C. A. ERLANDSON.

MACHINE FOR SETTING SAWS.

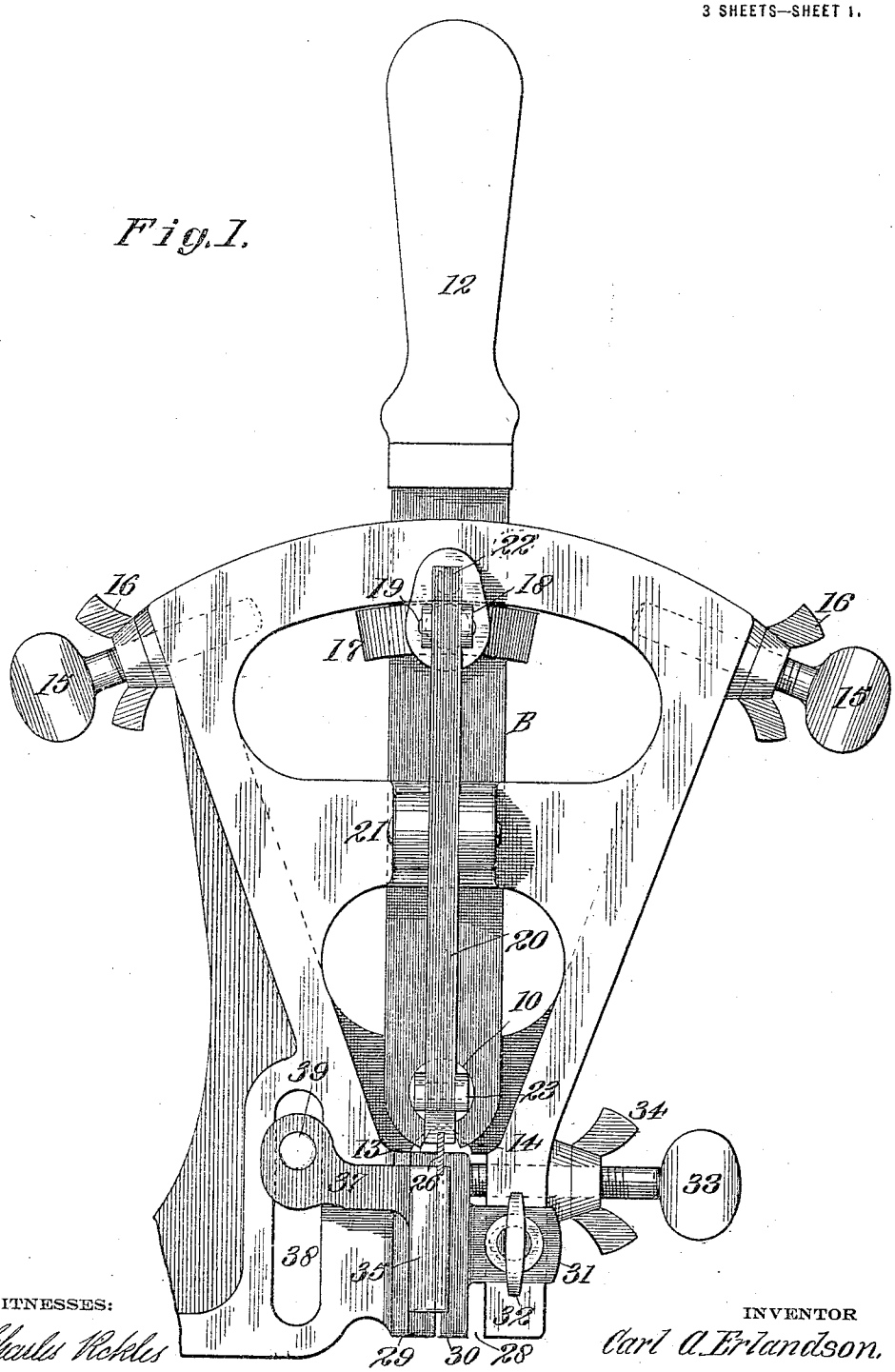
APPLICATION FILED JULY 30, 1917.

1,294,782.

Patented Feb. 18, 1919.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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3 SHEETS—SHEET 2.

Fig. 2.

