

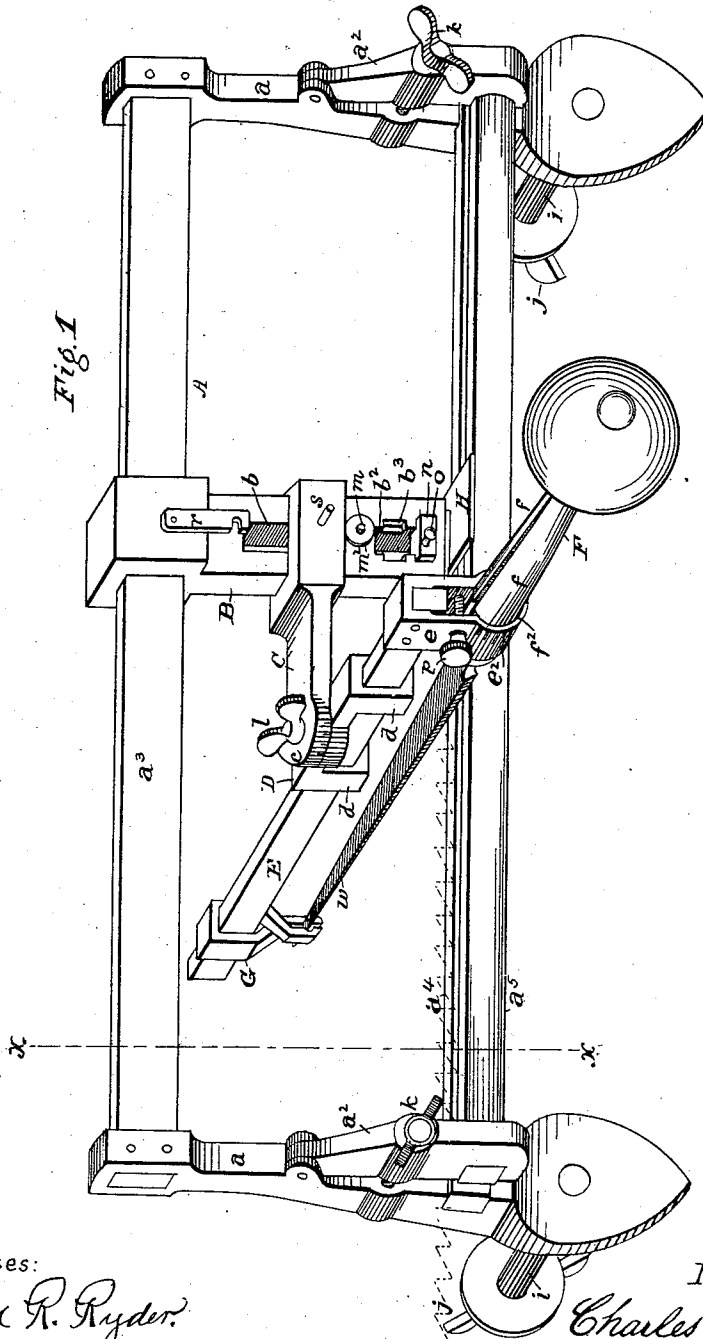
(No Model.)

2 Sheets—Sheet 1.

C. G. MITCHELL.
SAW FILING APPARATUS.

No. 566,003.

Patented Aug. 18, 1896.



Witnesses:

John R. Ryder.
Sonn Printers

Inventor:

Charles G. Mitchell
by *C. M. Force*
Attorney.

