(No Model.)

J. E. WHITING.

SAW SET.

No. 536,308. Patented Mar. 26, 1895.

Fig. 1.

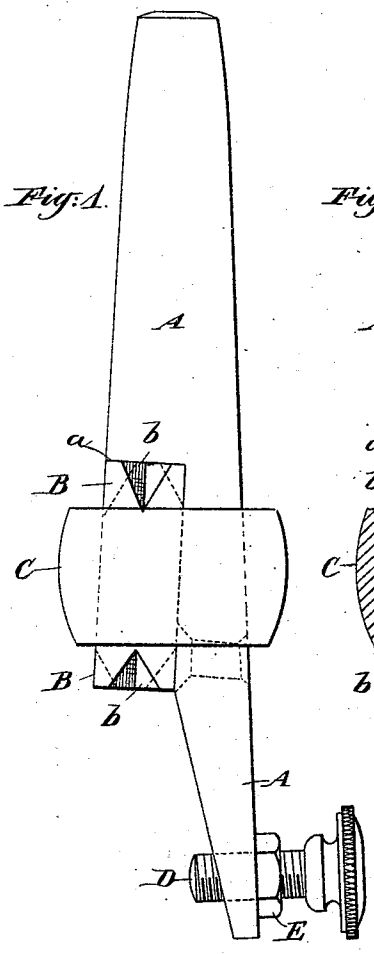


Fig. 2.

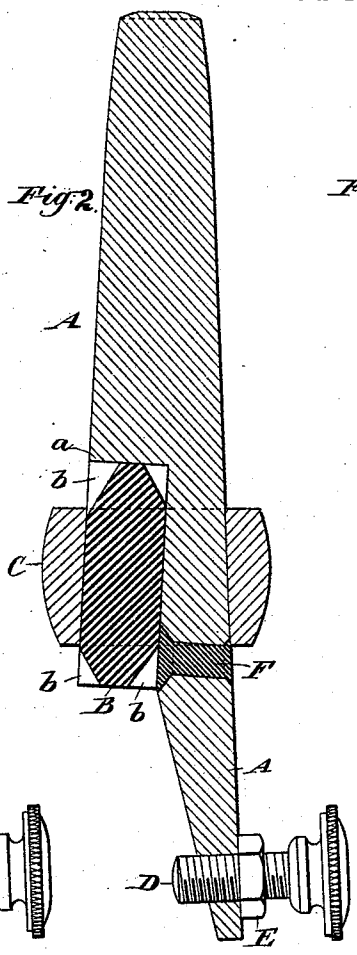


Fig. 3.

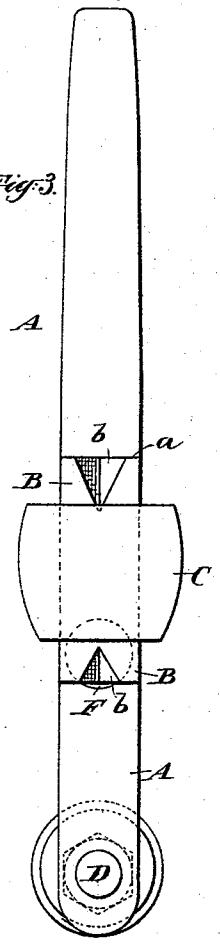


Fig. 4

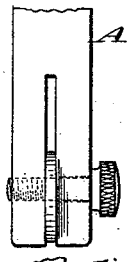


Fig. 5

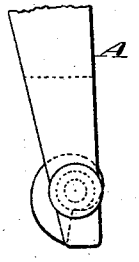


Fig. 6

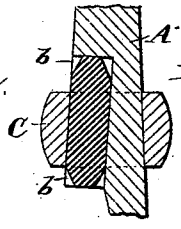
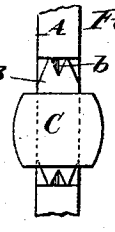


Fig. 7



Witnesses:
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M. F. Boyle.

Inventor:
Jesse E. Whiting
by his attorney
Thomas Drew Watson

UNITED STATES PATENT OFFICE.

JESSE E. WHITING, OF MONTROSE, PENNSYLVANIA.

SAW-SET.

SPECIFICATION forming part of Letters Patent No. 536,308, dated March 26, 1895.

Application filed March 26, 1894. Serial No. 505,055. (No model.)

To all whom it may concern:

Be it known that I, JESSE E. WHITING, of Montrose, in the county of Susquehanna, in the State of Pennsylvania, have invented a certain new and useful Improvement in Saw-Sets, of which the following is a specification.

The improvement relates to that class of saw-sets sometimes denominated swage-sets, which are used to shape and adjust the points of what are known as brier-teeth saws, the setting of the main body of each having been previously effected by other means.

