

(No Model.)

T. SEELY.
SAW SWAGE.

No. 543,509.

Patented July 30, 1895.

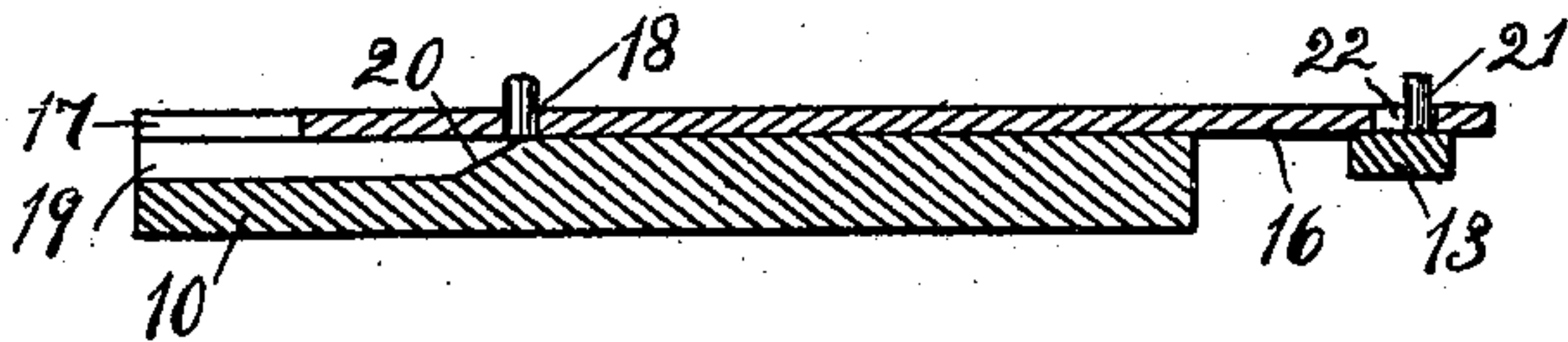


Fig. 5.

