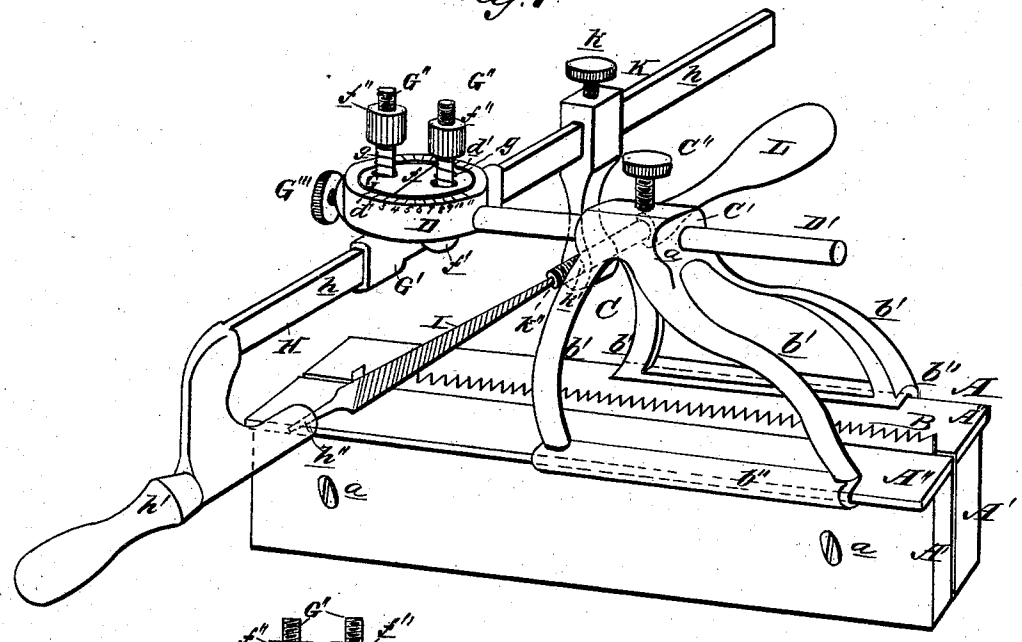
(No Model.)

E. P. ELLIS.

Machine for Filing Saws.

No. 238,872. Patented March 15, 1881.

Fig. 1



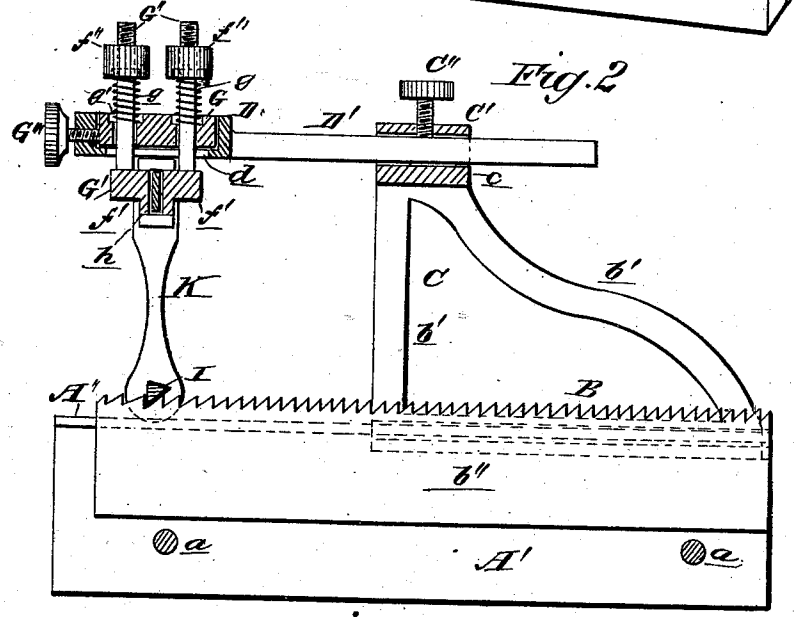
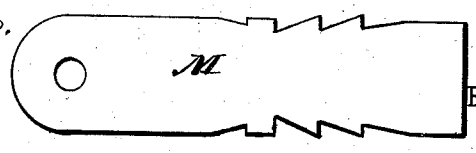


Fig. 2

Fig. 3



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EUGENE P. ELLIS, OF EMPORIA, KANSAS, ASSIGNOR OF ONE-FOURTH TO JAMES S. CONWELL.

MACHINE FOR FILING SAWS.

SPECIFICATION forming part of Letters Patent No. 238,872, dated March 15, 1881.

Application filed July 9, 1880. (No model.)

To all whom it may concern:

Be it known that I, EUGENE P. ELLIS, of Emporia, in the county of Lyon and State of Kansas, have invented a new and Improved Machine for Filing Saws, of which the following is a specification.