My invention provides great hardness and consequent maintenance of the form of the small surfaces which are subjected to strong pressure and friction in setting the tempered steel teeth while the main body of the device may be low steel or soft iron; and it provides for giving a number of different forms of the points by bringing a great number of notches into action one by one, as required. I employ the ordinary long-known adjusting screw or a corresponding cam, or the like to allow the angle at which the point is set to be varied.

The device is adapted to be carried in the pocket. It is in five pieces, a main body having an offset for receiving a die, and a form of exterior adapted to receive a stout band, a die adapted to be both revolved step by step and reversed end for end, each end having a series of notches which will thus be successively brought into position to serve, a band adapted to be effectively held by friction on the slightly tapered surface of the body and die, and which holds the die firmly in place in the body so as to serve therewith to swage the tooth when the body is struck with proper force on the end, and a set-screw and jam-nut to determine the angle of the point of the tooth laterally. In one way of producing the hard surface, I employ a hardened rivet or screw, making a sixth member of the device.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a side view, Fig. 2 a central longitudinal section, and Fig. 3 an edge view showing the entire device. Fig. 4 is an edge of a portion showing a modification, and Fig. 5 is a corresponding side view. Figs. 6 and 7 represent another modification adapted to allow the same thick and strong device to serve on saws with fine teeth. Fig. 6 is a section corresponding to Fig. 4. Fig. 7 is an elevation of the same, quartering to the view in Fig. 6.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

Referring to Figs. 1, 2 and 3, A is the body of steel formed with an offset *a* adapted to match squarely against the square end of a die. B is the die matching against such offset, and having eight notches, one notch in each of its four equal sides at one end, and one notch in each of four equal sides at the other end. C is a stout band holding and releasing the die by being driven endwise in one direction and the other on the body and die. The die is of uniform rectangular section except at and near each end, but the body is so formed at that portion of its length as to present a slight taper. I have shown it as tapering from the top downward, but it may taper in the reverse direction, large end downward so that the slight endwise motion as each blow is struck, and the swaging of a tooth is effected will tend to tighten instead of relax the hold on the band and die, if preferred. The taper should be so slight as to be almost or quite inappreciable in a drawing.

D is a thumb-screw tapped through the lower end of the body, and E is a thin jam-nut thereon. The saw is set with its point protruding to the required extent to insure the desired angular position in the point, and the jam-nut is then turned to hold it.

The device is operated in the manner shown in the patent to Gideon Marsh, dated September 15, 1885, No. 326,308, with the important difference that I maintain the die of a general uniform cross-section and straight sides quite to each end, and produce four notches in each end, and that the surface of the body which is brought to act with great force on the saw-tooth is made specially hard while the main body is soft and tough. To receive the great number of blows to which the upper end of the body is subjected, it must be moderately soft. I have the whole body soft except as now to be described. I drill a hole transversely through the body at the point where this wear comes, and countersink each

end of this hole making such recess on the side presented to the tooth much the deepest. I prepare a rivet of high steel having a head F adapted to match in such large countersink, and harden it, leaving its extreme end, the top of the head, as hard as possible, but the main length of the rivet softer, and the extreme end opposite the head sufficiently soft to be riveted, insert it and rivit it. If the head is made a little full, the nearly complete device is held on a grind-stone till its hardened surface is properly reduced. The construction allows this to be done with facility. Then introduce the die B, and drive on the band C.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. I can use wrought-iron, malleable cast-iron or other suitable soft and strong material, instead of soft steel, for the body A. I can substitute a partially revolving cam and holding means for the screw D and nut E. Figs. 4 and 5 show such cams thus applied.

I attach importance to the fact that the parts are of rectangular cross-section for the reason among others, that the die may be held reliably against motions in any direction relatively to the body, and that it may be not only reversed, by which I mean turned end-for-end, but may also be revolved at four steps and be held and used with either of the four faces presented toward and bedded into the body A so as to allow any one of the eight notches to be used. The notches may all vary, or there may be several alike. In the latter case my invention allows the device to be used successfully after one notch in the die has become worn or broken. The notched ends of the die may be hardened.

Parts of the invention can be used without the whole. I can use only two notches on opposite faces at each end and revolve the die a half revolution to effect each change. This allows the die to be narrowed in one direction at each end, and thus to serve on saws which have fine teeth. Figs. 6 and 7 show such a form of die.

I claim as my invention—

In a saw set a slightly tapering body A of rectangular cross-section formed of tough metal not hardened, a portion F of hardened metal made separately and secured by riveting at the point shown, a separate die B of rectangular section of a thickness corresponding to such body and having notches *b* on two or more faces at each end so as to allow of being both revolved and reversed, a detachable holding band C having a corresponding rectangular form adapted to confine the die and be retained by friction, and means as the screw D and nut E for adjusting the angle at which the points of the teeth of the saw shall be set, all combined and arranged to serve substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

JESSE E. WHITING.

Witnesses:
O. A. GILBERT,
WM. H. WARNER.