(No Model.) 2 Sheets—Sheet 1.

E. H. KETCHUM.

SAW SETTING DEVICE.

No. 287,835. Patented Nov. 6, 1883.

Fig. 1.

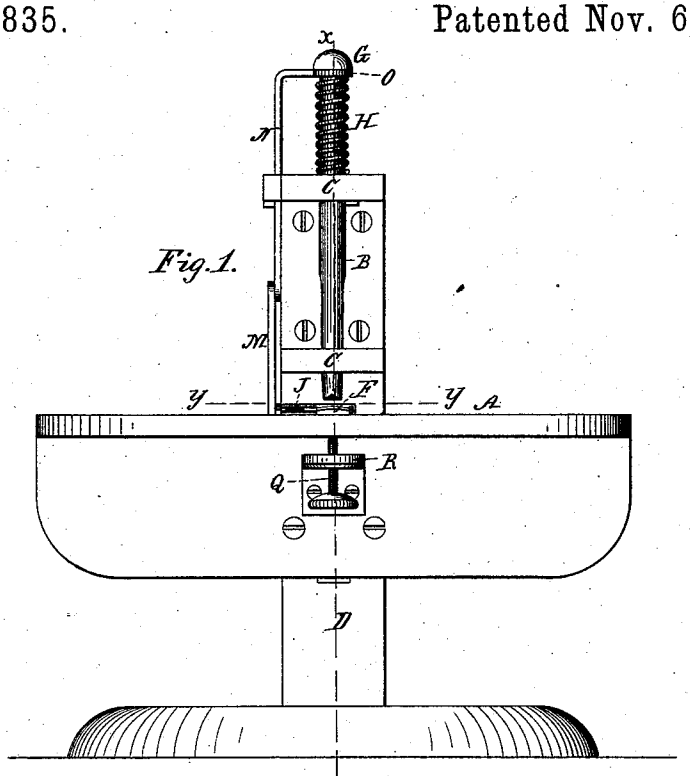
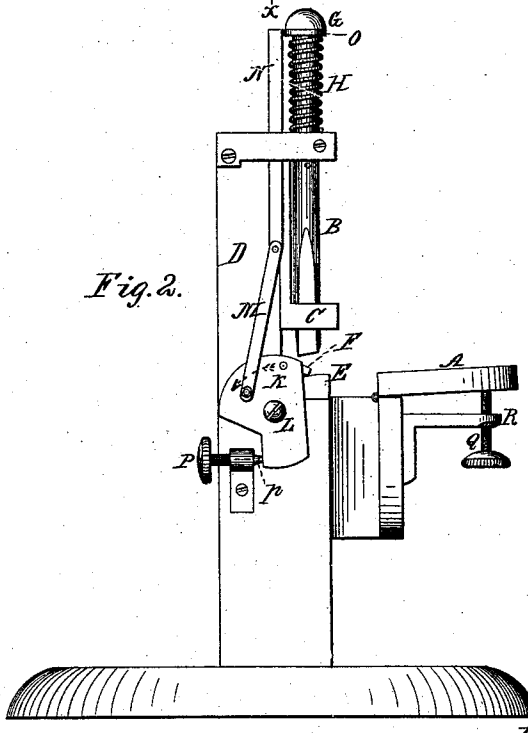


Fig. 2.



Witnesses
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Inventor:
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(No Model.) 2 Sheets—Sheet 2.

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No. 287,835. Patented Nov. 6, 1883.

Fig. 3.