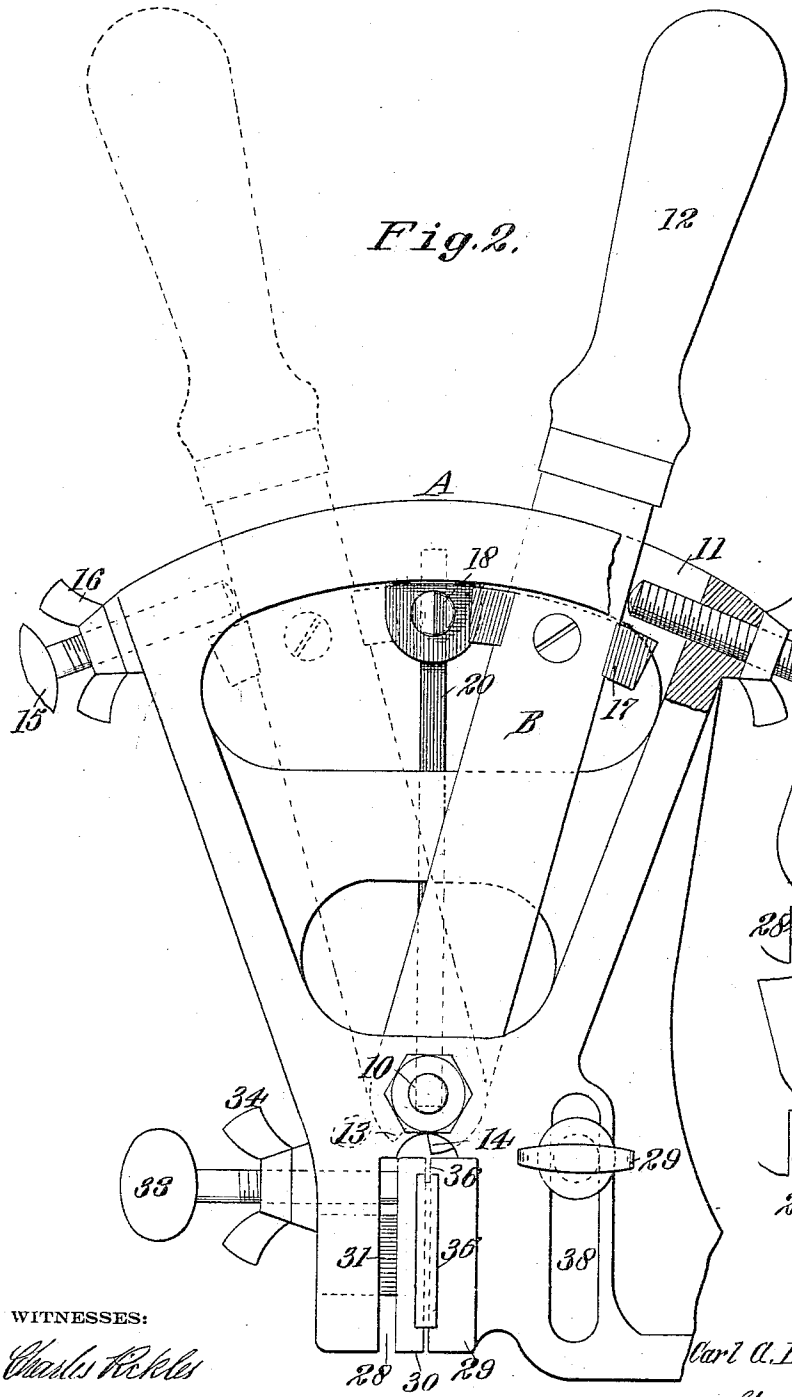


Fig. 3.