The object of this invention is to provide a simple saw-filing machine that is readily adjustable for any desired rake, bevel, and depth of tooth, and for any length of file.

Figure 1 is a perspective view of the device. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a longitudinal elevation of the saw-gage.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the clamp, consisting of two strips of wood, A′ A′, held together with screws *a a*.

B is a saw held by the clamp A.

A″ A″ are two plates of band-iron, secured on the faces of the clamp-sections A′ A′ for the purpose of holding the saw B more firmly, and also to afford flanges for the standard C to grasp and slide upon.

The standard C consists of a head-block, C′, supported on four spreading legs, *b′ b′*, said legs *b′ b′* having their feet rigidly connected in pairs with the grooved slides *b″ b″*, that grasp the opposite edges of the iron plates A″. The head-block C′ is bored longitudinally, as shown at *c*, and is provided with a milled-headed screw, C″, that is entered vertically through the top of said block C′ into the bore *c*.

D is the circular dial case or frame, having a long round handle, D′, which is entered into the bore *c* of the head-block C′, and there held by the screw C″ parallel with and above the saw B, so that said dial case or frame D may be rotated and moved in and out at will from said head-block C′. The dial case or frame D is a ring provided with an interior annular shoulder, *d*, and on its upper edge with a numbered graduated scale or index, *d′*, indicative of the different bevels that may be given to the teeth of the saw to be operated upon.

G is the dial-plate inserted in the frame D and resting on the shoulder *d*, said dial-plate G having a straight line, *f*, drawn on its face through its center centrally above and parallel with the socket or sleeve G′, which latter is attached to the dial-plate G by the bolts G″ G″, that extend from the side lugs, *f′*, of said sleeve G′ up through said plate G on either side of the line *f*, and have socketed nuts *f″* screwed on their ends. The spiral springs *g g*, encircling the said bolts G″ G″, have each one end engaged in the socket of a nut, *f″*, and the other end resting in a socket, *g′*, about the bolts G″ G″ in the dial-plate G. Said springs *g g* serve to prevent any drag of the saw-file on the back-stroke by lifting the socket or sleeve G′, and the file-frame H, that is supported therein. A milled-headed set-screw, G‴, is entered horizontally through the dial case or frame D, against the edge of the dial-plate G, and may be loosened to permit the rotation of said plate G and its attachments, and be tightened to hold them at the desired angle for the required bevel of the saw-teeth.

The file-frame H consists of a straight flat bar, *h*, which is entered through the socket or sleeve G′, one end of said bar *h* being curved downward and having fastened to it parallel with the bar *h* the handle *h′*, in the inner end of which is a socket, *h″*, for the reception of the tang of the file I. A sliding clamp, K, is fitted over the other end of the bar *h*, and is adjustably held by a set-screw, *k*, and said clamp K extends below said bar *h*, so that the transverse threaded bore *k′* in the end of said clamp K shall be on a level with the bore of the socket *h″* in the handle *h′*, and through this bore *k′* is screwed the adjusting file-handle L, which has in its end a socket, *k″*, for the reception of the end of the file I.

M represents a gage to be used as a guide in setting the file I at any desired rake.

This device is adjustable in rake by means of loosening the file I by turning the handle L and setting the file I at any angle on the gage M, and then turning the handle L up so as to force the tang of the file I into the socket *h″* of the handle *h′*, thereby making said file I firm and stationary.

The device is adjustable to any bevel required on the teeth of the saw B by rotating the dial-plate G in the case or frame D until the line

f shall rest in line with the graduation *d'* that indicates the desired bevel, and then securing said plate G by setting the screw G'''.

The device is also adjustable to any required depth of saw-tooth by turning up or down the nuts *f'' f''*. After the saw B is fixed in the clamp A as evenly as possible the nuts *f'' f''* are turned up or down, and the file I is thereby permitted to be raised or lowered until the required depth of tooth or proper elevation of file I is obtained.

By adjustment of the clamp K on the bar *h* of the file-frame H files of any length may be used with this device.

The file I is also adjustable at any angle to the saw-teeth by revolving the dial case or frame D in the head-block C', and holding it in position by setting the screw C'' down on the case-handle D'. The action of the spiral springs *g* in lifting the file I on the back-stroke, and thereby preventing its dragging, makes the file last much longer than in ordinary cases and do better work.

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

1. In a saw-filer, the combination, with the sliding standard C, provided with set-screw C'', of the dial case and handle D D', respectively, dial-plate G, provided with bolts G'' G'', having nuts *f'' f''* and spiral springs *g g*, and sleeve G', set-screw G''', file-frame H, sliding clamp K, and handle L, substantially as herein shown and described.

2. In a saw-filer, the combination, with the adjustable dial-plate G, sleeve G', bolts G'' G'', having nuts *f'' f''* and spiral springs *g g*, of the file-frame H, provided with sliding clamp K and adjustable file-handle L, substantially as herein shown and described.

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Witnesses:
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