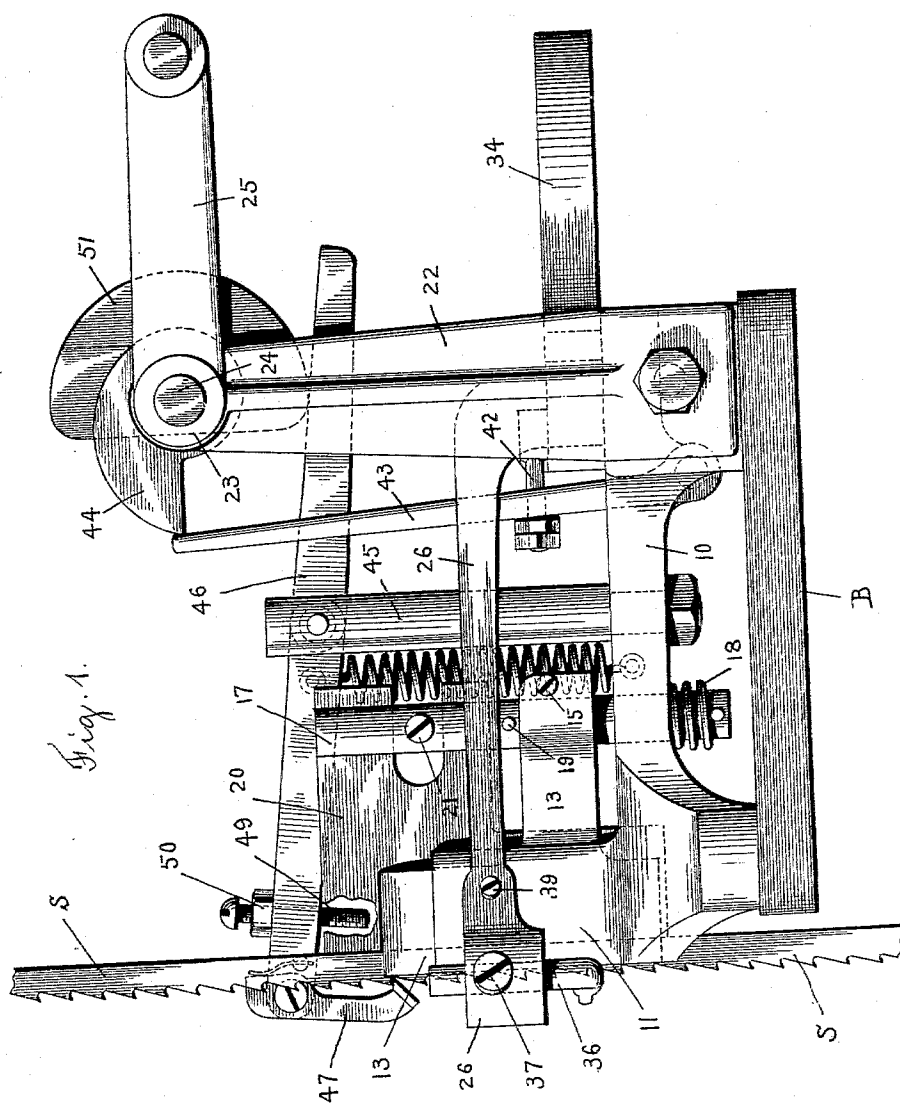


3 Sheets—Sheet 1.

A. M. PINEO.
MACHINE FOR SETTING SAW TEETH.

No. 569,766.

Patented Oct. 20, 1896.



Witnesses.

