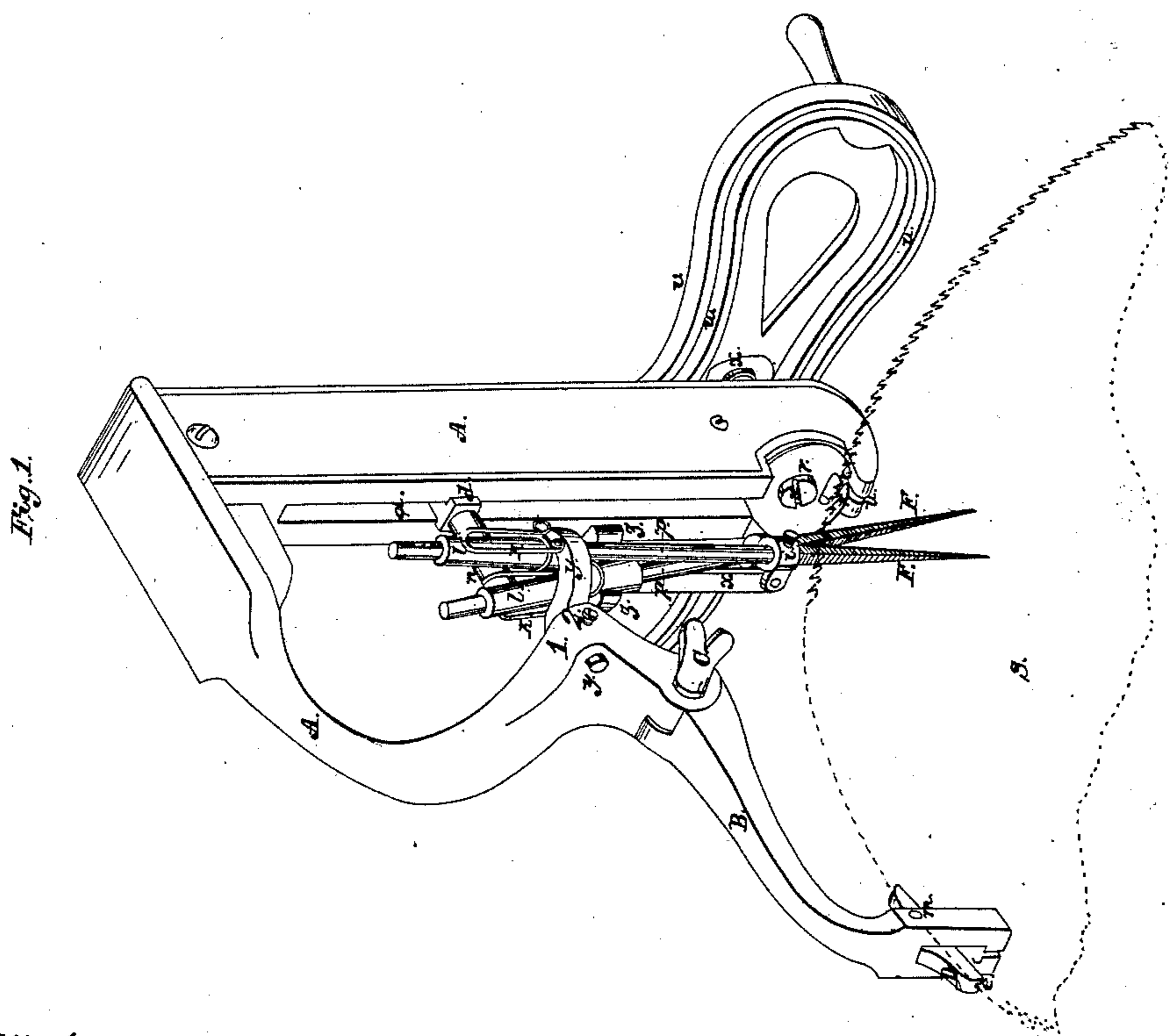