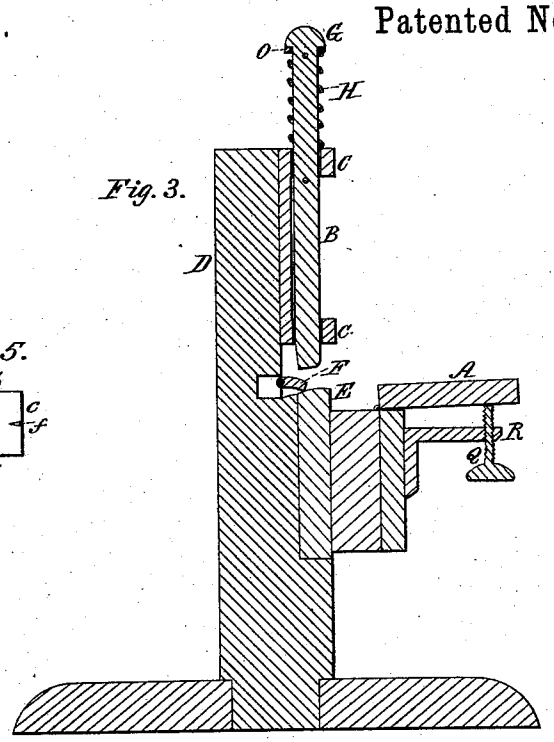

Fig. 5.

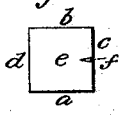

Fig. 6.

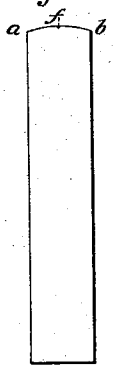

Fig. 4.

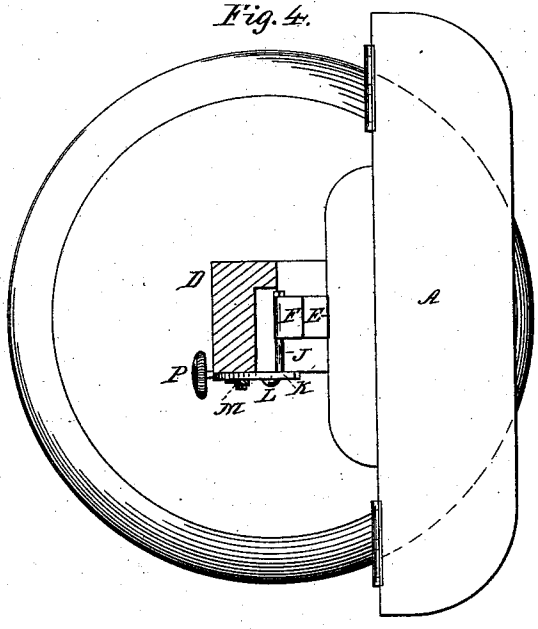

Fig. 7.

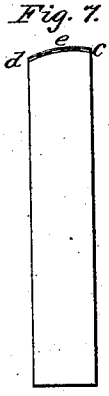

Fig. 8.

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UNITED STATES PATENT OFFICE.

EVERETT H. KETCHUM, OF RICEVILLE, PENNSYLVANIA.

SAW-SETTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 287,835, dated November 6, 1883.

Application filed March 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, EVERETT H. KETCHUM, of Riceville, in the county of Crawford and State of Pennsylvania, have invented a certain new and Improved Saw-Setting Device; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and to the figures and letters of reference marked thereon.

The invention consists of a novel saw-setting device, constructed substantially as will be hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 represents a front view of my improved device; Fig. 2, a side elevation of the same; Fig. 3, a longitudinal vertical section taken on the line *x x* of Fig. 1; Fig. 4, a horizontal section taken on the line *y y* of Fig. 1. Figs. 5, 6, and 7 are respectively top plan, front, and side views of the bed-piece or anvil; and Fig. 8 is a view of a modified form of gage.

Similar letters of reference in the several figures denote the same parts.

A represents the table on which the blade of the saw to be set rests; B, a vertically-moving punch mounted in suitable guides or cross-heads, C, secured to an upright standard, D; E, a bed-piece or anvil mounted in the standard, and with which the punch B co-operates to set the teeth; and F a gage for regulating the length of the set from the point of the tooth.

The bed-piece or anvil E is of steel, and has, preferably, four straight sides, forming a rectangle, a flat lower end, and an upper end or operating-surface outwardly curved or rounded from its side edge, *a*, to its opposite side edge, *b*, and also outwardly curved or rounded from its front edge, *c*, back down to its opposite rear edge, *d*, slightly crowning at the point *e*, as shown clearly in Figs. 5 and 7. A mark is by preference made at the front, at *f*, to indicate the middle of the bed-piece, and to serve as a guide in adjusting a saw-tooth in position. The lower end or operating-face of the movable punch B is inclined downwardly and backwardly from front to rear, and when brought down strikes the transverse middle of the bed-piece at the rear.

