

UNITED STATES PATENT OFFICE.

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SAW-SET.

SPECIFICATION forming part of Letters Patent No. 692,225, dated February 4, 1902.

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To all whom it may concern:

Be it known that I, JOSEPH G. BAKER, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Saw-Sets, of which the following is a specification.

My invention relates to a new and useful improvement in saw-sets, and has for its object to provide a tool of this description which will operate upon two adjacent teeth at the same time and set one to one side and one to the other at the same operation.

A further object of my improvement is to simplify the construction and provide means whereby a positive movement is obtained and provide adjustments whereby saws having any number or size of teeth up to a certain limit can be operated upon.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a side elevation of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a section taken on the line 3 3 of Fig. 1, showing the jaws operating upon one of the teeth to bend it in one direction; Fig. 4, a section taken on the line 4 4 of Fig. 1. Fig. 5 is a perspective view of the jaws, and Fig. 6 is a sectional view of the jaws similar to Fig. 3, showing the jaws operating upon the other tooth to bend it in the opposite direction to Fig. 3.

In carrying out my invention as here embodied, A represents the body of the tool, in which all the operating parts are located. B is a handle formed with this body.

C is a lever which is pivoted or fulcrumed to the body A at the point D.

E is a plunger which is located in the body A. This plunger E is preferably square in cross-section, as is also the opening F, formed through the body A, in which the plunger E is guided. The handle C carries a tooth G,

which enters a cavity H, formed in the lower end of plunger E. This tooth is arranged upon the lever C in such a manner that when the lever C is in the position shown in Fig. 1 the plunger will be drawn to its lowest position; but when the lever C is pressed toward the handle B the plunger will be forced in the opposite direction. A spring I, interposed between the handle B and the lever C, serves to always hold the lever in its extreme outward position, (shown in Fig. 1,) and consequently the plunger's normal position is down.

An extension J, formed with the lever C, is adapted to abut against the rear of the body A and serves as a stop to limit the outward movement of the lever C. Upon the upper end of the plunger E is formed a die, which is adapted to operate against an opposing die to set the teeth. The upper end of the body A is formed U shape to allow for the insertion of the saw between the dies. The opposing die K is located upon the inner side of the U-shaped portion upon the upper end of the tool directly above the plunger E.

The die upon the upper end of the plunger E is formed with the beveled portion 1, and the opposing die K is formed with a corresponding bevel 2, and when the saw is inserted between the dies and the two dies brought together the point 3 upon the plunger E will strike the tooth at a point about midway between the point and the base of the tooth and the point 4 upon the die K will strike the tooth at this base, so that when the dies are brought together the tooth will be deflected in the direction shown in Fig. 6. The die upon the upper end of the plunger E has also a bevel portion 5, beveled in the opposite direction to the bevel portion 1. The die K has a beveled portion 6, which is also beveled in the opposite direction to the bevel 2, so that when the jaws are brought together these two beveled portions 5 and 6 working in conjunction with one another will deflect the other tooth in the opposite direction to that shown in Fig. 6, the same as illustrated in Fig. 3.

The die K has upon its under surface the flat portion 7, and the die upon the end of the plunger E has a flat portion 8. When the dies are brought together, these flat surfaces are adapted to engage the saw-blade. When

the saws are placed in position between the dies to be operated upon, their position shall be such that the points upon both dies when the flat surfaces and the bevel meet shall strike the saw-blade upon each side at a point at or near the base of the tooth.

For the purpose of assuring the proper placing of the saw between the dies upon each operation I provide the adjustable guide L, which is adjustable in the extension M of the body A, which forms one of the prongs of the U-shaped portion of said body. A slot N is formed through this extension M, and through this slot projects the set-screw O, which is threaded through the guide L, the shoulder of the set-screw bearing against the under side of the extension M to retain the guide in position. Thus a limited adjustment is provided along the slot N for this guide. The opposite end of the guide is forked and is adapted to straddle the dies, and upon each side of the dies this guide is turned upward at right angles, so as to form the fingers P. Thus when the saw is placed between the dies the point of the teeth of the saw will rest upon the prongs or fingers P upon each side, and by setting this guide so that the base of the tooth will come in the proper position for the first operation then each succeeding pair of teeth will be operated upon in exactly the same manner as the first if the point of the saw is held against the prongs or fingers P.

