J. SIMPSON.

SAW SET.

APPLICATION FILED OCT. 16, 1911.

1,017,475. Patented Feb. 13, 1912.

Fig. 1.

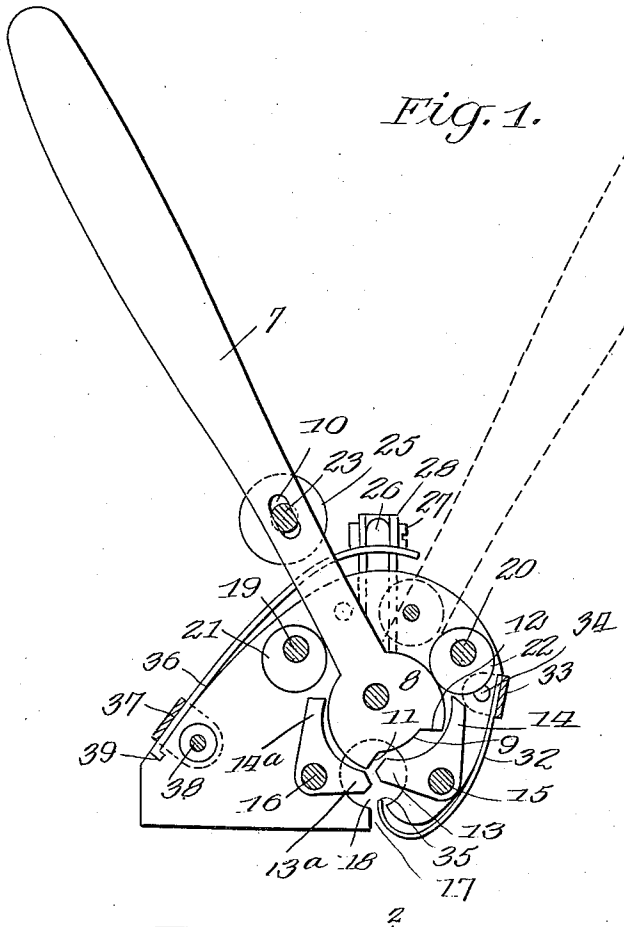
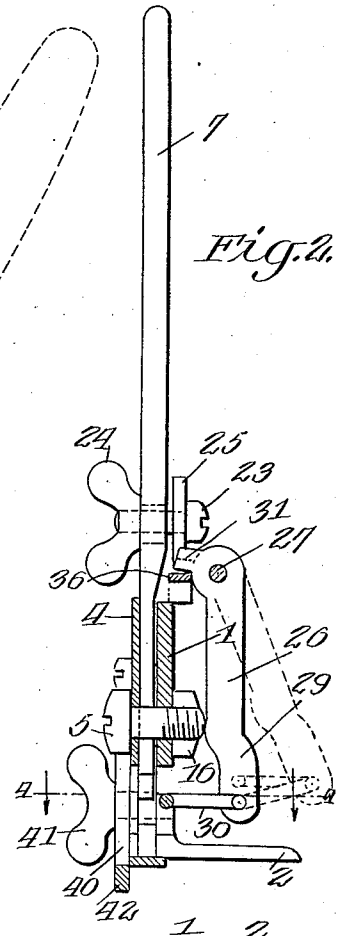


Fig. 2.



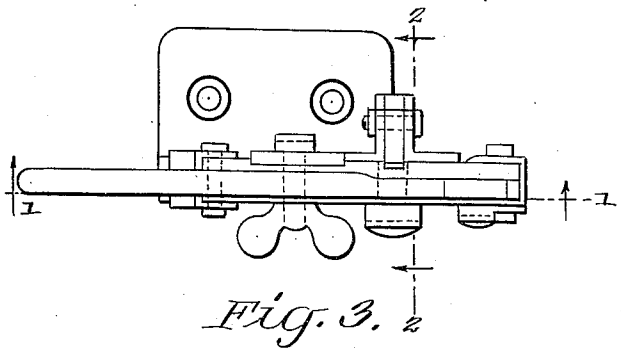
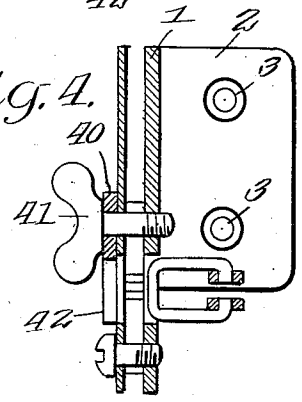


Fig. 3.

