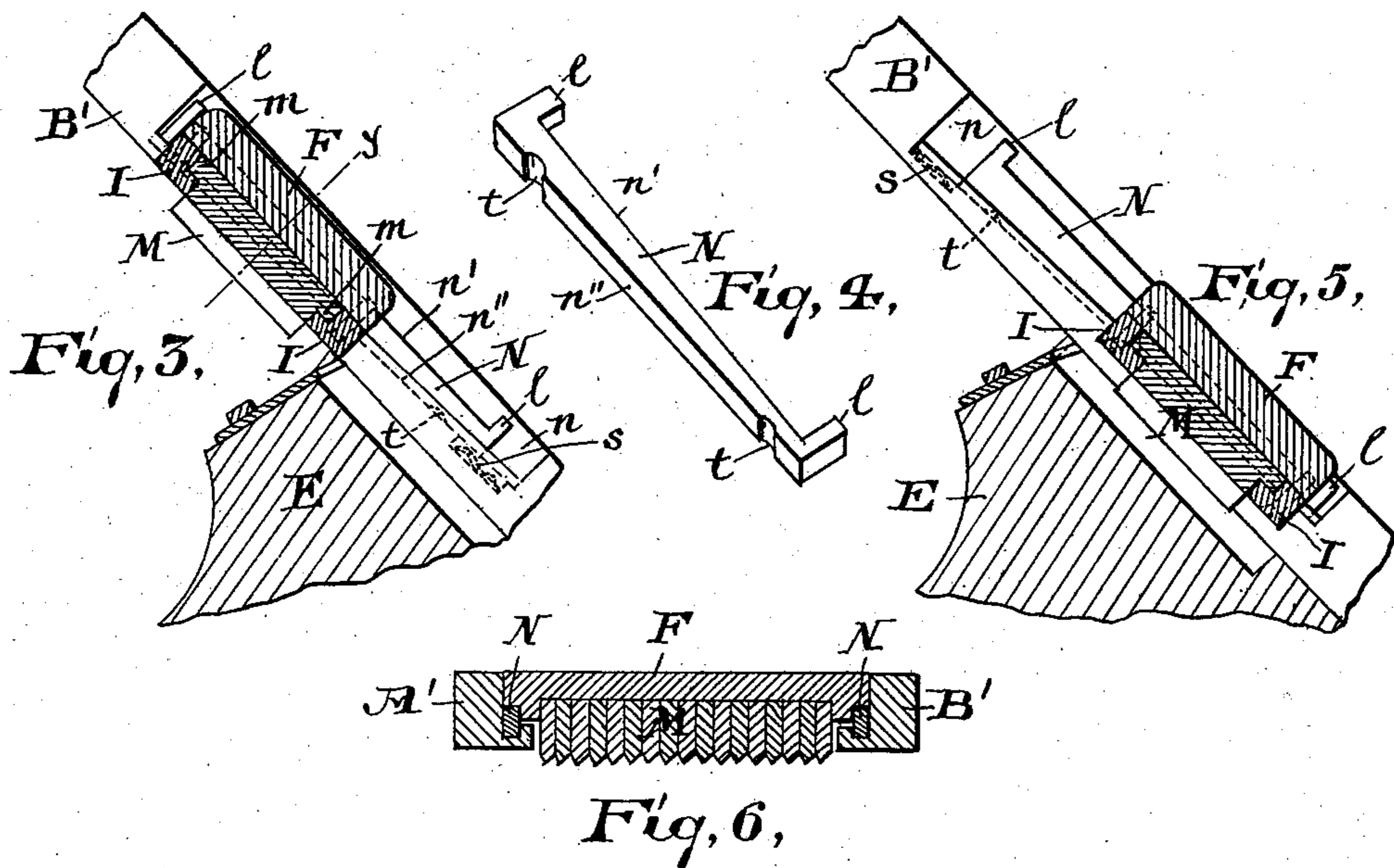