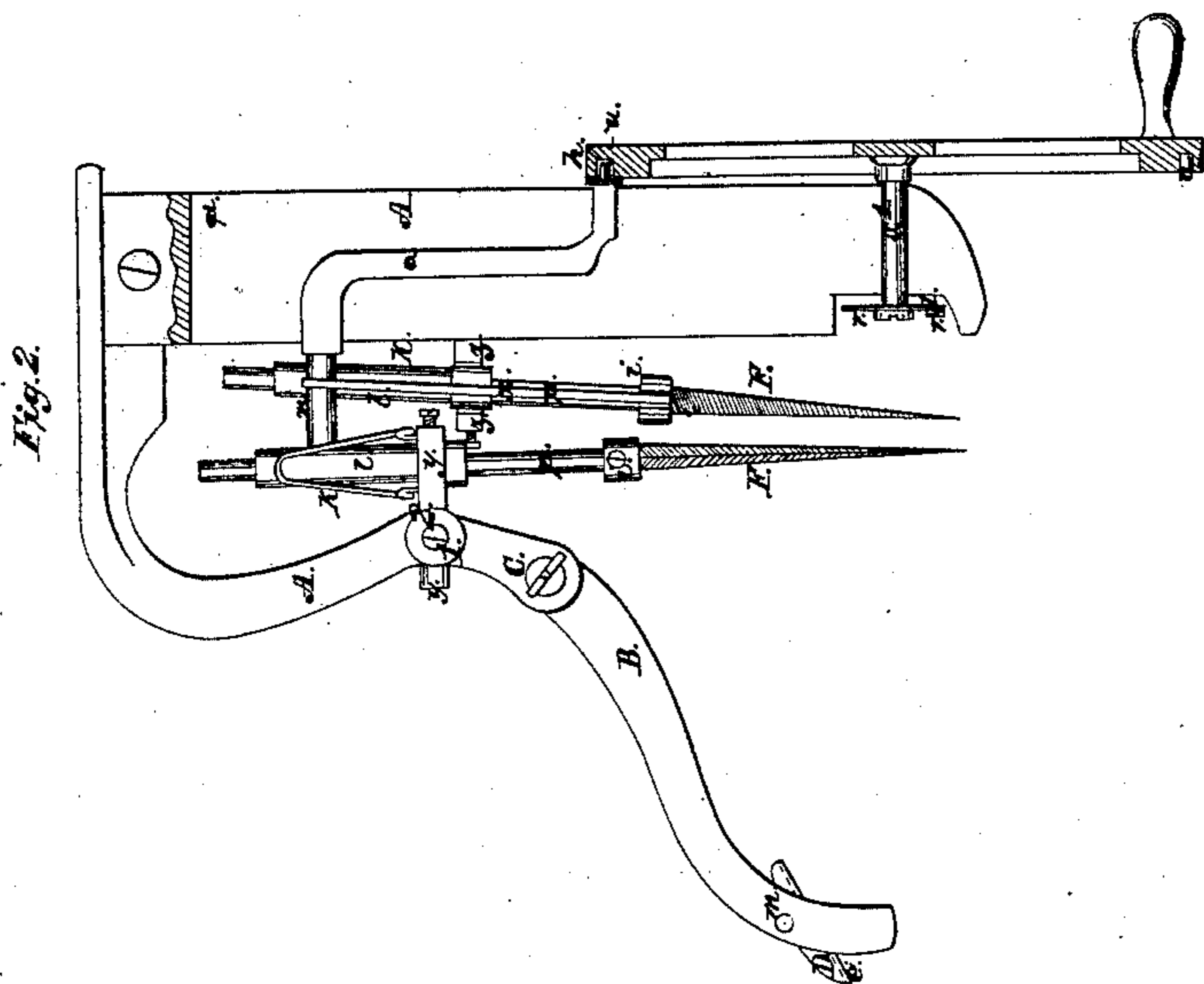