Fig. 4.



WITNESSES

Samuel E. Wade.

J. Middleton

INVENTOR

JOHN SIMPSON,

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN SIMPSON, OF CHICAGO, ILLINOIS.

SAW-SET.

1,017,475. Specification of Letters Patent. Patented Feb. 13, 1912.

Application filed October 16, 1911. Serial No. 654,812.

To all whom it may concern:

Be it known that I, JOHN SIMPSON, a citizen of the United States, and a resident of Chicago, in the county of Cook, State of Illinois, have invented a new and useful Improvement in Saw-Sets, of which the following is a specification.

My invention is an improvement in saw sets, and has for its object the provision of a simple, inexpensive, automatic device of the character specified especially designed for use with band saws, and wherein the setting mechanism may be adjusted for saws of various widths and for saws having teeth of different sizes.

In the drawings: Figure 1 is a section on the line 1—1 of Fig. 3; Fig. 2 is a section on the line 2—2 of the same figure; Fig. 3 is a plan view; and Fig. 4 is a section on the line 4—4 of Fig. 2.

The present embodiment of the invention comprises a plate 1 provided with an angular outwardly extending foot 2 which is provided with openings 3 for permitting the plate to be secured to a support, if desired. A second plate 4 is arranged alongside the plate 1 in spaced relation, and a screw bolt 5 is passed through alined openings in the plates 1 and 4 and is engaged by a nut 6 to hold the plates together.

A lever 7 is journaled on the bolt 5, and the said lever is provided with a circular head 8 eccentric to the bolt 5. An arc-shaped segment 9 is cut away from the head on the opposite side from the lever, and the lever is provided with a longitudinal slot 10 above the upper edge of plate 1.

The cut away portion 9 of the head forms a pair of oppositely facing jaws 11 and 12 on the head, and each of the jaws coöperates with one arm of an elbow lever to be described. Each lever consists of two arms 13 and 14 and 13^a and 14^a, respectively, the former lever being pivoted to the plates 1 and 2 at 15 adjacent to jaw 12 and coöperating with jaw 11 while the latter is pivoted at 16 to the plate adjacent to jaw 11 and cooperates with jaw 12.

The pivot pins 15 and 16 are connected with both plates 1 and 2, and each plate is provided with a transverse slot or passage 17 for the saw (not shown). Each plate is also provided with a circular opening 18 into which the slot opens. The arms 13 and 13^a of the elbow levers are setting jaws and, together with the jaws 11 and 12 of the head, extend partially across the said opening 18.

A pin 19 connects the plates 1 and 2 on the side of lever 7 adjacent to jaw 11, and a pin 20 connects the plates on the opposite side of the lever. A wheel 21 is secured to pin 19, and a wheel 22 to pin 20, and both wheels are eccentric to the pins. A screw bolt 23 is passed through the slot 10 and is engaged by a wing nut 24 on the opposite side of the lever, and a cam wheel 25 is journaled eccentrically on the bolt.

A lever 26 is pivoted at one end on a pin 27, which is passed through lugs 28 extending laterally from plate 1, the lever being arranged between the lugs. The lower end 29 of the lever is offset laterally outward, and a loop 30 is journaled at one end in the said offset portion. A lug 31 extends inwardly from the upper end of the lever into position for engagement by the cam wheel 25 to swing the lever 26 when the lever 7 is moved into the dotted line position of Fig. 1. The loop 30 normally rests upon the saw, and when the lever 26 is swung as above described the loop engages a tooth of the saw and advances the saw one tooth.

One end of a plate spring 32 is secured to the edges of plates 1 and 2 by means of a clip or stirrup 33, whose arms engage on opposite sides of the plates and are secured thereto by a pin 34. The free end of the spring extends into the slot 17 and forms one side of the passage for the saw, the opposite side being formed by the opposite side of the slot.

The free end of the spring is bent upward substantially parallel with the wall of the slot, as indicated at 35, and holds the saw firmly but yieldingly against the said wall. A spring 36 is provided for returning lever 26 to original position when swung by lever 7.