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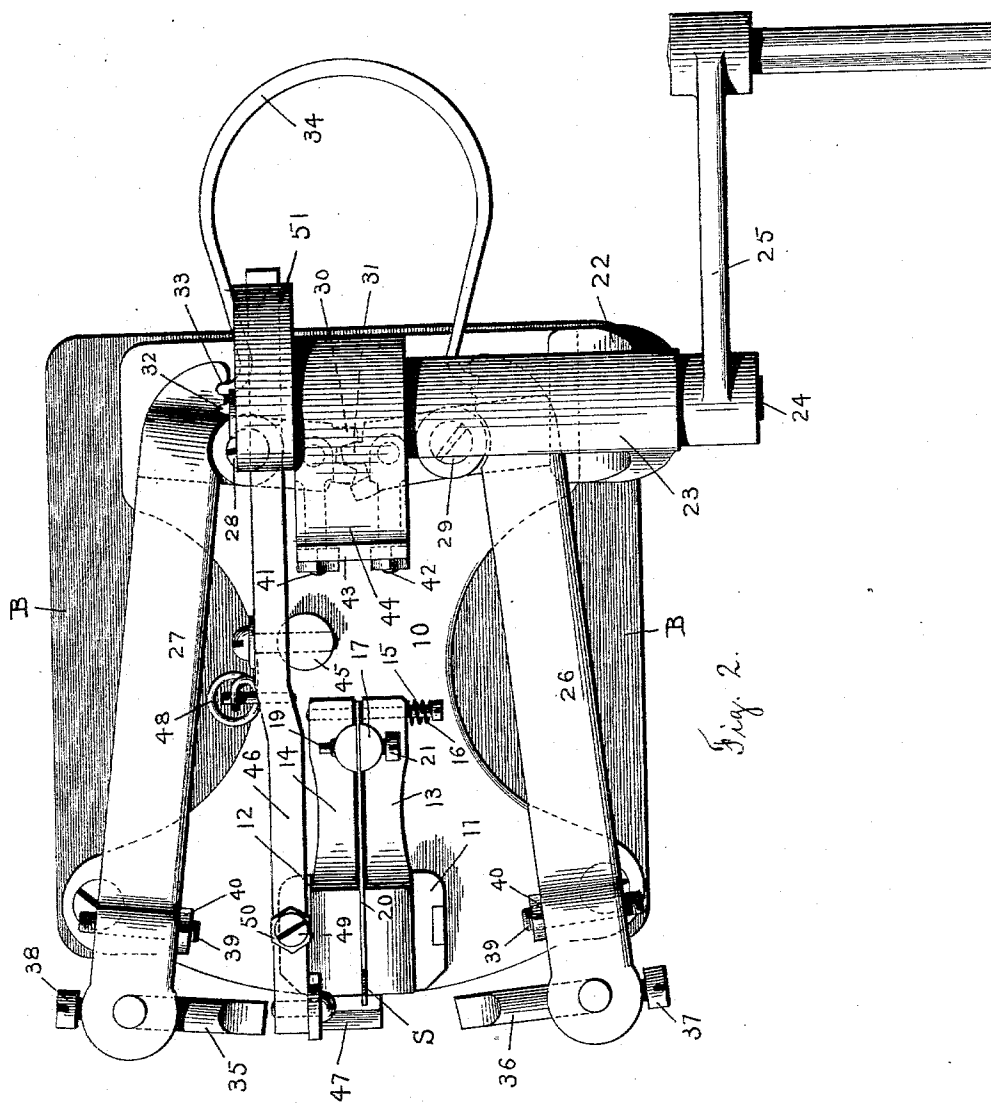
(No Model.)

3 Sheets—Sheet 2.

A. M. PINEO.
MACHINE FOR SETTING SAW TEETH.

No. 569,766.

Patented Oct. 20, 1896.



Witnesses.