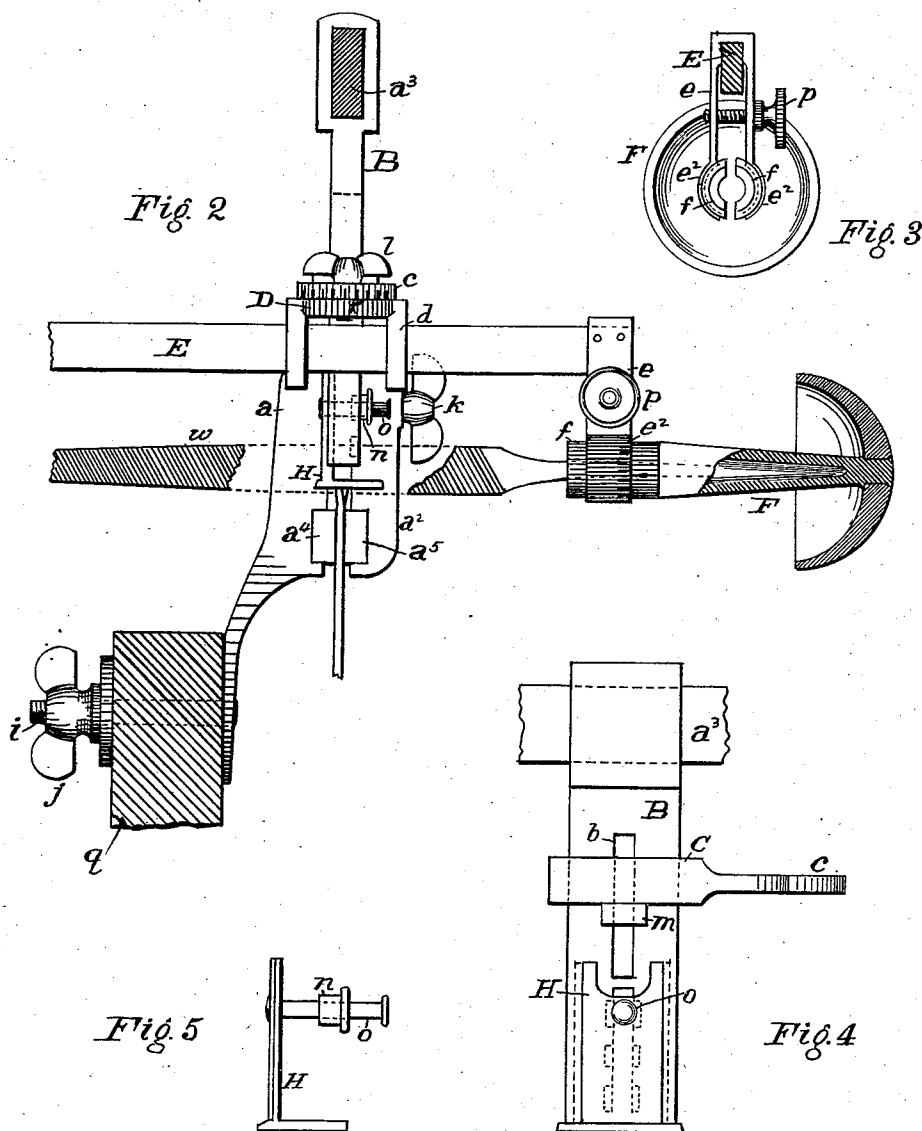
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2 Sheets—Sheet 2.

C. G. MITCHELL.
SAW FILING APPARATUS.

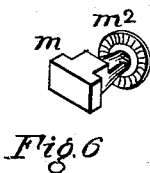
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Saw Filer



Inventor:

Charles G. Mitchell
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UNITED STATES PATENT OFFICE.

CHARLES G. MITCHELL, OF PITTSBURG, PENNSYLVANIA.

SAW-FILING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 566,003, dated August 18, 1896.

Application filed December 4, 1895. Serial No. 571,004. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. MITCHELL, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Saw-Filing Apparatus; 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.

My invention consists in an improved construction of apparatus for filing the teeth of saws, the object of the invention being to secure increased efficiency and greater accuracy in operation, which are secured by means of the novel features of construction, combination, and arrangement hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 represents in perspective view my improved saw-filing device, the position of the saw to be filed being indicated by dotted lines. Fig. 2 is a partial vertical section taken on the line *xx* of Fig. 1 and showing in elevation the file-carrier and its guide. Figs. 3, 4, 5, and 6 are detail views showing more clearly the construction of the several parts.

