

G. W. ATKINS.  
Saw Set.

No. 237,799.

Patented Feb. 15, 1881.

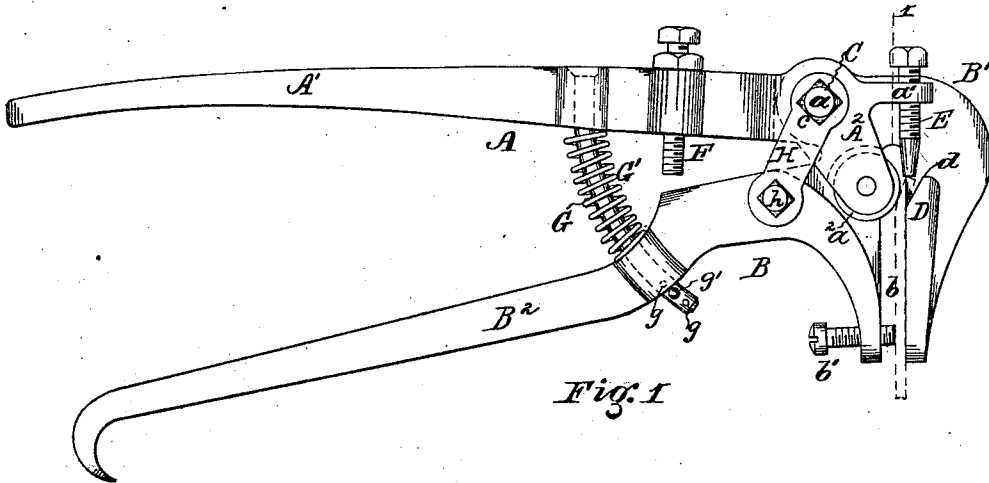


Fig. 1

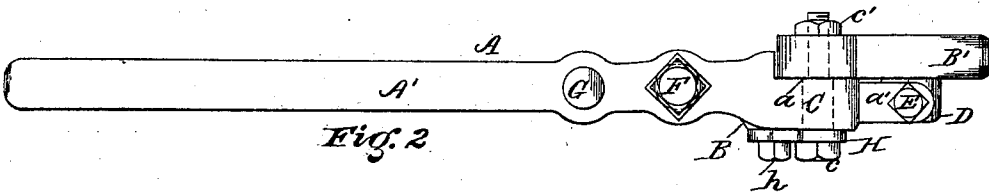


Fig. 2

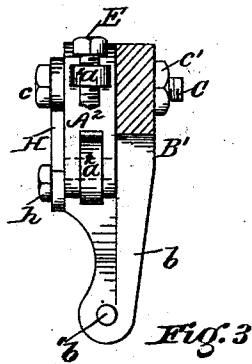


Fig. 3

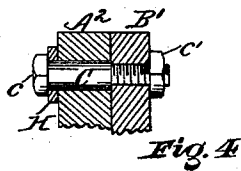


Fig. 4

WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE W. ATKINS, OF MILTON, DELAWARE.

## SAW-SET.

SPECIFICATION forming part of Letters Patent No. 237,799, dated February 15, 1881.

Application filed January 15, 1880.

To all whom it may concern:

Be it known that I, GEORGE W. ATKINS, of Milton, in the county of Sussex and State of Delaware, have invented certain new and useful Improvements in Saw-Sets; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation of my invention; Fig. 2, a plan; Fig. 3, a transverse vertical section, partly on the line 1, Fig. 1; and Fig. 4 is a detail section, showing the pivotal connection of the levers or operating-handles.

My invention has for its object to provide a device especially designed and adapted for setting the teeth of large saws, such as cross-cut, rotary, and up-and-down saws.

My invention consists in the peculiar construction and combination of parts hereinafter set forth, having reference principally to a movable lever carrying on the extremity of its short arm a roller, which operates to set a tooth whenever properly moved, said lever being fulcrumed on an arm having an anvil or die, upon or against which the tooth is set.

It further consists in certain details of construction hereinafter set forth.

Referring to the accompanying drawings, A indicates a lever, whose fulcrum is at *a*, its long arm or handle being lettered A', and short arm or working jaw A<sup>2</sup>, the latter being at an angle (preferably an obtuse angle, but slightly greater than a right angle, as shown) with the long arm A'. At the extremity of the short arm of the lever, which is bifurcated for its reception, is an anti-friction roller, *a*<sup>2</sup>.

B represents an arm, which furnishes a fulcrum-rest for the lever A, its outer extremity being a head, B', while its inner or opposite end forms a handle, B<sup>2</sup>. The head B' is sawed or formed with an opening or kerf, *b*, for the reception of the saw-blade, and is provided with a screw, *b*', which adjusts the width of the space between the end of the screw and the opposite side of the kerf according to the thickness of the saw-blade inserted therein.