The upper end of the punch is provided with a head, G, adapted to receive the blows of a hammer or mallet employed to strike the punch downward toward the bed-piece or anvil, and between the head G and the uppermost guide or cross-head, C, and surrounding the punch, is a spiral spring, H, whose function is, among others, to retract the punch away from the bed-piece after it is struck.

The gage F consists of a small metal plate shaped to substantially conform to the transverse contour of the bed-piece or anvil, and hinged at its rear edge to a short rod or shaft, J, which projects laterally from a segmental plate, K, pivoted at L to the upright standard D, and connected by a jointed rod, M, to a sliding rod or bar, N, which has a perforated horizontal arm, O, that encircles the punch between its head G and the spiral spring H.

Normally the front edge of the gage projects forward upon the bed-piece or anvil more or less, and serves as a stop to the point of the tooth to be operated upon, and gages or regulates the extent of the set. Each time the punch is struck and forced down, slide-bar N and connecting-rod M are also forced down, and the pivoted plate K is tilted backward, as indicated by the arrow, thus, through the instrumentality of the horizontal short shaft J, withdrawing the gage from off the bed-piece and out of the path of the descending punch. As the punch again rises under the elastic force of the spring a reverse motion of the parts takes place, and the gage is again projected over the bed-piece into position to properly arrest and gage the next tooth to be operated upon. The distance which the gage is allowed to project over onto the bed-piece can be regulated by means of a set-screw, P, whose point *p* forms a back-stop for the lower end of the vibrating plate K, and provision is thus made for giving the saw-teeth a longer or shorter set. While the teeth of the saw are being operated upon, the blade lies flat upon the table A. This table, it will be observed, is hinged at its inner edge, and is supported at its outer edge upon the end of an adjusting-screw, Q, working through a screw-threaded arm, R. By varying the position of the table by means of the screw Q, the extent of the set—that is to say, the amount of divergence of the teeth out of line—can be very accurately regulated. The function of

the adjustable table must not be confounded with that of the gage F, for while the latter regulates and determines the length of the set, or, in other words, the length of the part of the tooth set out or diverged, the former (the table) regulates the extent of the divergence.

Where small saws—*i. e.*, saws whose teeth are quite close together—are to be set, a gage of wedge form, tapering outward, may be employed, such as shown in Fig. 8, instead of the one shown in the other figures, the object in using such tapered form of gage being to prevent its engagement with more than one tooth at once.

For taking the set out of a saw, the same device herein described may be employed, it only being necessary to turn the bed-piece or anvil upside down, so as to expose its flat end, and to substitute a flat square-ended punch for the one shown.

In order to more easily remove the bed-piece or anvil, the mortise in the standard D may be made deeper at the lower end or bottom, and made to extend upwardly on a true line nearly to the top at the back, and to bring the bed-piece or anvil into an upright position an adjustable set-screw may be introduced through the back side of the upright standard and made to press and hold the bed-piece or anvil in position.

Having thus described my invention, I claim as new—

1. The combination, with the bed-piece or anvil, of the vertically-moving punch, the gage, and connections, substantially as described, between the gage and the punch, whereby the gage is withdrawn as the punch descends, and projected again as the punch ascends, substantially as described.

2. The combination, with the bed-piece or anvil, of the vertically-moving punch, the gage, connections, substantially as described, between the gage and punch, and the stop for regulating the extent of the projection of the gage over the bed-piece, substantially as described.

3. The combination, with the punch and bed-piece or anvil, of the hinged gage, the vibrating plate carrying the short shaft to which the gage is hinged, the connections between the vibrating plate and the punch, and the spring, substantially as described.

4. The combination, with the vibrating plate and the gage, of the connections between said plate and the punch, the spring, and the adjustable screw forming the back-stop of the plate, substantially as described.

5. The combination of the bed-plate, the punch, the gage, the connections by which the gage is operated from the punch, and the hinged adjustable table, the whole arranged and combined substantially as described.

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Witnesses:
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CHAS. E. MARTIN,
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