The device comprises, essentially, a frame for clamping the saw, an arm traveling thereon and supporting the filing mechanism, a vertically-movable arm carrying the adjustable file-guide, and an adjustable file-carrier sliding in the file-guide.

A is the saw-clamping frame, which comprises the following parts, viz: bars *aa*, which at their upper ends are rigidly secured to a bar *a*³, on which slides snugly but easily the supporting-arm B; fingers *a*², pivoted to the arms *a* and provided with clamping-screws *k*, and bars *a*⁴ *a*⁵, which are rigidly affixed to the bars *a* and *a*², respectively, and firmly embrace the saw-blade near its toothed edge when the frame is clamped thereon. The arms *a* extend below the cross-bar *a*⁴ and are provided at their lower end with bolts *i* and thumb-nuts *j*, by means of which the frame A is secured to a suitable support, such as a board *g*, which can be fixed in a vise or in any other suitable manner in a convenient position.

The supporting-arm B is provided with slots

*bb*², which extend through the same. Through the slot *b* is passed a headed bolt M, having its shank *m* fitting the slot, and upon which bolt is threaded a thumb-nut *m*², by means of which the bolt is clamped at any point in the slot *b*. The slot *b*² has seats *b*³ formed at intervals, and through this slot is passed a short stud or pin *o*, headed at each end, and which passes also through the sliding gage H and through a stud *n*, which fits the seats *b*³.

The vertically-movable arm C, which carries the file-guide D, is fitted upon the supporting-arm B and slides easily thereon, its downward movement being arrested by the head of the bolt M, as seen in Fig. 2. At its free end the arm C is formed with a partly-circular portion *c*, graduated, as shown, to enable the angle of the file-carrier to the frame A, and consequently to the saw, to be exactly regulated. The file-guide D has the depending slotted ears or lugs *d d*, and a thumb-screw *l*, which passes through the arm C and is threaded into the guide D, serves to clamp the guide D to the arm in any desired position. A central mark on the guide D serves to indicate the angle at which the guide is set, as seen in Figs. 1 and 2, or vice versa.

The file-carrier consists of the guide-bar E, which slides smoothly in the slotted lugs of the guide D and which carries at one end the clip G to receive the point or tip of the file and at the other the handle F, in which is clamped the tang of the file. The handle F is split at its inner end, and the jaws *ff*, which are hollowed to receive the file, are externally recessed at *f*², so as to receive the curved jaws *e*² of the clamp *e*, which is rigidly secured to the bar E and provided with a binding-screw *p*, by which the clamp *e* is clamped upon the handle F and the jaws *ff* simultaneously clamped upon the file *w*. One or both of the jaws *e*² is graduated, and a mark on one of the jaws *f*, or vice versa, indicates the angle of the file-face to the saw edge and regulates and governs the pitch of the saw-teeth.

The gage H is secured to the back of arm B by the pin *o* or by being seated in a dovetail groove in the arm B and has its toe *h* projecting over the saw, as seen in Fig. 2. At the top of arm B is pivoted a latch *r*, which

engages the pin *s* on arm *C* when the latter is raised and holds it suspended when desired.

In filing a saw the frame *A* is secured to the board *g*, which is fixed in place, the arm *B* is slid to the end of the frame, and the gage *H* is lowered to the proper depth and secured in place by setting the stud *n* in one of the slots *b*³. The saw, having been "jointed" or had the points of its teeth filed to a line, is placed between the bars *a*⁴ *a*⁵, with teeth touching gage *H*, and that end of frame is clamped. Arm *B* is then slid to the other end of frame, the saw raised until its teeth touch gage *H*, and that end clamped. The clamp is now precisely parallel to the edge of the saw, and the gage *H* is raised out of contact with the saw and held so by inserting the stud *n* in the upper notch or seat *b*³. The file is inserted into handle *F*, and clip *G* set to proper angle to give pitch desired and clamped fast by screw *p*, the file-guide is set at proper angle across saw and clamped by screw *l*, bolt *M* is clamped at the proper point to give desired depth of teeth, and the filing is proceeded with. Usually the first tooth is filed to the proper depth, and the bolt *M* then set, which secures the remaining teeth being filed to the same depth. After the teeth of one side are filed the saw is reversed end for end, and by means of the graduation on arm *c* the file-guide can be set to give exactly the same angle to the teeth of both sides—a condition which is essential to the best results in sawing.

