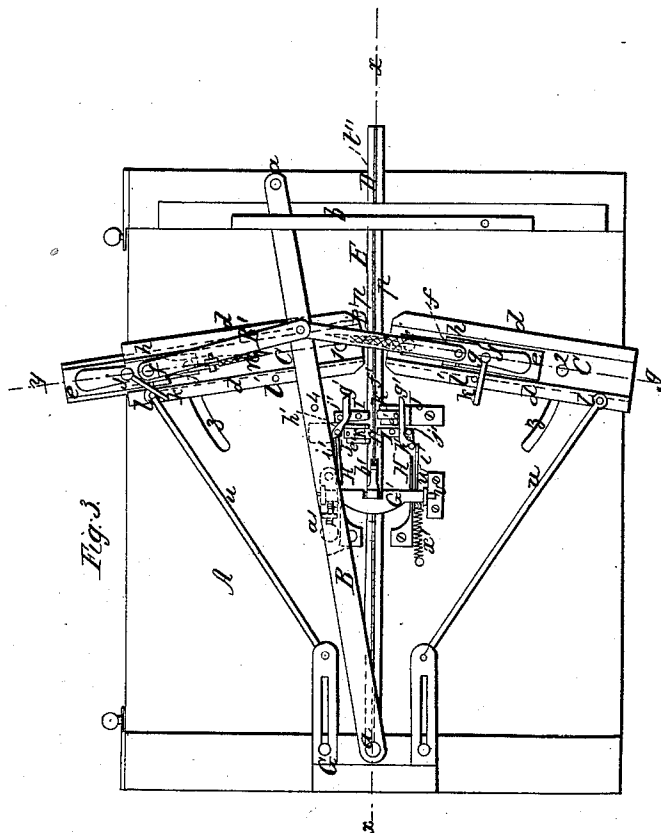
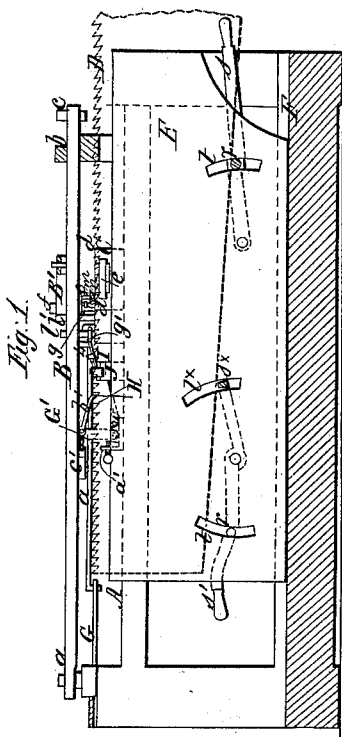
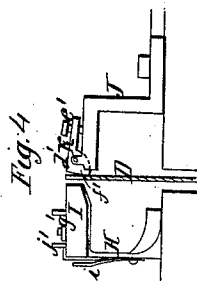
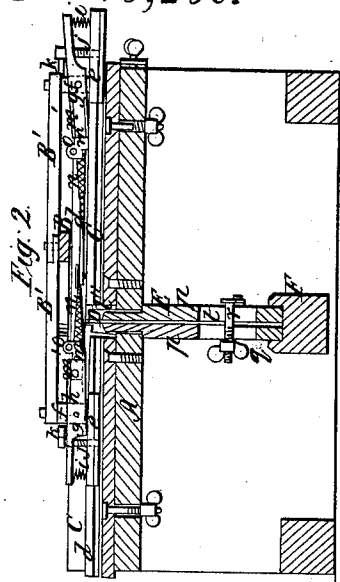


*Smith & Creighton,*  
*Sharpening Reciprocating Saws.*  
*No 18,250.*      *Patented Sep. 22, 1857.*



# UNITED STATES PATENT OFFICE.

A. C. SMITH AND JOS. K. CREIGHTON, OF EAST BIRMINGHAM, PENNSYLVANIA.

## MACHINE FOR FILING AND SETTING SAWS.

Specification of Letters Patent No. 18,250, dated September 22, 1857.