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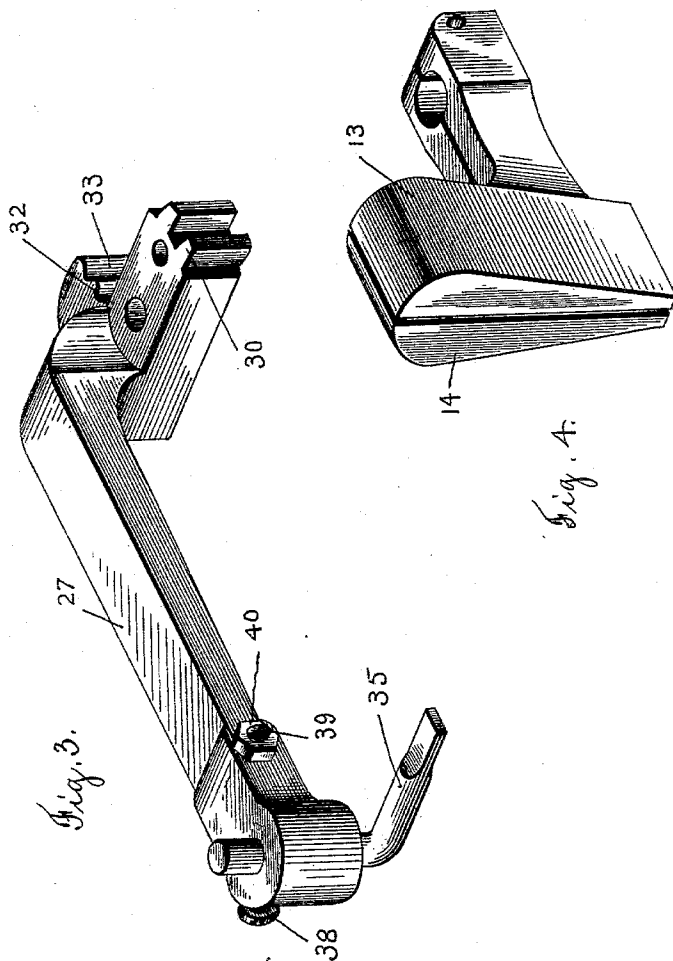
(No Model.)

3 Sheets—Sheet 3.

A. M. PINEO.
MACHINE FOR SETTING SAW TEETH.

No. 569,766.

Patented Oct. 20, 1896.



Witnesses.

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UNITED STATES PATENT OFFICE.

AUBREY M. PINEO, OF GARDNER, MASSACHUSETTS.

MACHINE FOR SETTING SAW-TEETH.

SPECIFICATION forming part of Letters Patent No. 569,766, dated October 20, 1896.

Application filed February 1, 1896. Serial No. 577,667. (No model.)

To all whom it may concern:

Be it known that I, AUBREY M. PINEO, a citizen of the United States, residing at Gardner, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machines for Setting Saw-Teeth, of which the following is a specification.

The object of my invention is to provide a strong, simple, and efficient machine for setting or bending the teeth of saws.

A machine constructed according to my invention has been especially designed for setting band-saw teeth without removing the saw from its machine, but may be employed with advantage on different classes of work.

In the accompanying three sheets of drawings, Figure 1 is a side view of a machine for setting saw-teeth constructed according to my invention. Fig. 2 is a plan view of the same, and Figs. 3 and 4 are detail perspective views to be hereinafter referred to.

A machine for setting saw-teeth constructed according to my invention comprises a pair of hammers which are arranged to set adjacent teeth of a saw in opposite directions.

As illustrated, the hammers are mounted in horizontally-swinging pivoted arms and are arranged so that they may be adjusted vertically to engage with saw-teeth of different coarseness.

A yoke or spring is arranged to normally throw both of the pivoted arms toward each other to bring the hammers into engagement with the saw-teeth.

By employing a single spring for actuating both of the pivoted arms the pressure exerted upon each of the pivoted arms and the force of the blow delivered by each of the hammers will be exactly equal, producing an even and uniform effect upon the teeth of the saw.

The spring-yoke for operating the pivoted arms may be adjusted to engage different notches or sockets, so that the force of the blow delivered by the hammers may be adjusted or varied.

The pivoted arms are moved apart or separated against the tension of their spring by means of suitable connections which are engaged and operated by a cam upon the operating-shaft of the machine.

The means which I preferably employ for

holding the saw in position to be engaged by the hammers comprise a pair of spring-actuated tapering jaws, which normally wedge or clamp the saw firmly in place, but will yield readily to allow the saw to be advanced or fed.

An adjustable guide-plate is arranged to engage the rear face of the saw.

To advance or feed the saw, I provide a ratchet which engages with the saw-teeth and is carried by an arm which is actuated by a feed-cam on the operating-shaft of the machine.