C represents a pintle or screw-bolt, which passes into the arm B and serves as the pivot

on which the lever A turns or moves, said bolt being provided with a head, *c*, and lock or jam-nut *c*'.

D is a fixed jaw or anvil formed integral with the head B', and consisting of an elevation or projection on said head. It is beveled or inclined opposite the roller *a*<sup>2</sup>, as shown at *d*, so as to permit a saw-tooth when acted upon by said roller to be bent or set over against or upon it.

E represents a set-screw for regulating the extent of insertion of the saw-blade in the kerf *b*, said screw being inserted in a lug, *a*', on the arm A<sup>2</sup>, and adapted to rest upon the point of the saw-tooth when the latter is moved into position to be set.

F shows another adjusting-screw passing through the long arm A', and designed to meet the handle B<sup>2</sup>, forming a stop for the lever A, and limiting the movement thereof, and thereby regulating the extent of set.

G represents a segmental arm extending from the lever A, and passing through an opening in the handle B<sup>2</sup>, being encircled between said lever and handle by a spiral spring, G', which serves to move said lever outwardly or upwardly from said handle after each compression or depression. The free end of said arm has adjusting-holes *g g g*, through one of which passes a pin, *g*', which serves to limit the sliding movement of said arm and the opening or rising of said lever A or of its long arm A'.

The operation is as follows: The parts being first duly adjusted, the tool is passed down over the saw which requires to be set until the lower end of the screw E rests upon the point of a tooth. Now, upon compressing the handles A' B<sup>2</sup> together by the gripping action usual in handling tongs, pinchers, and like utensils, or by moving the handle A' down toward the handle B<sup>2</sup>, the roller *a*<sup>2</sup> is caused to move upon the tooth opposite to it, bending or setting the same over upon or against the anvil or die D, the movement of said roller being from the base toward the point of the tooth. The tool is then lifted over to the next alternate tooth and the operation repeated as before, and continued until one side of the saw is (or all the teeth which cant to one side are) set. The other alternate teeth are then set by operating the tool on the opposite side of the saw-blade.

The advantage of the roller  $a^2$  is, that it reduces the friction of the working-jaw on the saw-tooth and diminishes the power required for setting the tooth—*i. e.*, the power to be applied to the handle  $A'$ . The rolling action also prevents abrasion of the saw-teeth in setting, and as the roller turns in setting, a fresh face or surface contact is presented to each tooth. Hence the actual working-face—*viz.*, the periphery of the roller—does not wear down so fast as would a rigid jaw, always presenting the same face to each tooth.

By means of the various adjustments described the parts can be regulated so as to adapt the tool to setting saw-teeth of different sizes and to fit varying thicknesses of saw-blades.

To support the pivot or bolt  $C$ , on which the lever  $A$  turns, I provide a stay,  $H$ , through which said bolt passes, and which is firmly and rigidly secured to the arm  $B$  by a bolt,  $h$ .

The tool is designed to be made of malleable cast-iron, the roller  $a^2$  and anvil or die  $D$  being case-hardened.

I am aware that two levers pivoted together, one having an anvil or seat for the saw-tooth, the other provided with a setting point or die, have been previously known and used; also, that screws for gages have been employed in such sets. Hence I do not herein broadly claim the same as my invention.

What I claim as my invention is—

1. The combination, with the pivoted jaws of a saw-set, in which one jaw,  $B$ , is constructed with the kerf  $b$ , of the rotary setting die or roller  $a^2$ , journaled in the jaw  $A^2$ , and arranged so as to operate in the upper part of said kerf, substantially as shown and described. 35

2. The combination, in a saw-set, of the arm  $A$ , prolonged to form a working-jaw, and the arm  $B$ , having a handle,  $B^2$ , and a head,  $B'$ , bent to an approximate right angle with the line of the two handles, and formed with a kerf,  $b$ , with the rotary setting die or roller  $a^2$ , as and for the purpose set forth. 40 45

3. The anvil  $D$ , having the beveled shoulder  $d$ , in combination with the rotary setting die or roller  $a^2$ , as shown and set forth.

4. The improved saw-set consisting of the two jaws pivoted together, the jaw  $B$ , having the head  $B'$ , with kerf  $b$  and anvil  $D$ , and the jaw  $A^2$ , being provided with the rotary setting die or roller  $a^2$  and adjusting-screw  $E$ , substantially as shown and described. 50

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of January, 1880. 55

GEORGE W. ATKINS.

Witnesses:

SAML. J. VAN STAVOREN,  
CHAS. F. VAN HORN.