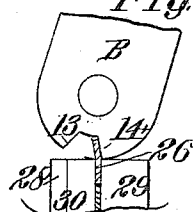
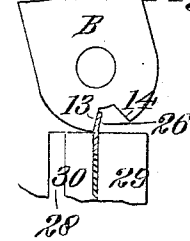


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

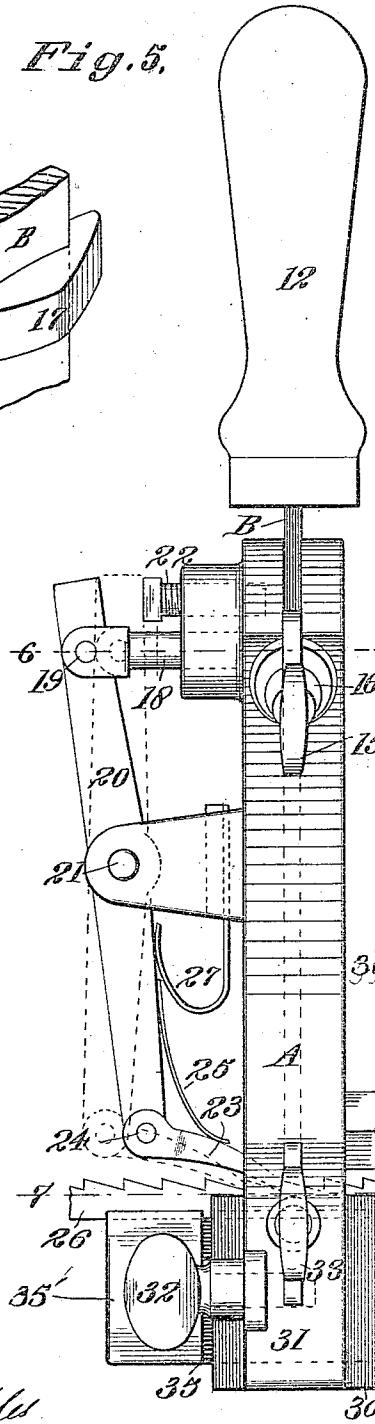


Fig. 8.

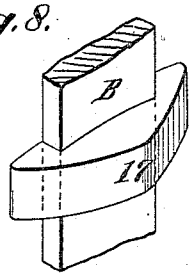


Fig. 6.

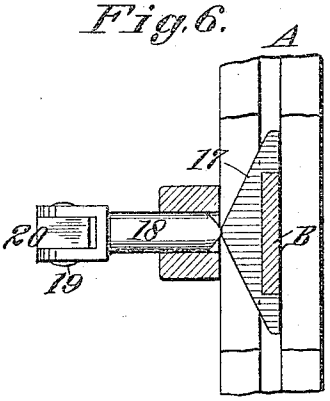


Fig. 9.

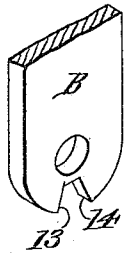
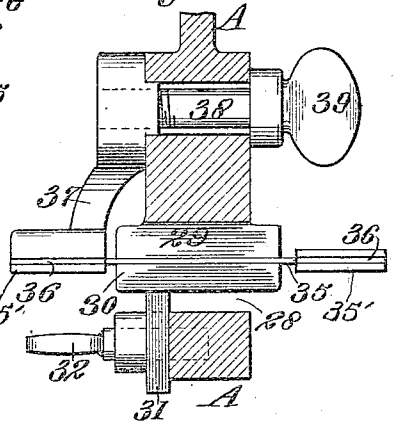


Fig. 7



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UNITED STATES PATENT OFFICE.

CARL A. ERLANDSON, OF SAN FRANCISCO, CALIFORNIA.

MACHINE FOR SETTING SAWS.

1,294,782. Specification of Letters Patent. Patented Feb. 18, 1919.

Application filed July 30, 1917. Serial No. 183,442.

To all whom it may concern:

Be it known that I, CARL A. ERLANDSON, a citizen of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Machines for Setting Saws, of which the following is a specification.

This invention relates to self-feeding saw-setting machines; and has for its object to simplify and improve the construction and operation thereof.

Generally, the invention comprises certain novel combinations and features of construction which readily permit complete and accurate adjustment without complication of parts. The device also combines the self-feeding and setting elements in such a way that ease of operation, as well as general structural simplicity, is attained, thus providing at low cost an exceedingly effective machine which can be used on an ordinary work-bench to set saws of all kinds.

One form of a machine embodying my invention is shown in the accompanying drawings, in which—

Figure 1 is an elevation of that side of the machine which carries the feeding mechanism.

Fig. 2 is an elevation of the opposite side, part of the frame being broken away to show one of the adjusting mechanisms for the setting lever.

Fig. 3 is a detail view, showing the operation of the setting lever in giving the required set to a saw-tooth.