One end of the spring is held to the plates by a stirrup 37, whose arms embrace the plates and are secured thereto by a pin 38. The free end of the spring engages beneath the lug 31 and normally holds the lever 26 in the full line position of Fig. 2. The opposite end of spring 36 is provided with a lateral lug 39 which engages a notch in the plates to prevent slipping of the spring.

A guide plate 40 is provided for holding the saw at the proper height in the transverse passage formed by openings 17 and

18 and the plate is capable of adjustment, being held to the plate 4 by means of a set-screw 41 which is threaded through both plates 1 and 4.

The device is especially designed for band saws and is secured to a support, as, for instance, a bench, by means of screws or the like passing through the openings 3. The plate 40 is adjusted to the proper height, so that when the back of the saw rests on the extension 42 thereof the teeth of the saw will be at the proper height to be acted upon by the setting mechanism. After the plate has been secured in position by set-screw 41 the saw is placed thereon. The spring 10 presses the saw against the opposite wall of the passage and the loop 30 rests upon the edge of the saw between two teeth. The lever 7 is then moved to the dotted line position of Fig. 1 until the lever engages cam wheel 22. As lever 7 moves in the direction indicated the wheel 25 engages lug 31 and swings lever 26 into the dotted line position of Fig. 2. This movement of lever 26 takes place before the lever completes its movement, at the half way point in fact. The loop 30 moves the saw longitudinally and the arrangement is such that a tooth is brought directly between the arms 13 and 13ª of the elbow levers. As lever 7 engages cam wheel 22 the jaw 12 of the head engages the tooth and presses it against the beveled end of arm 13ª. The ends of the arms 13 and 13ª are beveled to correspond with the incline desired to give to the teeth, and the jaws 11 and 12 are beveled to fit jaws 13 and 13ª, respectively. Lever 7 is then swung in the opposite direction until it engages cam wheel 21, and in its passage lever 26 is again swung to advance another tooth which is set between jaws 11 and 13. This movement is repeated until every tooth has been set, the spring 36 returning lever 26 after every movement.

The extent of movement of the saw longitudinally may be varied by moving cam wheel 25 up or down in the slot, and the amount of set imparted to the teeth may be varied by changing the angular position of cam wheels 21 and 22. The said wheels limit the movement of lever 7. The plate 40 may also be raised or lowered in accordance with the width of the saw.

Each movement of lever 7 sets a tooth so that the device is speedy, and the amount of set may be varied to suit the character of work upon which the saw is to be used. Saws having teeth of different size, and saws of various width may be set with equal facility.

It will be noticed that each of the arms 14 and 14ª extends upwardly alongside the head and into position for engagement by the jaw of the head on that side of the head to swing the lever to bring the other arm 13 or 13ª into position for engagement by the other or remote jaw of the head. That is, each jaw of the head swings the jaw of the elbow lever into position to engage the other jaw of the head.

I claim:

1. A saw set comprising spaced substantially parallel plates, said plates having a transverse opening near their lower edges and a slot leading from the opening to the lower edge to form a passage for the saw, a lever provided with a head pivoted between the plates, the head having spaced oppositely arranged setting jaws extending into the passage and facing each other, an elbow lever pivoted between the plates on each side of the passage, each lever having one arm extending upwardly alongside the head and another arm extending laterally into the passage, said last named arm having a setting jaw for coöperating with the jaw at the opposite side of the head, the first named arm extending into position for engagement by the other jaw of the head to swing the lever to bring the first named arm into setting position, a spring at one side of the passage for pressing the saw toward the opposite side, a guide plate for engagement by the back of the saw, means for adjustably connecting said plate to one of the plates, a stop at each side of the lever for limiting the movement thereof, means for varying the position of the said stops, means for intermittently advancing the saw, and means on the lever for operating the said means intermediate the end of its movement in each direction, said means being adjustable on the lever.