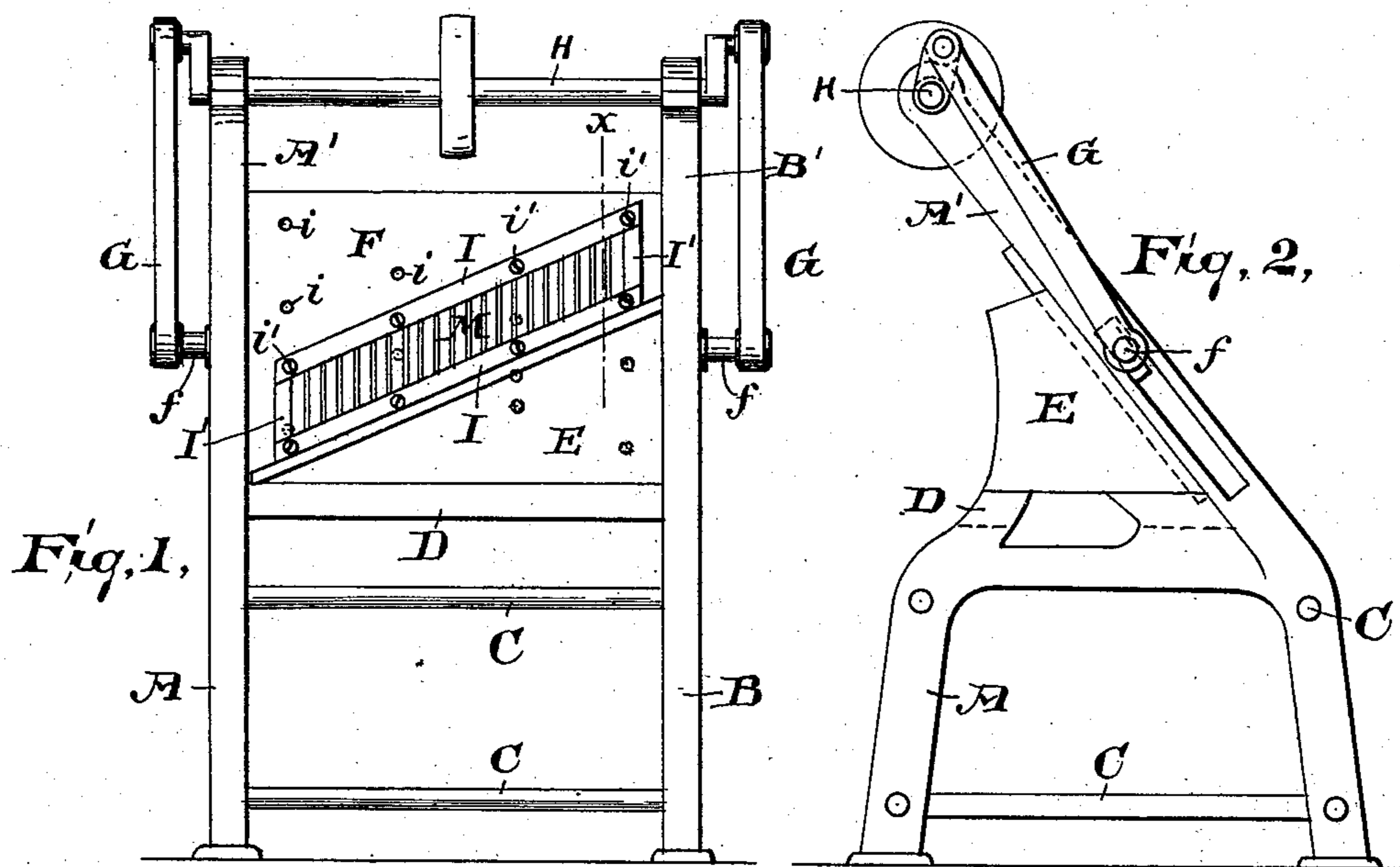