Fig. 4 is a similar detail view, showing the lever setting a saw-tooth in the opposite direction.

Fig. 5 is a front elevation.

Fig. 6 is a cross section on the line 6—6 of Fig. 5.

Fig. 7 is a cross section on the line 7—7 of Fig. 5, the saw not being shown.

Fig. 8 is a detail view of a portion of the setting lever, showing the actuating cam for the feeding mechanism.

Fig. 9 is a detail view of another portion of the setting lever, showing the faces which engage the saw teeth and the position of the fulcrum of the lever in relation thereto.

The machine consists principally of the frame A, preferably cast integral with a supporting base not shown. The tooth setting member consists of the lever B, fulcrumed on the frame at 10 (Fig. 2), and extending up through a slot 11 in the upper portion of the frame. The upper end of lever B is fitted with a suitable handle 12, by which it may be reciprocated in the slot 11.

In the lower end of lever B a notch is formed, leaving the two faces 13 and 14 (see Fig. 9), which, as will be explained presently, serve to bend the saw teeth to give them the proper set. The faces 13 and 14 are suitably hardened and shaped with the required angle to give the necessary set to the teeth. The arc through which the lever B may be reciprocated, and consequently the amount of bend which the faces 13 and 14 will give to the saw teeth, is regulated by means of thumb screws 15 fitted in the frame at each end of the slot 11. These thumb screws are fitted with suitable lock nuts 16 with which they may be secured in proper adjustment.

The lever B, just below the portion which engages slot 11, is fitted with a double faced cam member 17, which engages a tappet 18 slidably mounted in the frame A, at a point approximately midway between the stops provided by the ends of the set-screws 15. The tappet 18 is pivotally connected at 19 to a vertically oscillating lever 20, fulcrumed on the frame A at 21 in a manner to permit movement of lever 20 in a plane at right angles to the plane in which lever B moves. A short portion of lever 20 projects above the pivotal connection 19 and contacts with the head of a set-screw 22 screwed into frame A. The adjustable stop thus provided serves as a means to regulate the amount of oscillation of lever 20 for a purpose to be explained later. A spring-pressed pawl 23 is pivotally mounted on the lower end of lever 20 at 24. The pawl 23 is movable in a vertical plane and is normally pressed downwardly by the spring 25 to engage the teeth of the saw to be set.

The form of machine represented in the drawings is one adapted to operate on band saws or other narrow saws. A portion of such a saw is shown at 26 in Fig. 5, with the pawl 23 operatively engaged therewith. As indicated in this figure, the pawl 23 is normally held in the retracted position shown in dotted lines by means of a spring 27 operating against the lever 20 to press it outwardly.

Referring to Fig. 2, it will be seen that the means provided to receive the saw and hold it up into engagement with pawl 23

and the setting member B comprise, generally, a vertical slot 28, open at the bottom, extending through the lower portion of frame A at right angles to the plane thereof and an adjustable carriage 35 to support the saw, said carriage being slidably mounted on the frame in a manner to be explained presently for vertical movement in said slot. The sides of slot 28 are fitted with jaws 29 and 30, the upper edges of which extend upwardly to a point just below the lower edges of the faces 13 and 14 of the setting member B. Jaw 30 is slidably mounted on the frame (see Fig. 1) for movement in a horizontal plane by means of an extension 31 fitting in a corresponding recess in the frame. The extension 31 is provided with a longitudinal slot which, together with the thumb screw 32 fitted therein, permits adjustment of the movable jaw in relation to the fixed one to provide a closely fitting groove for saw blades of any thickness to move in while they are being set. Further means to secure an accurate adjustment of this groove are provided by a lock nut 34 and a thumb screw 33, extending through the frame A at right angles to the face of jaw 30, and contracting with the back of said jaw. After the jaw is moved into preliminary adjustment, turning the screw 33 will move it into final position and also serve to lock it there by means of coöperation with the lock nut 34.

Referring to Fig. 7, it will be noted that carriage 35 comprises a thin strip of metal vertically movable between the jaws 29 and 30 and extending beyond the edges thereof on either side of the frame. The ends of the carriage 35 extending beyond the jaws are enlarged or formed thicker than the central portion between said jaws as shown at 35′ and have grooves 36 formed on their upper edges to receive the lower edge of a saw. The carriage 35 is slidably mounted on the frame A by means of a bracket 37 rigidly connected to one end of the carriage and slidably fitted in a vertical slot 38 in the frame A. A thumb screw 39 is fitted to the bracket 37 and extends through the slot 38 to adjustably secure the bracket 37 to the frame.