*A. H. Burdine,*

*Sharpening Reciprocating Saws.*

*N<sup>o</sup> 24,790.*

*Patented July 19, 1859.*



*Attest:*

*R. W. Fennick*  
*G. Carlo Clerk*

*Inventor:*

*A. H. Burdine*

# UNITED STATES PATENT OFFICE.

A. H. BURDINE, OF CHULAHOMA, MISSISSIPPI.

## IMPROVED COTTON-GIN SHARPENER.

Specification forming part of Letters Patent No. 24,790, dated July 19, 1859.

*To all whom it may concern:*

Be it known that I, A. H. BURDINE, of Chulahoma, in the county of Marshall and State of Mississippi, have invented a new and useful Improvement in Machines for Sharpening the Saws of Cotton-Gins; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of the machine, the gin-saw being shown in red. Fig. 2 is a longitudinal transverse section of the machine.

Similar letters of reference in each of the several figures indicate corresponding parts.

The nature of my invention consists, first, in the combination of two crossed reciprocating files with a circular feeding-disk, which is constructed with an angular recess and an inclined hook at one point of its circumference, whereby an exceedingly simple gin-sharpener can be made which is capable of feeding and filing the saw, and is operated by a single crank, as hereinafter described. It consists, second, in the combination, with the above, of a jointed slotted frame and a driving-cam, substantially as described, whereby the machine is rendered more convenient for use in filing saws attached to the gin.

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 of the machine, to which is hinged the arm B, by means of a bolt C, having a nut on one end of its extremities. By this arrangement the arm B may be raised or lowered, so that it may be adjusted to embrace a saw of any diameter, and the arm may be made rigid after its adjustment by screwing up the nut or female screw on the bolt C. An opening is made in the extremity of the arm B and a stop-lever D is hung in said opening by the bolt *m*. The lever has a groove *e* on its face for the reception of the saw. At the extremity of the lower part of the frame A there is a similar groove *v*, in which the saw to be sharpened is likewise inserted. (See Fig. 1.)

F F are the files, which are made to cross each other and embrace the saw. They are inserted in the file-stocks *p p* and held firmly

in position by set-screws passing through the heads *i i* and bearing against the files. The file-stocks are supported in adjustable brackets *y z* and move in sleeves *l l*, which are attached to said brackets by fulcrum-screws or other equivalent means. Springs *k k* are likewise attached to the brackets *y z* and bear against the sleeves for the purpose of maintaining a yielding pressure of the files against the saw-teeth as the former move backward and forward in sharpening said teeth. The brackets are made adjustable in the path of a vertical circle in bearing-ears 1 of the frame, so that the springs may be caused to exert more or less tension on the files, set-screws 2 serving to hold the brackets steady after the adjustment thereof is effected. Thus having the brackets adjustable also adapts the machine to thick and thin saws.

To the heads *i i* of the file-stocks arms *x x* are hinged, and the opposite extremities of said arms are hinged to the shaft *n*, which has a reciprocating motion in the slot *a* of the frame A. The shaft *n* is supported in the slot *a* by the head *d*.

U is a cam operated by a crank, by means of which a reciprocating motion is given to the files. The cam revolves on the shaft *x'*, to which is attached at its inner extremity the hooked recessed disk *r r*. The hoof of this disk projects beyond the face of the disk and forms an inclined plane, and as it passes between the teeth causes a slow revolution of the gin-saw, and thus allows the files to pass back and forth over each tooth before the saw is again fed. The shaft *n* has an angular extension O, on which is formed at its lower extremity a pin *h*, which works in the groove *u* of the cam U, and thus imparts a reciprocating motion to the files when the crank is operated.

The machine is usually applied to the gin-saws without the necessity of removing them from the saw-shaft, the latter being made to revolve by the hooked eccentric *r r'*, so that each tooth is passed over by the files both in their backward and forward motion.

It will be observed that as the files are crossed and one stands in advance of the other the opposite sides of the tooth are filed at different stages of the operation, and when finished appear beveled from the root to the

point on both sides. It will also be observed that the groove *u* of the cam is shaped so as to give two complete back and forward strokes to the file for every revolution of the cam on its axis, and thus each tooth has two strokes of the file before it is allowed to pass from the hook of the eccentric.

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

1. The combination of two crossed reciprocating files *F F* with a circular feeding-disk *r*, which is constructed with an angular recess and an inclined hook *r'* at one point of

its circumference, substantially as and for the purposes set forth.

2. The combination of the above with a jointed slotted frame and a driving-cam, substantially as and for the purposes set forth.

The above specification of my improvement in cotton-gin sharpeners signed and witnessed this 15th day of June, 1859.

A. H. BURDINE.

Witnesses:

R. W. FENWICK,  
THOMAS C. DONN.