(No Model.)

R. R. COURSEN.  
SAW FILING MACHINE.

No. 567,296.

Patented Sept. 8, 1896.



Witnesses  
Robert Sallenger  
Beatrice Charles.

Inventor,  
Robert R. Coursen.

By Drake & Co. Atty's.

# UNITED STATES PATENT OFFICE.

ROBERT R. COURSEN, OF NEWARK, NEW JERSEY.

## SAW-FILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 567,296, dated September 8, 1896.

Application filed May 31, 1895. Serial No. 551,236. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT R. COURSEN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to file a large number of or all the teeth throughout the length of a saw simultaneously, to secure uniformity or evenness in the filing of the teeth, to save time and expense, and to secure other advantages hereinafter referred to.

The invention consists in the improved saw-filing machine and in the arrangement and combination of the parts thereof, as hereinafter set forth and finally pointed out in the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate corresponding parts in each of the figures where they occur, Figure 1 represents in front elevation a saw-filing machine embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a section taken through line *x* of Fig. 1. Fig. 4 shows a certain carrier and guide in perspective. Fig. 5 is a sectional view similar to the one illustrated in Fig. 3, but showing the file-carrier in a different position; and Fig. 6 is a section taken through line *y* of Fig. 3.

In carrying out my invention I construct a substantial iron frame A B having arms A' B' extending from the frame-pieces A B upward at an angle of forty-five degrees, more or less.

C designates cross bars or braces for the frame work A B, and D is a rectangular plate extending all the way across between said frame-pieces A B and firmly secured or cast to the latter. Said plate D serves as a support for the interchangeable saw-rests E, which are triangular in their general outline, but of different longitudinal inclination, whereby the filing of the saw-teeth to a uni-

form level is effected, as will be understood upon reference to Fig. 1. Between the above-mentioned arms A' B' is mounted the file-holder or carrier F, which connects by means of stems *f* with pitmen G, which are eccentrically mounted upon and operated by a shaft H, mounted in suitable bearings or boxes near the outer extremities of said arms A' B', Figs. 1 and 2, the shaft H being driven by belt or otherwise. Upon said carrier are screw-holes *i*, arranged diagonally across the same, and angle-bars I are screwed upon said carrier parallel to each other and to the saw-rest E. End pieces I', held in place by means of screws *i'*, form with the angle-bars I a solid casing or receptacle for the files M, which engage with their flanges *m* with said angle-bars, and are easily inserted or removed by removing one of the end pieces I', as will be obvious. It will be seen from the foregoing that a separate set of saw-rests E, angle-bars I, and end pieces I' are required accordingly to effect each different bevel given to the cutting-edge of the saw-teeth, as well as interchangeable files corresponding in size and shape with the saw-teeth to be filed.

In order to clear the files from the saw-teeth during the upward movement of the carrier F, carrier-guides N, upon which said carrier rests by gravity and which work in grooves *n* in the arms A' B', are provided. Said grooves *n* are arranged diagonally in said arms and are somewhat larger than the carrier-guides N, thus allowing of a sliding movement of the latter in said grooves *n*. The carrier F rests and slides upon the surface *n'* of the guides N, which surface is parallel to the file edge, while the surface *n''* of the guide N is parallel with the diagonal groove *n* in which said guide works. Projections *l*, formed upon opposite ends of said guides N and projecting upward between the arms A' B', engage with the carrier F near the end of its upward and downward movement, respectively, thus forcing the guide N to slide a given distance diagonally up or down in the arms A' B', determining the relative position of the files to the saw-teeth, as will be readily understood upon reference to Figs. 3 and 5. Springs *s* engage alternately with notches *t* in the carrier-guides N, preventing the latter from traveling at undue

time, which might otherwise occur by too great frictional contact of the carrier with said guides. The saw can be held securely upon the saw-rest by hand or by any means common in mechanics.

Having thus described the invention, what I claim, and wish to secure by Letters Patent of the United States, is—

1. In a saw-filing machine, the combination, with a frame, of a file-carrier thereon, the face of which is provided with a series of diagonally-arranged holes therein, screws in the holes, bars and end pieces removably secured to the carrier by means of said holes and screws, removable files between said bars and end pieces, a removable saw-rest in front of the carrier, the upper surface of which is inclined, whereby the inclination of the rest and the bars upon the carrier may correspond with each other, and means for moving the carrier, substantially as set forth.

2. In a saw-filing machine, the combination, with a frame, provided with a plate and inclined slotted arms, of a saw-rest removably secured to the plate, the upper surface of which is inclined; a file-carrier between the arms, stems on the carrier through said slots, bars and end pieces removably secured to the carrier, a crank-shaft mounted in the arms, a pitman engaging each end of the crank-shaft with one of the stems for reciprocating the carrier, substantially as set forth.

3. In a saw-filing machine, the combination, with a frame, provided with arms, each arm being provided with a diagonally-arranged groove, of a guide in each groove, the under surface of which is inclined, and the upper surface is provided with a stop at each end, said guide being of a less length than the groove, a carrier upon the guide adapted to engage with the stops, a series of files secured to the carrier, a saw-rest in front of the files, and means for moving the carrier and files, substantially as set forth.

4. In a saw-filing machine, the combination, with a frame, provided with two arms, each arm being provided with a diagonally-arranged groove, of a spring in each end of the groove, a guide in each groove, of a less length than the groove, the under surface of which is inclined and provided with a recess to engage with the springs, and the upper surface is provided with a stop at each end, a carrier upon the guides, a series of files removably secured to the carrier, a saw-rest in front of the files and means for moving the carrier and files, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of May, 1895.

ROBERT R. COURSEN.

Witnesses:

OLIVER DRAKE,

ROBERT SALLBERGER.