

(No Model.)

B. McINTIRE.
SAW SETTING MACHINE.

No. 418,874.

Patented Jan. 7, 1890.

FIG. 1.

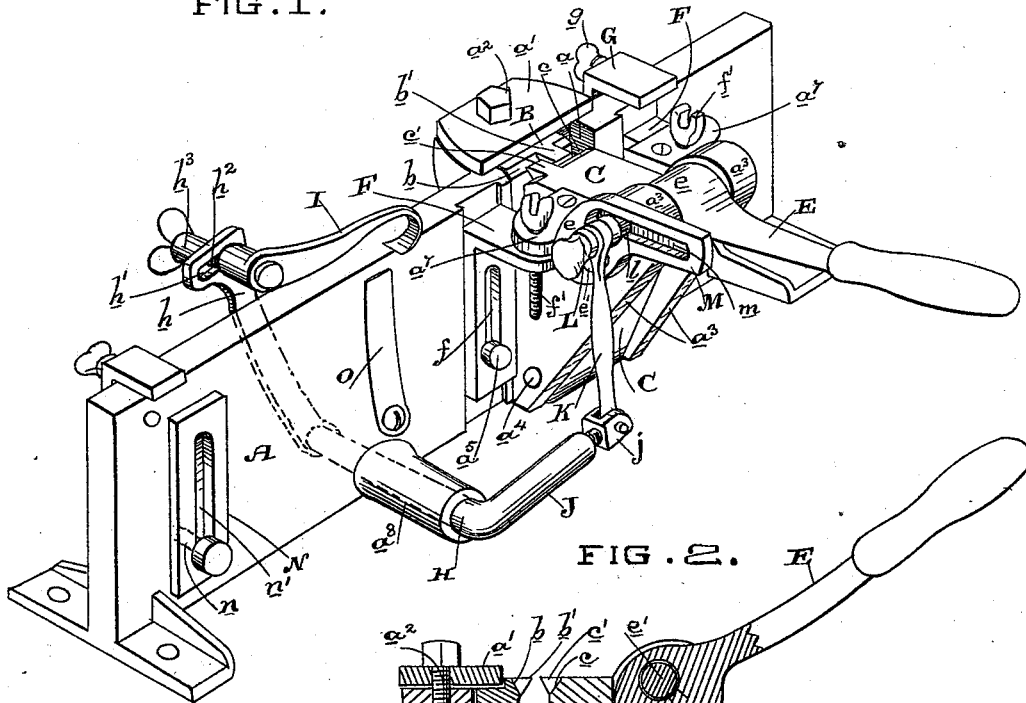


FIG. 2.

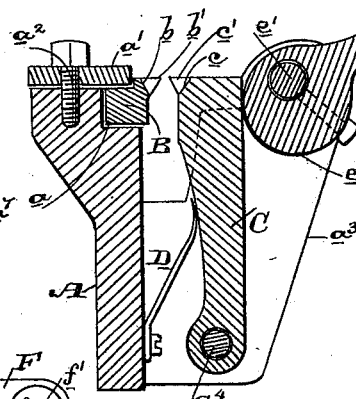
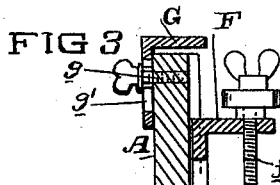


FIG. 4.

Witnesses,
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UNITED STATES PATENT OFFICE.

BARTLETT MCINTIRE, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE
VULCAN IRON WORKS, OF SAME PLACE.

SAW-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 418,874, dated January 7, 1890.

Application filed June 19, 1889. Serial No. 314,861. (No model.)

To all whom it may concern:

Be it known that I, BARTLETT MCINTIRE, of the city and county of San Francisco, State of California, have invented an Improvement in Saw-Setting Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of machines for setting the teeth of saws; and my invention consists in the novel construction and arrangement of parts and their combinations, hereinafter fully described, and specifically pointed out in the claims.

The object of my invention is to provide a simple and effective saw-setting machine which is specially adapted for the setting of the teeth of band-saws.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my saw-set. Fig. 2 is a vertical cross-section through the two anvils and the operating-lever. Fig. 3 is a section of the frame-plate, showing one of the rests F. Fig. 4 is a horizontal section through arm M and a plan of the two anvils and the lever E.

