

(No Model.)

2 Sheets—Sheet 1.

C. MORRILL.

DEVICE FOR SETTING SAWS.

No. 354,167.

Patented Dec. 14, 1886.

Fig. 1.

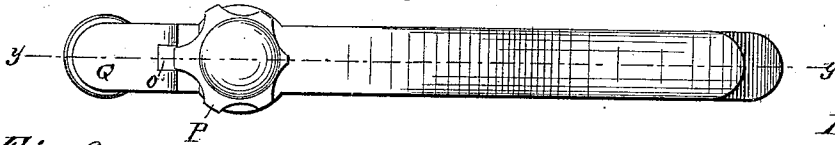


Fig. 3.

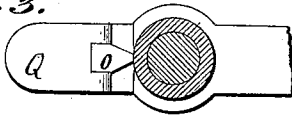


Fig. 7.

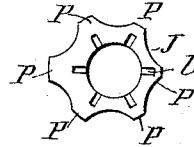


Fig. 8.



Fig. 2.

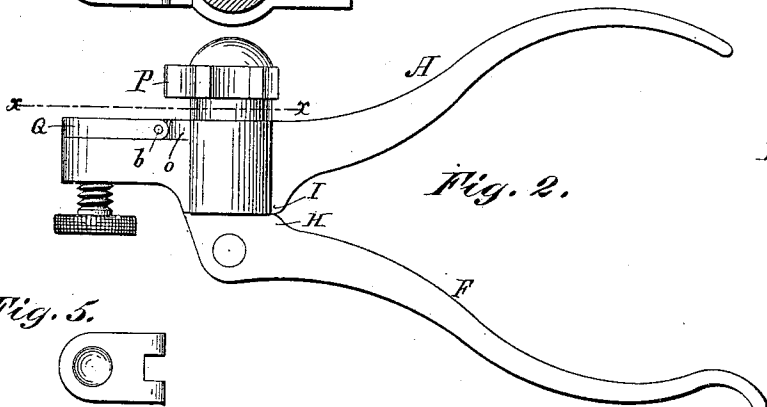


Fig. 5.

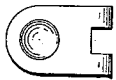


Fig. 9. Fig. 10.

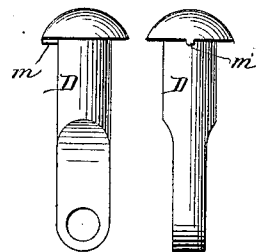


Fig. 4.

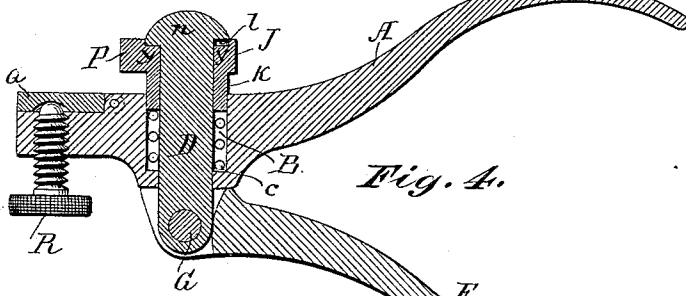


Fig. 6.

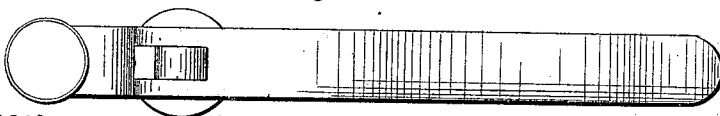
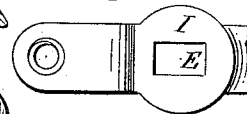


Fig. 11.



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2 Sheets—Sheet 2.

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Fig. 12.

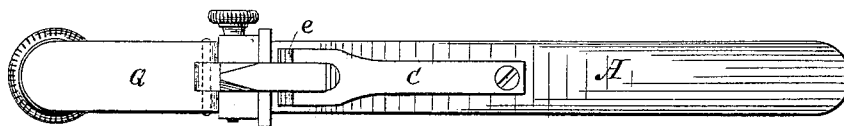


Fig. 13.

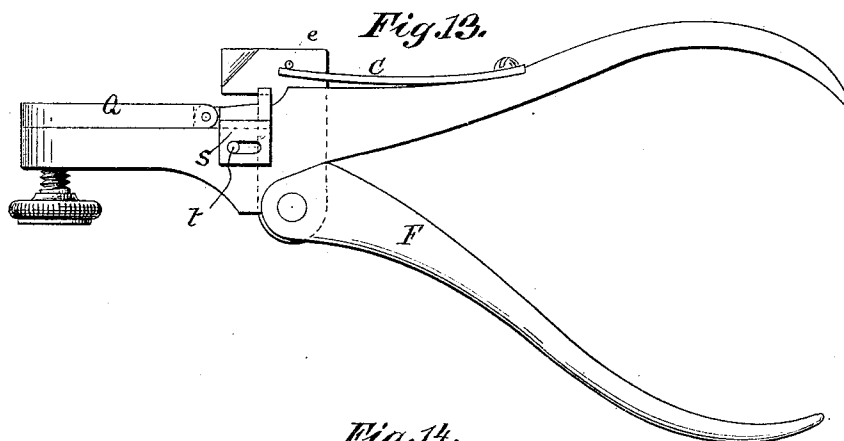


Fig. 14.