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

1. In a saw-filing device the combination of the supporting-frame provided with clamping-screws for attaching it to a rigid support and having pivoted thereto a frame adapted to clamp the saw, the supporting-arm sliding on the top bar of said supporting-frame and carrying a vertically-sliding guide-arm extending lengthwise of the saw, a swiveling file-guide carried by said guide-arm and means for clamping the same thereto at any angle, a file-carrier sliding in the file-guide and having at one end a spring-clip and at the other a clamping-handle for holding the file and means for setting the same at any pitch, a vertically-adjustable stop on the supporting-arm for limiting the movement of the guide-arm, and an adjustable gage sliding on said supporting-arm and means for setting the same at definite points, substantially as described.

2. In a saw-filing device the combination of the rectangular frame adapted to be attached to a rigid support and having pivoted thereto a frame adapted to clamp and hold the saw, a depending arm sliding on the top bar of said supporting-frame and carrying a vertically-sliding guide-arm extending lengthwise of the saw, an adjustable stop sliding in the depending arm for limiting the movement of the guide-arm, a swiveling file-guide carried by

said guide-arm and means for clamping the same thereto at any angle, a file-carrier sliding in the file-guide and having at one end a spring-clip and at the other a clamping-handle for holding the file and an index for setting the same at any pitch, and an adjustable gage sliding on said supporting-arm and having a stud seating in notches on said arm, substantially as described.

3. In a saw-filing device the combination of the rectangular frame adapted to be attached by its end bars to a rigid support and having pivoted thereto a frame adapted to clamp and hold the saw, a slotted depending arm sliding on the top bar of said supporting-frame and carrying a vertically-sliding guide-arm extending lengthwise of the saw, an adjustable clamping-stop sliding in the slot of the depending arm for limiting the movement of the guide-arm, a swiveling file-guide carried by said guide-arm and means for clamping the same thereto at any angle, a file-carrier sliding in the file-guide and having at one end a spring-clip for the file-point and at the other a clamping-handle for holding the file and an index for setting the same at any pitch, and a vertically-adjustable gage sliding on said supporting-arm and having a stud seating in notches on said arm, substantially as described.

4. In a saw-filing device the combination of the supporting-frame having its end bars extended and provided with clamping-screws and having pivoted thereto a clamping-frame whose lower bar corresponds with the lower bar of the main frame and is appressed thereto by binding-screws for rigidly holding the saw, a slotted depending arm sliding on the top bar of the main frame and carrying an adjustable sliding gage for setting the edge of the saw, a lengthwise-extending guide-arm sliding on the depending arm and having pivoted thereto a file-guide, a clamping-screw for setting the file-guide at any angle to the saw, an adjustable clamping-stop seating in the slot of the depending arm for limiting the play of the guide-arm, a file-carrier comprising a bar sliding in the file-guide and having at one end a sliding spring-clamp for the point of the file and at the other a clamping-handle for holding the tang of the file and an index for setting the file to any pitch, substantially as described.

5. The combination with the saw-clamping frame and file-carrier, of the slotted supporting-arm *B*, the gage sliding thereon, and the stud *n* fitting the seats in the slot of said arm and sliding on a pin attached to said gage, substantially as described.

In testimony whereof I hereto affix my signature in presence of two witnesses.

CHARLES G. MITCHELL.

Witnesses:

WM. G. TAYLOR,
JOHN R. RYDER.