To operate the machine, the saw carriage 35 is lowered sufficiently to permit the insertion of a saw blade between jaws 29 and 30. If the saw is a circular band saw, instead of a straight saw, it is only necessary to lower the saw carriage to a sufficient distance below the lower edges of the jaws 29 and 30, in which position the blade may be readily inserted. The lower edge of the blade is then placed in grooves 36 and the carriage moved up into proper position and fastened there by the thumb screw 39. The jaw 30 is then moved against the saw until the blade is held closely between the jaws, but not so closely as to prevent forward movement of the blade through the machine.

The saw should be placed in the machine with its teeth in such a direction that positive engagement with pawl 23 will be permitted. The set screw 22 may then be adjusted to regulate the oscillation of lever 20, so that it will move the saw the proper distance with each actuation of the tappet 18. The amount of set to be given to the saw teeth is then regulated by adjusting the set screws 15 to fix the arc through which lever B may be reciprocated in slot 11. Referring to Figs. 3 and 4, it will be seen that the amount of reciprocation thus permitted will determine the degree to which the saw teeth will be bent.

The machine being properly adjusted, the lever is grasped by the handle and forcibly reciprocated in the slot 11. Referring to Figs. 2 and 5, it will be seen that in moving lever B from the full line position to the dotted line position in Fig. 2, the cam 18 will bring lever 20 and pawl 23 to the position shown in full lines in Fig. 5, thus moving the saw the proper distance to bring a tooth into position at the proper time to be struck and set by the face 13. It will be noted that as soon as cam 17 has passed the tappet 18, lever 20 and pawl 23 will assume the dotted line position shown in Fig. 5 and be ready to bring another saw tooth into position with the movement of lever B from the dotted line to the full line position in Fig. 2. In this manner continued reciprocation of lever B automatically feeds and sets the saw.

The great leverage provided by the construction shown permits operation with little effort, at the same time providing ample force to permanently bend the teeth. The manifold adjustments permit quick and accurate setting up of the machine, but because of the novel combinations and features of construction, they do not unnecessarily complicate the mechanism.

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

1. In a saw setting machine, a frame having a slot extending through the lower end thereof, a pair of jaws arranged in said slot, an extension projecting outwardly at right angles from the back of one of said jaws, said frame having a horizontal recess slidably receiving said extension, a screw for adjustably holding said extension in said recess, a screw carried by the frame and bearing against the back of said jaw, a saw carriage mounted between said jaws, a bracket rigidly connected to one end of said carriage, said frame having a vertical slot, a screw connected to the bracket and extending through said slot and having a nut

thereon to hold the screw in adjusted position in the slot, and means borne by the frame to set the saw teeth.

2. In a saw setting machine, a frame, a carriage having a relatively thin central portion to receive the back edge of the saw blade and having enlarged end portions grooved to receive the back edge of the saw blade, a pair of jaws engaging on opposite sides of the thin central portion of the carriage and disposed between the enlarged ends of the latter, means connected to one of the ends of the carriage and to the frame to support said carriage, and means borne by the frame to set the saw teeth.

3. In a saw setting machine, a frame, a jaw rigidly carried by the frame, a carriage having a part disposed opposite to a side of said carriage, a second jaw disposed opposite to the opposite side of said carriage, means to enable horizontal adjustment of the second jaw toward and away from the carriage, means to adjustably support said carriage for movement vertically between the jaws, and means borne by the frame to set the saw teeth.

4. In a saw setting machine, a frame, a carriage having a relatively thin central portion to receive the back edge of the saw blade and having enlarged end portions to engage the back edge of the saw, a pair of jaws mounted on opposite sides of the thin central portion of the carriage and between the enlarged end portions thereof, means to adjustably support the carriage between the jaws, means to enable horizontal adjustment of one of the jaws with respect to the carriage, and means borne by the frame to set the saw teeth.

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

CARL A. ERLANDSON.

Witnesses:
ANNA O. SVENSON,
OWEN H. SVENSON.