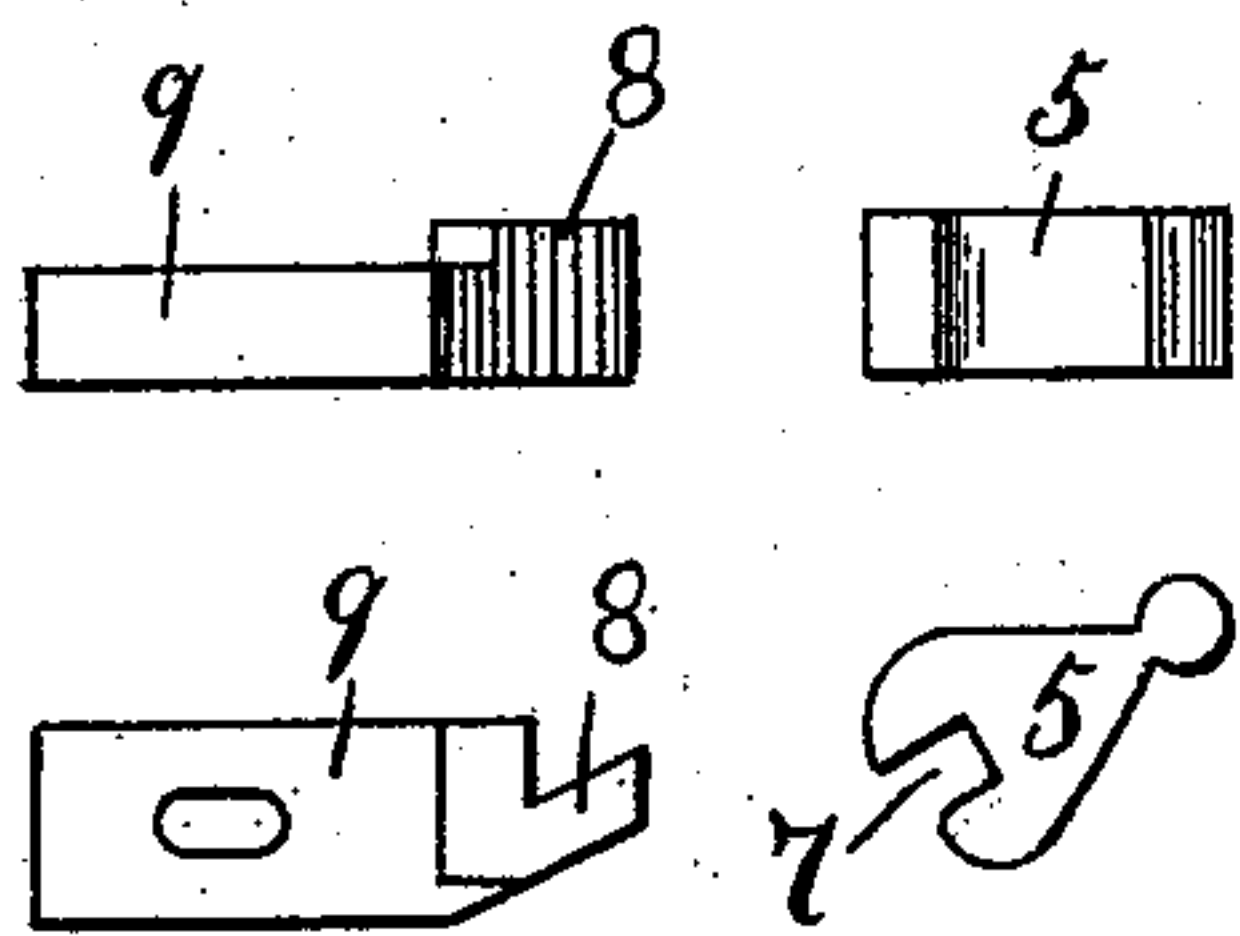


Fig. 2.

Fig. 3.

Fig. 4.