*To all whom it may concern:*

Be it known that we, ANSLEY C. SMITH and JOSEPH K. CREIGHTON, of East Birmingham, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Machine for Filing and Setting Saws; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of our improvement taken in the line (x), (x), Fig. 3. Fig. 2, is a transverse vertical section of ditto, taken in the line y, y, Fig. 3. Fig. 3, is a plan or top view of ditto. Fig. 4, is a detached side view of the setting device.

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

Our invention consists in the combination of a filing, setting, and feeding device arranged and operating conjointly as hereinafter described.

To enable those skilled in the art to fully understand and construct our invention we will proceed to describe it.

A, represents a platform or bed which may be of rectangular form and supported by a metallic framing arranged in any proper way.

B, is a lever, one end of which is pivoted to the back end of the bed as shown at a; and the opposite end of said lever works in a guide b. The lever is allowed to vibrate or work freely back and forth on its pivot a, the hand or other power being applied to the outer end of said lever as shown at c.

C, C, are two guide frames or blocks attached to the platform or bed A. These frames or blocks are formed of oblong plans or strips having a ledge d, at each side; the inner sides of which ledges are grooved at their inner surfaces, to form guides for carriages e. The guides C, are attached to the bed by pivots 1, at their inner ends; and their outer ends have screw bolts 2, attached, which pass vertically through curved slots 3, in the platform or bed. These carriages are merely rectangular blocks fitted and allowed to work freely between the ledges d, d. To each carriage e, and near its inner edge a standard f, is attached and a lever, g, is fitted on the upper end of each standard and pivoted thereto, as shown at h, Figs. 2 and 3. Between the outer end of

each lever g, and the carriages e, a spring i, is placed. These springs have a tendency to keep the inner ends of the levers depressed. A screw j, passes through each lever g between their fulcrum h, and the springs i; and small rods k, are fitted in the upper ends of these screws. The use of these will be hereinafter described. Vertical rods l, l<sup>1</sup>, are also attached to each guide frame or block at its inner side as shown clearly in Fig. 3.

In the inner end of each lever g, a holder m is placed. The shanks or inner ends of these holders are of cylindrical form and are secured in the levers by means of a set screw n. The outer ends are slotted longitudinally and have grooves made in them to receive the files n, which are secured firmly in the holders by set screws (o) which pass through ears or projections at the sides of the holders. Each carriage e, is connected to the lever B, by means of a bar B<sup>1</sup>. The outer end of these bars are fitted on the upper ends of the standards f.

D, represents the saw to be filed and set. This saw is secured in a clamp E, which is formed of two strips or boards p, p, secured together by nuts q and rods r, which rods are attached to levers or arms s, s<sup>1</sup>, secured to the outer side of one of the strips, or boards p of the clamp. The rods r, pass through curved slots t in the strips or boards and support the saw, the back of which rests upon them; and these rods may be raised or lowered so as to compensate for the varying width of saws and keep the teeth of all at the requisite height above the platform or bed. These rods r, are readily adjusted by means of the levers and the rods secured at any desired point by the nuts q. The levers may be arranged in any proper manner.

The lever s<sup>1</sup> (see Fig. 1) has its end s<sup>x</sup>, bent at right angles with the other portion, and passing through a curved slot t<sup>x</sup>, in the strips; the rod r serving as an adjustable fulcrum and the saw resting upon the end s<sup>1</sup>.

The lower edges of the strips or boards p, p, are fitted in a guide or grooved bar F, in the lower part of the framing; and the upper edges of the strips or boards are fitted in a slot t<sup>11</sup> in the platform or bed; the clamp is allowed to slide with a necessary degree of freedom in the bar F, and slot t<sup>11</sup>.

To the outer end of each guide C, a rod u, is attached. These rods are also attached to

a sliding or adjustable plate G, which is secured to the back end of the platform or bed A.