Referring to the drawings and in detail, 10 designates a base plate or frame which may be of any ordinary or approved construction. Near the front of the base-plate are side pieces 11 and 12, which form a socket for receiving the tapering jaws 13 and 14. The tapering jaws 13 and 14 are provided near their rear ends, as illustrated in Fig. 4, with a socket for receiving a post 17. The post 17 is normally pulled down by a spiral spring 18, which is provided with a pin 19, which rests upon and engages the tapering jaws. At their rear ends the jaws 13 and 14 are connected by a pin 15, having a spiral spring 16, which is arranged to open or move the front of the jaws apart when they are raised or moved upwardly. Fitting into a socket or split portion of the post 17 is a plate 20, which forms a guide for the rear edge of the saw, and can be secured in its adjusted position by means of a clamping-screw 21.

With the guiding and clamping devices as thus arranged it will be seen that a saw, as S, will be firmly clamped and held in position by means of the tapering jaws 13 and 14, which, however, will yield readily when the saw is drawn or fed upward. These clamping devices may be used in other machines, if desired, and may be employed, for instance, for forming a vise to hold a saw in position while the same is being filed or sharpened.

Projecting up from the rear part of the base-plate 10 is a bracket 22, having a bearing 23, in which is mounted an operating-shaft 24, having a crank or handle 25 secured near its end. Arms, as 26 and 27, are pivoted upon the base-plate 10 by means of screws 28 and 29. The pivoted arms 26 and 27 are geared together by means of the teeth 30 and 31, so that they will move or turn simultaneously.

Each of the pivoted arms 26 and 27 is provided near its end with notches 32 and 33. A spring or yoke 34 is arranged to engage with either set of notches, as 32 or 33, as desired.

When the spring or yoke 34 is in engagement with the outer set of notches 33, a greater tension will be exerted upon the pivoted arms than when the yoke is in engagement with the inner set of notches, as 32. The hammers 35 and 36 for engaging the teeth of the saw are adjustably mounted in the front ends of the pivoted arms 26 and 27. The hammers 35 and 36 may be secured in their adjusted position by means of the set-screws 37 and 38. By adjusting the hammers 35 and 36 vertically they can be arranged to engage with saw-teeth of different grades or coarseness. Threaded into the pivoted arms 26 and 27 are adjustable stops 39, which may be secured in their adjusted position by means of check-nuts, as 40. The movable stops 39 may be adjusted to regulate the distance which the saw-teeth will be bent or set over and will regulate the amount of clearance for the saw.

An arm 43 is pivoted at its lower end to the base-plate 10, and is connected to the arms 26 and 27 by means of links 41 and 42. Engaging with and operating the arm 43 is a cam 44, secured upon the operating-shaft 24. The feeding devices for raising or advancing the saw comprise an arm 46, pivoted upon a post 45, secured to the base-plate 10. At its front end the arm 46 is provided with a pivoted pawl 47, which engages with the teeth of the saw. An adjustable stop 49 is threaded into the arm 46, and may be secured in its adjusted position by means of a check-nut 50. At its rear end the arm 46 is engaged by a feed-cam 51 on the operating-shaft 24. The pawl 47 and the arm 46 are normally drawn down by a spring 48. By means of this construction it will be seen that as the operating-shaft 24 is turned the pawl 47 will be moved up and down, so as to advance or raise the saw S in position to be operated upon by the hammers 35 and 36.

To regulate or adjust the feeding devices to correspond with saws of different fineness, the stop 49 can be adjusted to control the lowest position of the feed-pawl 47, and by regulating this stop the teeth can be accurately positioned to be operated upon by the hammers.

A machine for setting saw-teeth constructed according to my invention is especially applicable for use in connection with band-saws.

When the teeth of a band-saw are to be set, my machine may be secured or clamped in any desired manner upon the table of the band-saw, as illustrated by the plate or part B in the drawings.

When my machine is secured in place and the shaft 24 is operated, the hammers will be actuated to simultaneously set the adjacent teeth of the saw in opposite directions without removing the saw from its machine.