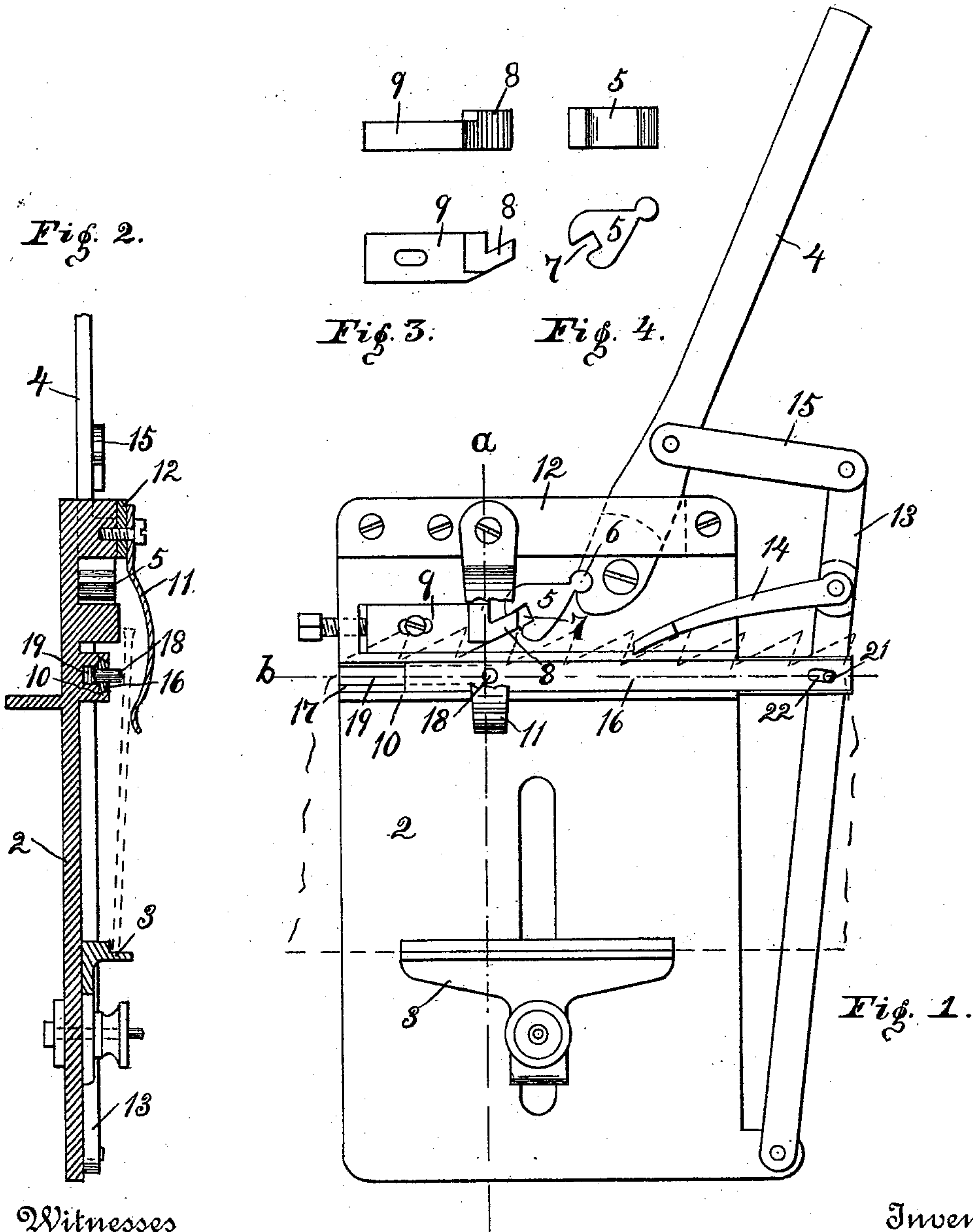


Fig. 1.

Witnesses
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UNITED STATES PATENT OFFICE.

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SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 543,509, dated July 30, 1895.

Application filed May 6, 1895. Serial No. 548,215. (No model.)

To all whom it may concern:

Be it known that I, THOMAS SEELY, a citizen of the United States, residing at Marshall, in the county of Parke and State of Indiana, have invented a new and useful Improvement in Saw-Swages, of which the following is a specification.

My invention relates to an improved machine for swaging the teeth of band-saws.

The object of my improvement is to provide means whereby the point of the tooth is first compressed and then drawn outward and means whereby the saw-teeth are fed to the swaging-die automatically.

The accompanying drawings illustrate my invention.

Figure 1 represents a front elevation. Fig. 2 represents a vertical section at *a*, Fig. 1. Fig. 3 represents a plan and an edge view of the swaging-anvil. Fig. 4 represents a plan and an edge view of the swaging-die. Fig. 5 represents a transverse section at *b*, Fig. 1.

In the drawings, 2 indicates the main frame or bed-plate of the machine. A rest 3 for supporting the back of the saw is adjustably mounted on the bed-plate, so as to be adjustable toward or from the swaging-die. The operating-lever 4 is pivoted to the face of the bed-plate near its upper end, so as to swing in a vertical plane thereon. The swaging-die 5 is connected with the short end of the operating-lever by means of the knuckle-joint 6, so as to lie upon the surface of the bed-plate in the same plane as the operating-lever. The free end of the swaging-die is provided with an open slot 7, which engages the projecting horn 8 of the anvil 9, which is adjustably secured to the face of the bed-plate. The arrangement is such that the upper edge of slot 7 is at all times in engagement with the upper surface of the horn 8 of the anvil, so that the horn forms a guide for the movement of the swaging-die. The outer corner of the lower edge of the slot 7 is rounded, as shown, so that when the back edge of the saw-tooth is supported by the inclined lower edge of the horn of the anvil and the rounded corner of the swaging-die is forced against the front of the tooth a rounded indentation is formed in the front edge of the tooth.