A is the frame-plate of the machine, provided with end lugs by which it is screwed down to the table or stand on which it rests.

B is the stationary anvil, mounted in a recess or socket *a*, formed in the top of the frame-plate, and adapted to be moved longitudinally in its seat to adjust it, for a purpose presently to be described. This anvil is held in its place by means of a top-plate *a'*, secured by a screw-bolt *a²*. The upper inner edge of this anvil B is beveled, as shown at *b*, and is provided near one end with a projecting set-lug *b'*, having a downwardly-beveled face.

Pivoted at *a⁴* in a bracket *a³* on the side of the frame-plate is the movable anvil C, the head of which is provided on its inner edge with a beveled surface *c* and a projecting set-lug *c'* near one end, and having a beveled face. The beveled faces of the two set-lugs *b'* and *c'* correspond to the beveled surfaces of the opposing anvils, so that when the movable anvil is brought up to the stationary anvil the beveled lugs pass one an-

other and simultaneously force the adjacent teeth of the saw over in opposite directions against the beveled faces of the two anvils.

A spring D controls the movement of the anvil C in one direction, and its setting-up movement is effected by means of a lever E, having a cam or eccentric head *e*, which is pivoted in the top of the bracket *a³* and bears against the back of the anvil C.

F are rests on which the back of the saw is to bear. These rests are two in number, one on each side of the anvils, and adapted to be vertically moved, so as to vary and adjust their heights. They are fitted in grooved seats in the frame-plate and have elongated slots *f*, which fit over bolts *a⁵*, passing through the frame-plate and provided with set-nuts *a⁶*. Adjusting-screws *f'* pass down through bearing-pieces *a⁷* on the bracket *a³* and through the tops of the rests F. By turning these screws the rests may be raised or lowered to provide for different widths of saws, and when in place may be fixed by the set-nuts *a⁶* tightening up the bolts *a⁵*. The vertical movement of the support and of the guide G also provides for regulating the set of the teeth.

G is a guide for the top of the saw. This guide is vertically moved by means of a set-screw *g*, which passes through an elongated slot *g'* in the guide-body and into the frame-plate.

In order to feed the saw I have the following connections: Mounted in a bearing *a⁸* in the base of the frame-plate is a rock-shaft H, one end of which carries an upwardly-extending arm *h*, the top of which has an elongated slot *h'*. Through this slot passes a set-screw *h²*, adjusted and tightened by a thumb-nut *h³*, and upon this screw is loosely pivoted by one end the feed-pawl I, the other end of which is hooked and is adapted to engage the saw-teeth.

The other end of the rock-shaft H has a crank J, extending backwardly, and having a slotted bearing *j*. In this slotted bearing is pivoted a link K, the upper end of which is fitted upon an adjusting-screw L, the end of which is seated in a sliding nut *l*, fitted in an elongated slot *m* in

a crank-arm M, secured to the end of the pivotal shaft e' of the cam or eccentric head e of lever E.

Now, by vibrating the lever E the slotted crank-arm M is vibrated, and, through the link, the rock-shaft, and the connections described, the feed-pawl is drawn back and forth, and the end of the said pawl, engaging the teeth of the saw, feeds said saw forward as the anvil C is withdrawn from the anvil B, thereby relieving the saw. These connections, it will be seen, are all adjustable ones. By moving the sliding nut 7 in the slotted crank-arm M the throw of the rock-shaft II is increased or diminished to correspondingly increase or diminish the movement of the feed-pawl I, thus adapting the feed to the different sizes of saw-teeth. The connection between the link K and the crank J of the rock-shaft is also an adjustable one, and is formed of the slotted bearing j , which is screwed into the crank, and has, consequently, an axial movement, and the pivoted lower end of the link, thereby enabling the link to be adjusted in the slotted crank-arm M above to any suitable position. The primary position of the feed-pawl is regulated and adjusted by its setting in the slotted upper end of the arm h of the rock-shaft.

N is a vertically-adjustable rest on the side of the frame-plate. It is adjusted by means of a set-screw n passing through the frame-plate and through an elongated slot n' in said rest.

As before stated, the stationary anvil B has a movement in its recess or socket a , the object of which is to adjust its set-lug b' with respect to the set-lug c' of anvil C, either closer to it or farther from it, whereby saws with more or less teeth to the inch may be accommodated. This adjustment of the anvil B is effected by loosening the securing top plate a' and then moving said anvil.