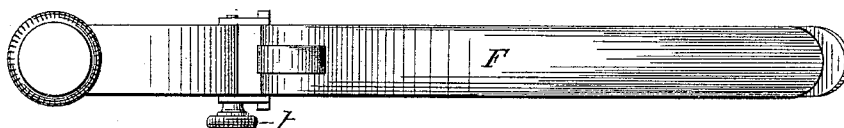


Fig. 15.

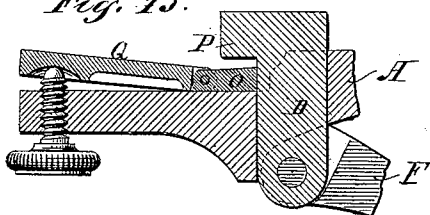


Fig. 16.

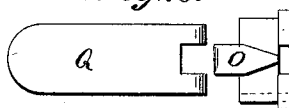


Fig. 17.

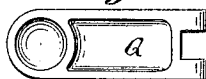


Fig. 18.

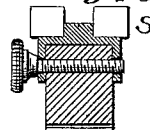
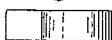


Fig. 19.



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UNITED STATES PATENT OFFICE.

CHARLES MORRILL, OF JERSEY CITY, NEW JERSEY.

DEVICE FOR SETTING SAWS.

SPECIFICATION forming part of Letters Patent No. 354,167, dated December 14, 1886.

Application filed March 4, 1886. Serial No. 193,925. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MORRILL, a citizen of the United States, residing in Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Tools for Setting Saws, of which the following is a description in such full, clear, exact, and concise terms as to enable any one skilled in the art to which my invention belongs or with which it is most nearly connected to make and use the same, reference being had to the accompanying drawings, making part of this specification, and to the letters and figures of reference marked thereon.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

Figure 1 of said drawings is a top view, and Fig. 2 a side elevation, of said tool in its entirety. Fig. 3 is a horizontal section on the line *x x*, and Fig. 4 a vertical longitudinal section on the line *y y*. Fig. 6 is a plan of the tool viewed from the bottom side thereof, and Figs. 5, 7, 8, 9, 10, and 11 are parts in detail, as hereinafter described, the remaining figures of drawings being illustrations of what may be regarded as mere substitutes for the several parts of the tool described.

My invention consists of certain novel devices and combinations of devices comprising an improved tool for setting saws, the features of novelty being designated in the claims concluding this specification or description of the tool as a whole.

A is a handle, shaped like an ordinary plier-handle. In the top of this handle a socket, B, is formed, and within this socket a setting-block, *y*, and a spiral spring, *c*, is set, and both of which are made to embrace a setting-rod, D, two views of which are shown at Figs. 9 and 10. Through the bottom of the socket B a right-angular hole, E, is cut, as in Fig. 11, and into this hole the lower end of the setting-rod D is snugly fitted, leaving it free, however, to rise and fall without pinching in the hole. To the lower end of the setting-rod D the cam-lever F is connected by a pin, G, the cam H acting as a fulcrum against the outside face, I, of the lower end of the socket B, by which the setting rod and block are drawn down by the lever F, the cam H sliding on the

face I as the rod moves up or down in the socket.

The office of the cam-lever is to force the setting-block down, while that of the spring is to raise it up to the position shown in the drawings.

Around the upper end of the setting-block *y* a series of setting-jaws, P P, are made, of different lengths and widths, said setting-jaws being set upon a circle around the setting-block, but eccentric to its axis, so that as the setting-block is rotated around the setting-rod the setting-jaws project more or less over the anvil *o*, thus adapting the size of the setting-jaws to the size of the saw-tooth to be set.

Immediately in front of the socket B the anvil *o* is made on the top side of the handle A, upon which the saw-teeth are set, the angle or amount of set being regulated by the angle of the plate Q, as hereinafter described.

In the top face of the setting-block there are cut a series of notches, *l*, into any one of which the catch or projection *m*, made on the under side of the head *n* of the rod D, is adapted to fit. Now, by pressing the setting-block down on the spring *c* the catch *m* is released from the notch *l*, leaving the block free to turn on the rod until the next notch is caught by the projection *m*, and so on around the entire periphery of the setting block, each notch bringing a setting-jaw of different length and breadth over the anvil, by which the tooth of the saw is nipped, held between the jaw and the anvil, and set. These setting-jaws, as before stated, are of various sizes around the periphery of the setting-block, and are made to harmonize in size and form with the saw-teeth to be set, be they coarse or fine.