Arranged beneath the anvil and the swaging-die and extending transversely across the

bed-plate is a rib 10, against which the side of the saw (shown in dotted lines) rests. The saw is held against rib 10 by means of a flat spring 11, which is secured at one end to the cap-plate 12. For the purpose of automatically feeding the teeth of the saw in succession to the swaging-die I pivot to the lower end of the bed-plate a lever 13, carrying a pawl 14, the free end of which is adapted to engage the teeth of the saw, the free end of the lever being connected with the operating-lever by means of a link 15.

That portion of the anvil which is opposed to the swaging-die is raised above the surface of rib 10, so as to support the back of the saw-tooth when the side of the saw-plate rests against the surface of the rib, so that it is necessary that the saw-plate be pushed outward after the tooth has been swaged, so as to pass over the anvil in feeding the next tooth into position. For the purpose of accomplishing this result automatically by the movement of the operating-lever I have provided the following mechanism: A flat bar 16 is fitted into ways 17 formed in the surface of rib 10, so that bar 16 will slide longitudinally therein and lie flush with the surface of the rib. Mounted loosely in bar 16 is a pin 18, which passes through the bar and rests at its lower end upon the bottom of a groove 19 formed in the bottom of way 17. One end of groove 19 terminates in an incline 20, Fig. 5, and the arrangement is such that when bar 16 is slid longitudinally, so as to carry pin 18 opposite the straight portion of groove 20, the outer end of the pin is flush with the surface of the bar, but when the bar is drawn outward, so as to bring the pin opposite the incline 20, the pin is projected outward, as illustrated in Figs. 2 and 5. Bar 16 is moved longitudinally by means of a pin 21 projecting from lever 13 and engaging a slot 22 formed in the bar.

The operation of my device is as follows: The saw being in position with the back of a tooth resting against the lower inclined edge of the horn of the anvil and operating-lever being thrown forward at an angle opposite that shown in Fig. 1, the point of the tooth is embraced between the anvil and the rounded corner of the swaging-die. The operating-lever is then swung to the position

indicated in Fig. 1. The first part of its movement operates to thrust the swaging-die toward the anvil with a swinging movement, thus indenting and spreading the point of the tooth, and then, by the further movement of the lever, drawing the point outward, the movement of the operating end of the swaging-die being guided by the entrance of the horn of the anvil into the slot 7 in the die.

During the movement of the operating-lever pawl 14 is slipped over one tooth ready to engage another, and bar 16 at first remaining unmoved, while pin 21 traverses slot 22, and then during the latter part of the movement being drawn into the position shown in Figs. 1 and 5, thus bringing pin 18 into engagement with the incline 20 and pushing the saw-blade outward, so as to clear the anvil, as illustrated in Fig. 2.

During the first part of the return movement of the operating-lever pawl 14 engages the saw and pushes the tooth which has been operated upon past the operating-face of the anvil, bar 16 remaining unmoved until the pin 21 has traversed slot 22 and then being pushed longitudinally, so as to carry pin 18 opposite the deeper portion of groove 19, thus permitting spring 11 to force the saw again into place against rib 10.

I claim as my invention—

1. In a saw-swage, the combination of the bed-plate, means for supporting the saw

thereon, the operating lever pivoted to the bed-plate, the swaging-die hinged to the operating lever and provided at its opposite end with an open slot having a convex swaging surface formed on one of its edges, and the anvil having an inclined surface adapted to support the back of a saw-tooth, said anvil projecting into the slot in the swaging-die so as to form a guide therefor, all arranged to co-operate substantially as and for the purpose set forth.

2. In a saw-swage, the combination with the bed-plate, the anvil, the operating lever, and the swaging-die opposed to said anvil, of the rib provided with ways arranged on the bed-plate so as to support the side of the saw, and having formed therein a groove one end of which is inclined as described, the bar arranged to slide longitudinally in the ways of said rib, the pin mounted loosely in said bar and engaging said groove, and intermediate connecting mechanism connecting said bar and the operating lever, whereby the bar is actuated by the movements of the operating lever, all substantially as and for the purpose set forth.

THOMAS SEELY.

Witnesses:

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