

United States Patent Office.

SAMUEL F. LEACH, OF BANGOR, MAINE, ASSIGNOR TO HIMSELF AND EBENEZER W. ELDER.

Letters Patent No. 85,941, dated January 19, 1869.

IMPROVEMENT IN SAW-SET.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SAMUEL F. LEACH, of Bangor, in the county of Penobscot, and State of Maine, have invented a new and improved Saw-Set; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use my invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which said drawings—

Figure 1 is a perspective view of my saw-set;

Figure 2 is a perspective view of the same with the gauge E removed, and with the jaw D broken, to show the die G; and

Figure 3 is a sectional view of the jaw D, die G, lever B, and anterior end of limb or arm A.

I will now proceed to describe the construction and operation of my improved saw-set.

I construct the limb A of malleable iron or other suitable material, and provide the same with the spurs *n n'* and *p p'* integral therewith.

I shape the anterior portion of the limb A so as to form the planes H I meeting each other, and provide the same with the gauge-screw *m*.

I construct the lever B of steel or other suitable material, and provide the same with the die G, and secure the lever B between the fixed spurs *n n'* by means of the pivot-pin S.

C is a lever, of malleable iron or other suitable material, secured between the spurs *p p'* by means of the pivot-pin *t*.

The forward end of the lever C gears with the rear end of the lever B by means of one or more cogged teeth and spaces.

D is a fixed or immovable jaw, of malleable iron or other suitable material and is secured between the spurs *n n'* by means of the rivet *r*.

The jaw D is grooved beneath to allow the play of the lever B and die G, and rests upon shoulders of the spurs *n n'* to secure immovability.

I provide the jaw D with the thumb-screws *j* and *k*, and with the slotted gauge E.

I construct the slotted gauge E of brass or other suitable material, and attach the same to the upper surface of the jaw D by means of the thumb-screw *l* by which the gauge is set. Its slot permits it to span both the fixed jaw and the die, and also allows its lower edges to rest upon the plane I, thus the better insuring its preserving a true and proper position after it has been adjusted.

F is a spiral spring affixed to limb A and lever C, as shown, and forcing them apart.

The die G, I make of hardened steel or other suitable material, and preferably in one piece with the lever B, of which it forms the anterior part.

I construct the planes H I at an obtuse angle to each other, and with the line of intersection of the two planes so situated that the point of the die G may fall upon it, the plane I serving as a die-plate to the die G, and the plane H serving as a rest to the saw-blade while being set.

The plane I, I make broad enough for three teeth of the saw, so that the die acts upon the middle one of the three, and thus insures the setting of all the teeth at the same angle.

In operation, the gauge F is set, by means of the screw *l*, so as to allow the tooth of the saw to come almost to its root under the die G.

The thumb-screws *j k* are set so as to hold the saw-blade down upon the plane H, the screw *j* being set in line with screw *m*, so as not to deflect or distort the blade when both are brought into action, the screw *k* being located intermediate the screw *j* and the die G, and hence, also serving to prevent the saw-blade from springing or bending back of the tooth while the same is being set, such bending, as is well known, tending essentially to destroy the efficiency of the saw, or requiring it, in some cases, to be rebent in a reverse direction.

The saw-set is grasped in one hand by the arm A and long arm of the lever C. The grasp being tightened, the long arm of the lever C is forced downward, causing its short arm to force upward the long arm of the lever B, whose short arm is thus forced downward, and the die G presses down the saw-tooth until the latter rests its entire length upon the die-plate or plane I, setting the saw-tooth straight from its root, and not in a curve, increasing toward its point, as is too often the case in saw-sets as generally constructed, and which curvature, for obvious reasons, is a serious detriment to the saw.

The lever C is then thrown up by the spiral spring F, and the operation is repeated upon alternate teeth. The saw is then turned over, and the reverse teeth are set.

The amount of set may be lessened by screwing up the gauge-screw *m*, and in that case the screws *j* and *k* are adjusted so that the back of the saw-blade is held between the screws *j* and *m*.

My device is applicable to jack-saws, or any other kind of saw having teeth of about the same size, and it gives the set without flattening the tooth. It may also be arranged to be worked by the foot or by power.

What I claim as my invention, and desire to secure by Letters Patent, is—

The fixed jaw D, with its two screws *j k*, arranged and operating in combination with the limb A, substantially as and for the purpose set forth.

Also, the arrangement of the limb A, thumb-screw *m*, thumb-screw *j*, and fixed jaw D, substantially as and for the purposes set forth.

Also, the arrangement of the adjustable slotted gauge E, as shown, so as to span both the fixed jaw D and the die, and also to rest upon the plane of the bed I.

SAML. F. LEACH.

Witnesses:

SILAS D. LEACH,
FRANCIS P. HALL.