To the platform or bed A, a bar  $G^1$ , is attached. This bar is bent at its end, the bent ends forming right angles with its upper horizontal portion. To the lower parts of the bent ends journals  $v$ , are attached; and these journals are fitted in bearings  $w$ , attached to the platform or bed. The bar  $G^1$ , is thereby allowed to vibrate back and forth and a spiral spring  $x^1$ , which is attached to its back end has a tendency to keep one of the bent ends of the bar in contact with a set screw  $a^1$ , which regulates the distance of its backward throw; see Fig. 1 and dotted lines Fig. 2. To the front end of the bar  $G^1$ , and at about its center, a pawl  $b^1$  is attached. This pawl catches into or between the teeth of the saw D. The back end of the bar  $G$ , is of convex form and a block  $c^1$  is attached to the under side of the lever B, as shown clearly in Fig. 1.

To the platform or bed A, two spring or elastic bars H, H, are attached, one at each side of the saw D; and to the outer end of each bar H, a hammer I, is attached. Two bent bars J, J, are also attached to the platform or bed A, one at each side of the saw D; and to the upper horizontal portion of each bar J, a bed or anvil K, is pivoted as shown clearly at  $d^1$ , Fig. 4. Through the outer end of each bed or anvil K, a set screw,  $e^1$ , passes, and by adjusting these set screws the face sides  $f^1$ , of the beds or anvils may be placed more or less obliquely relatively with the saw teeth as may be desired.

To the outer end of each spring bar H, a projecting bar or lever  $g^1$ , is pivoted as shown at  $h^1$ . The inner ends of these bars or levers bear against springs  $i^1$ , which are attached to the bars, said springs having a tendency to keep the bars or levers  $g^1$ , pressed against steps  $j^1$ , on the hammers I, I.

The operation is as follows: The saw D, is placed between the strips or boards  $p$ ,  $p$ , and the saw adjusted at the proper height so that its teeth will be between the face sides  $f^1$ , of the beds or anvils K, K, and the files  $n$ , allowed to act properly upon or against them. The guides C, are adjusted simultaneously, by sliding the plate G, and securing it at the proper point, so that each file may act upon its teeth at the proper angle. The lever B, is then actuated back and forth by hand or by other means. As the lever B, is

thus operated, the files  $n$ , are moved back and forth and the teeth of the saw are filed, the files being kept down upon the saw during their forward movement so as to perform the work, and raised during their backward movement in consequence of the rods  $k$ , being turned or actuated by coming in contact with the rods  $l^1$  on the guides. This movement of the rods  $k$ , causing the screws  $j$  to be turned so as to elevate the outer ends of the levers  $g$ , and consequently the files  $n$ , so that they will pass free from the saw. The screws  $j$ , are turned in the opposite direction so as to allow the springs  $i$ , to depress the files previous to their movement toward the saw in consequence of the rods  $k$ , coming in contact with the rods  $l$ , just previous to the termination of their backward or outward movement. As the lever B, is moved back and forth, the block  $c^1$  actuates the bar  $G^1$ , and the pawl  $b^1$ , feeds the saw along tooth by tooth. As the lever B is operated, the two hammers I, I, are moved alternately in consequence of a pin (4) on its under surface catching against the levers or bars  $g^1$ , and when said levers or bars are freed from the pins (4), the spring bars H, force the hammers I, alternately against the sides of the teeth of the saw and give the teeth more or less set according to the inclination given the face sides  $f^1$  of the beds or anvils K. Thus, it will be seen, that, the saw is filed and set at the same time, the parts being all actuated by the movement of the lever B.

We are aware that several saw filing and setting machines have been devised, and that files have been placed in reciprocating frames. We therefore do not claim, broadly, the employment or use of reciprocating files, irrespective of the arrangement herein shown; neither do we claim the setting device irrespective of its construction and also of its arrangement with the filing device.

Therefore what we claim as new, and desire to secure by Letters-Patent, is:

The combination of the filing, setting, and feeding device, when the whole is arranged to operate conjointly and automatically as shown, for the purpose set forth.

ANSLEY C. SMITH.  
JOSEPH K. CREIGHTON.

Witnesses:

GEO. K. ORMOND,  
S. M. DUVAL.