Inasmuch as the hammers are operated by a single spring the pressure imparted to the hammers and the force of their blow will be exactly equal. The force of these blows can be regulated by moving the spring-yoke 34 into engagement with the desired notches, as described.

In practice I have found that a saw-setting machine comprising a spring-actuated hammer for driving over or setting the teeth of the saw is much more efficient than that class of saw-sets which are provided with devices for simply crowding or pushing over the teeth of the saw.

Where the teeth are simply crowded or pushed to one side, I have found in practice that the teeth will tend to spring back to their original position when the pressure is removed.

By employing hammers which are spring-actuated I have found that I am enabled to deliver a blow upon the teeth which will bend or set them over so that they are not so liable to spring back.

To regulate the amount of set or clearance to be given to a saw, it is simply necessary to adjust the movable stops 39.

To adapt the machine to operate upon saws of different coarseness, it is simply necessary to adjust the hammers to the desired position and to regulate the feeding devices so as to properly engage with the teeth.

The features which I regard of particular importance in a saw-setting machine constructed according to my invention reside in the fact that two adjacent teeth of a saw may be simultaneously set in opposite directions without removing the saw from its machine.

The setting devices deliver blows of equal force. The amount of set can be quickly adjusted and the hammers and feeding devices can be easily regulated to cooperate with saws of different coarseness.

I am aware that many changes in saw-setting machines may be made by those who are skilled in the art without departing from the scope of my invention as expressed in the claims. I do not wish, therefore, to be limited to the construction which I have shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class described, the combination of a base-plate, a saw-setting mechanism comprising spring-pressed swinging arms pivoted on the base-plate, adjustable stops for limiting the motion of the pivoted arms to regulate the amount of set or clearance given a saw, a feeding mechanism, means for adjusting the feeding and saw-setting mechanisms to cooperate with saws of different coarseness, an operating-shaft, cams mounted upon the operating-shaft and connected to actuate the saw setting and feeding mechanisms, the parts being combined and arranged to set the teeth of a band-saw

without removing said saw from its machine, substantially as described.

2. In a device of the class described, the combination of a base-plate, horizontally-swinging pivoted arms journaled thereon, a pivoted piece connected by links to said pivoted arms, an operating-shaft, and a cam secured on said operating-shaft in position to engage said pivoted piece, substantially as described.

3. In a device of the class described, the combination of a base-plate, horizontally-swinging pivoted arms journaled thereon, a spring-yoke arranged to engage different notches in the pivoted arms, a pivoted piece connected by links to said pivoted arms, an operating-shaft, and a cam secured on said operating-shaft in position to engage said pivoted piece, substantially as described.

4. In a device of the class described, the combination of a base-plate, horizontally-swinging pivoted arms journaled thereon, stops adjustably mounted in said pivoted arms to regulate the set or clearance given a saw, a pivoted piece connected by links to said pivoted arms, an operating-shaft, and a cam secured upon said operating-shaft in position to engage said pivoted piece, substantially as described.

5. In a machine of the class described the combination of pivoted arms, adjustable hammers carried by said arms, a spring-yoke for simultaneously actuating said arms, a pivoted

piece connected by links to said pivoted arms, and an operating-shaft and cam engaging said piece, substantially as described.

6. A device for clamping and holding a saw, comprising tapering side pieces, tapering jaws fitting between said side pieces, and a spring-pressed post for engaging and normally wedging said jaws into engagement with the sides of a saw, substantially as described.

7. A device for clamping and holding a saw, comprising tapering side pieces, tapering jaws fitting between said side pieces, a spring-pressed post for engaging and normally wedging said jaws into engagement with the sides of a saw, a screw connecting said jaws, and a spring mounted on said screw, and normally tending to open said jaws, substantially as described.

8. In a machine of the class described, the combination of side pieces 11 and 12, tapering jaws 13 and 14 fitting between said side pieces, a spring for normally wedging said jaws into engagement with the sides of a saw, and a feed mechanism for advancing the saw, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

AUBREY M. PINEO.

Witnesses:

CHARLOTTE D. FRELICK,
C. H. VANDUZEN.