O is a spring for holding the saw to side of the frame-plate.

The operation of the machine is as follows: The saw is put in place with its back supported upon the rests N and F, which are properly adjusted vertically to accommodate the width of said saw. The spring O, secured to the frame-plate, bears against the side of the saw and holds it steady, while the teeth of the saw pass directly under the top guide G. The anvil B is properly set for the particular teeth of the saw, and the feed-pawl I rests between the teeth, so as to be ready to feed the saw forward. The lever E is now brought down toward a horizontal position and its cam or eccentric head e , bearing against the back of the anvil C, moves said anvil forward, so that the saw is pressed between the two anvils, while their respective set-lugs, coming in contact with adjacent teeth of the saw, press them simultaneously over in opposite directions, whereby they are properly set. This movement of the lever E, through the rock-shaft II and its end con-

nections, moves the feed-pawl, which in this direction slips over the teeth of the saw and engages a tooth farther back. Then the lever is raised from its horizontal position, so that its eccentric head frees the anvil C, the spring of which throws it back away from the anvil B, thus relieving the saw. This same movement of the lever, through its connections, feeds the pawl forward, so that it moves the saw, which thus presents two new teeth for the succeeding operation of the set-lugs of the anvils.

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

1. In a saw-setting machine, the frame-plate having the elongated socket or recess a in its top and the bracket a^3 on its side, in combination with the anvil B, mounted in said socket or recess and longitudinally movable therein, said anvil having a setting-face with a projecting set-lug, the anvil C, pivoted in the bracket a^3 of the frame-plate and having a setting-face with a projecting set-lug, the cam or eccentric headed lever pivoted in the bracket a^3 of the frame-plate and operating against the back of the anvil C, whereby it is forced forward, and the spring for returning said anvil, substantially as described.

2. In a saw-setting machine, the combination of the opposing anvils B and C, having the set-lugs acting on adjacent teeth of the saw, the cam or eccentric headed lever and spring for operating the anvil C, and the vertically movable and adjustable rests F for the saw on each side of the anvils, substantially as described.

3. In a saw-setting machine, the combination of the opposing anvils having the projecting set-lugs, the cam or eccentric headed lever and spring for operating one of said anvils, the vertically movable and adjustable rests for the saw on each side of said anvils, and the vertically-adjustable guide for the top of the saw, substantially as described.

4. In a saw-setting machine, and in combination with the lever for operating the setting devices, the feed-pawl engaging the teeth of the saw, and the adjustable connections between said pawl and lever, consisting of the rock-shaft, the arm on one end of the rock-shaft and carrying the pawl, the slotted crank-arm on the pivotal shaft of the operating-lever, the crank on the other end of the rock-shaft, and the link adjustably connected with the crank of the rock-shaft and with the slotted crank-arm of the pivotal shaft of the lever, substantially as described.

5. In a saw-setting machine, and in combination with the lever for operating the setting devices, the feed-pawl engaging the teeth of the saw, and the adjustable connections between said pawl and lever, consisting of the rock-shaft having an arm on one end and a crank on the other end, the set-screw adjustably connected with the upper end of the arm and carrying the feed-pawl, the slot-

ted crank-arm on the pivotal shaft of the operating-lever, and the link adjustably connected with said crank-arm and with the crank of the rock-shaft, substantially as described.

5 6. A saw-setting machine comprising the frame-plate, the adjustable anvil B in said plate, the swinging spring-controlled opposing anvil C, pivoted to said plate, the eccentric
10 or cam headed lever E, operating against the back of the swinging anvil, the vertically-movable rests for the back of the saw, the vertically-movable guide for the top of the saw, the feed-pawl engaging the teeth of the saw, and
15 the connections between said feed-pawl and the operating-lever, consisting of the rock-

shaft, the arm on one end of said rock-shaft and having the feed-pawl adjustably secured to its top, the crank on the other end of the rock-shaft, the slotted crank-arm on the pivotal shaft of the operating-lever, and the adjustable link connected with said slotted crank-arm and with the crank of the rock-shaft, all arranged and adapted to operate substantially as described.

In witness whereof I have hereunto set my hand.

BARTLETT MCINTIRE.

Witnesses:

S. H. NOURSE,
H. C. LEE.