2. A saw set comprising spaced substantially parallel plates, said plates having a transverse opening near their lower edges and a slot leading from the opening to the lower edge to form a passage for the saw, a lever provided with a head pivoted between the plates, the head having spaced oppositely arranged setting jaws extending into the passage and facing each other, an elbow lever pivoted between the plates on each side of the passage, each lever having one arm extending upwardly alongside the head and another arm extending laterally into the passage, said last named arm having a setting jaw for coöperating with the jaw at the opposite side of the head, the first named arm extending into position for engagement by the other jaw of the head to swing the lever to bring the first named arm into setting position, a spring at one side of the passage for pressing the saw toward the opposite side, a guide plate for engagement by the back of the saw, means for adjustably connecting said plate to one of the plates, an adjustable stop on each side of the lever for limiting the movement thereof, a guide for the saw, and means operated by

the lever on its movement in each direction between the stops for intermittently advancing the saw.

3. A saw set comprising spaced substantially parallel plates, said plates having a transverse opening near their lower edges and a slot leading from the opening to the lower edge to form a passage for the saw, a lever provided with a head pivoted between the plates, the head having spaced oppositely arranged setting jaws extending into the passage and facing each other, an elbow lever pivoted between the plates on each side of the passage, each lever having one arm extending upwardly alongside the head and another arm extending laterally into the passage, said last named arm having a setting jaw for cooperating with the jaw at the opposite side of the head, the first named arm extending into position for engagement by the other jaw of the head to swing the lever to bring the first named arm into setting position, an adjustable stop on each side of the lever for limiting the movement thereof, a guide for the saw, and means operated by the lever on its movement in each direction between the stops for intermittently advancing the saw.

4. A saw set comprising a lever pivoted at one end and provided with a setting jaw at said end on each side of the pivotal connection, an elbow lever pivoted at each side of the said pivotal connection, each lever having an arm extending into position for engagement by the adjacent jaw of the lever to rock the said elbow lever and an arm provided with a jaw for coöperating with the remote jaw of the lever when the elbow lever is rocked, a stop on each side of the lever and adjustable toward and from the lever to limit the movement thereof, and a guide for the saw adjustable toward and from the jaws.

5. A saw set comprising a lever pivoted at one end and provided with a setting jaw at said end on each side of the pivotal connection, an elbow lever pivoted at each side of the said pivotal connection, each lever having an arm extending into position for engagement by the adjacent jaw of the lever to rock the said elbow lever and an arm provided with a jaw for coöperating with the remote jaw of the lever when the elbow lever is rocked, and a stop on each side of the lever and adjustable toward and from the lever to limit the movement thereof.

6. A saw set comprising a lever pivoted at one end and provided with a setting jaw at said end on each side of the pivotal connection, an elbow lever pivoted at each side of the said pivotal connection, each lever having an arm extending into position for engagement by the adjacent jaw of the lever to rock the said elbow lever and an arm provided with a jaw for coöperating with the remote jaw of the lever when the elbow lever is rocked.

7. A saw set comprising a support, a lever pivoted at one end to the support and provided with a setting jaw at the said end on each side of the pivotal connection, a setting jaw on the support on each side of the lever, and means in connection with each of the said last-named jaws for engagement by the adjacent jaw of the lever to move the said setting jaw into position for engagement by the other setting jaw of the lever.

8. A saw set comprising a support, a lever pivoted at one end to the support and provided with a setting jaw on each side of the pivotal connection, a plurality of jaws on the support for coöperating with the jaws of the lever, and means operated by the movement of the lever for moving the said jaws into and out of engaging position with the jaws of the lever.

9. A saw set comprising a lever pivoted at one end and provided with a setting jaw at the said end on each side of the pivotal connection, an elbow lever pivoted at each side of the pivotal connection, each lever having an arm extending into position for engagement by the adjacent jaw of the lever to rock the said elbow lever, and an arm provided with a jaw for coöperating with the remote jaw of the lever when the elbow lever is rocked, means for feeding the saw, and means on the lever for operating the said feeding means.

10. A saw set comprising a lever pivoted at one end and provided with the setting jaw at the said end on each side of the pivotal connection, an elbow lever pivoted at each side of the pivotal connection, each lever having an arm extending into position for engagement by the adjacent jaw of the lever to rock the said elbow lever, and an arm provided with a jaw for coöperating with the remote jaw of the lever when the elbow lever is rocked.

JOHN SIMPSON.

Witnesses:
CHARLES E. McCOY,
J. H. SPENCER.