To the anvil *o*, under the setting-jaws, is hinged at *v* an adjustable plate, Q, the top side of which is shown by Figs. 1 and 3, and the angle of which with reference to the face of the anvil is regulated by the adjusting-screw R. Now, by the angle of this plate with reference to the face of the anvil is regulated the amount of set to be put in the saw, whether the same be coarse or fine.

The operation is as follows: Let the plate Q be set at the desired angle and let the saw-tooth be inserted on the plate under a suitable setting-jaw, P. As the rod D is drawn down by the lever F the jaw P will strike the saw-

tooth and force it down on the anvil and set it to an angle corresponding to the angle of the plate Q with reference to the face of the anvil. In this operation it will be observed that the force and device by which the saw-tooth is set is applied to the outside or cutting edge of the tooth at its base, bending it up, instead of to the inside or chamfered edge of the tooth, bending it down, as in ordinary saw-sets. The effect of this tool is not only to set every tooth of the saw to the same degree, as in the ordinary saw-set, but it also bends each tooth to the same degree on the same line along the whole length of the saw. The ordinary saw-set bends each tooth over a given distance; but it does not make the angle of each tooth the same distance from the point. The punch in the ordinary saw-set strikes first the point of the tooth, and bends the tooth over without determining exactly the point at which the metal must bend, whereas in the set above described the setting force strikes first the base of the tooth at a given point and forces the tooth to bend at that point, and all the teeth exactly alike, the whole tooth being forced over to the desired angle, instead of the point of the tooth being merely bent over, as in the ordinary set. To this end it is not only desirable that the setting-jaw should first strike the base of the saw-tooth, but it is also desirable that the power bending the tooth should be applied gradually—that is, it should not be applied by a sudden stroke or blow, which has a tendency to break the tooth rather than bend it, and which does not kill the elasticity of the metal before the tooth is relieved of the setting force, and hence sets the teeth irregularly. It is also desirable that the blade of the saw be supported near the setting-line of the teeth, and that the setting force be applied on the side opposite that which is so supported.

The same invention in some of its essential features, but in a modified form, is shown by Figs. 12, 13, 14, and 15, the latter figure being a section of the other three. In this case the setting block, rod, and jaw are all in one piece, the anvil being shown at o, the setting-jaws at P, and the rod at D. The cam-lever F in this case is the same as before, and so also is the frame-lever A and the setting-plate Q; but the spring C in this case is applied to the setting-block on the top of the frame-handle A, and by a forked end acting on the under side of a pin, e, in the head of the block, and as a substitute for the different size setting-jaws shown at Fig. 7, an adjustable gage, s, is used, the adjustment being effected by means of a screw, t; but this modified form of the tool is not thought to be as good as the tool first-above described, and no claim is made to any of these modifications beyond what is covered by the claims applicable to the tool first-above

described, the modified form of the tool and its various parts being considered as mere substitutes for the features of novelty covered by the following claims.

Having described my invention, I claim—

1. In a saw-set in which the setting force is applied at the base of the cutting side of each tooth, the combination of an adjustable saw-supporting plate, a setting anvil, a setting-jaw, and lever-handles, by means of which the setting force is applied, substantially as described.

2. In a saw-set, the combination of a variable-toothed setting-jaw with an adjustable saw-supporting plate, a setting-anvil, and lever-handles, substantially as described.

3. In a saw-set, the combination of a multiple-toothed jaw-carrying rod, the adjustable multiple-toothed setting-jaw, with a cam-handle, a frame-handle, a reacting spring, an adjustable saw-supporting plate, and a setting-anvil, substantially as described.

4. A saw-setting tool consisting of the following devices in combination, viz: a frame-handle, A, having a socket, B, a setting-jaw-carrying rod, a setting-jaw, a spring, c, cam-handle F, an adjustable saw-supporting plate, Q, and a setting-anvil, substantially as described.

5. In a saw-set, a frame-handle provided with a socket, a setting-jaw-carrying rod fitting into said socket, a variable-toothed setting-jaw, a cam-handle, and a spring, combined with an anvil and adjustable saw-supporting plate, substantially as described.

6. In a saw-set, the combination of a setting-jaw-carrying rod, D, a variable-toothed setting-jaw adjustable around said rod, a spring, and cam-handles for operating the rod and jaw, substantially as described.

7. In a saw-set, a variable-toothed setting-jaw revoluble about an axis and set eccentrically thereto, substantially as described.

8. In a saw-set, a variable-toothed setting-jaw revoluble about and free to move longitudinally upon a supporting-rod, combined with a socketed supporting-frame and a spring, substantially as described.

9. In a saw-set, a variable toothed setting-jaw notched, as shown, a supporting-rod having a projection adapted to fit the notches in the jaw, combined with a spring and a supporting-frame, substantially as described.

10. A saw-tooth-setting jaw-supporting rod slidable longitudinally in a frame, a variable-toothed setting-jaw, and a spring and handles for operating the jaw, all combined and arranged substantially as described.

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Witnesses:

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