To operate upon saws having more or less number of teeth to the inch, it would be necessary that the beveled portions of the dies—namely, 1 and 2 and 5 and 6—should be brought nearer together or farther apart, as the case may be, so as to operate upon the teeth at the proper point. To provide for this, I construct the upper die K, so that it is adjustable within the upper part of the body A. The die K has formed with it the lug or block Q, which is adapted to travel within the slot R, formed through the upper prong S of the U-shaped portion of the body A. Passing transversely through this extension S and also through the block Q is a screw-threaded rod T. This screw-threaded rod T has upon one end the milled head and shoulder U, and the other end is upturned or riveted at the point V, so as to allow the screw-threaded rod T to turn freely within the extension S, but will not allow the same to be withdrawn. The screw-threaded rod T is not threaded through the extension S, but is threaded through the block Q, so that by turning this rod T the block Q can be moved in either direction laterally, depending upon the direction the screw-rod is turned. The beveled surface 2, formed upon the die K, and the beveled surface 5, formed in the die upon the end of the plunger E, are very wide compared with the beveled surfaces 1 and 6. Therefore it will allow for an adjustment only limited by the width of the dies.

In operation the saw-blade is inserted between the dies and the guide L set, so that

when the points of the teeth rest upon the prongs T of this guide the points of the dies where the flat surfaces and the beveled portion meet will strike the saws at the base of the teeth. Then the upper die K is moved laterally, so that both surfaces 1 and 6 will strike the two adjacent teeth of the saw, and when in this position the saw-set is adjusted properly, and then by pressing the handle C the plunger is forced toward its opposing die and the two teeth set in opposite directions to one another. Then by simply moving the saw-blade along to the next two teeth these teeth are then set, and so on until the end of the saw is reached.

The advantages of my invention are that by providing mechanism whereby two saw-teeth can be set at once it reduces the time for setting a saw exactly one-half and also provides for holding the saw firmly while the teeth are being set, all in the same operation and by means of the guides assures accurate alinement of the blade. Another advantage of my invention is that by providing the teeth G to operate in the notch H of the plunger E, I cause said plunger to be operated positively, so that the same cannot be retarded in its movements. Another advantage of my improvement is that the body A, surrounding the plunger E, is entirely closed, which protects said plunger against any dust or the like entering therearound. A further advantage is that by constructing a tool in this manner the parts are few in number, and thus less likely to become out of order, while at the same time cheap in the cost of manufacture, but provides a very effective and durable tool, and the adjustments are such that the saw can be quickly adjusted to the desired position.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a saw-set, two dies suitably supported, means for reciprocating one die with relation to the other die, two sets of beveled surfaces formed upon each die operating on two teeth in opposite directions, flat surfaces on the faces of each of the dies, means for adjusting one of the dies laterally relative to the other die, guides located on each side of the dies on which the teeth of the saw rest and means for adjusting the guides, substantially as described.

2. In a saw-set, two dies, a suitable body for supporting said dies, one of said dies adapted to reciprocate toward and away from the other die, guideways formed in the body for guiding the reciprocating die, a lever pivoted to the body, a tooth formed with said lever, a notch formed in the shank of the reciprocating die, in which the said tooth is adapted to protrude, a handle secured to or formed with the body, a spring interposed be-

tween said handle and said pivoted lever, two sets of beveled surfaces formed upon each of the dies for the purpose of setting two teeth in opposite directions to one another when the dies are brought together, flat surfaces formed upon the face of each of the dies for the purpose of grasping and holding the saw-blade when the dies are brought together, a square lug formed upon the back of the die opposed to the reciprocating die, a slot formed in the body into which the lug is adapted to slide, a screw-threaded rod passing through the body transversely and secured therein, said screw-threaded rod adapted to be threaded through the square lug upon the die for the purpose of adjusting said die laterally relative to the other die, guides located upon each side of the dies upon which the point of the teeth are adapted to rest while the saw is being operated upon, and means for adjusting said guides, substantially as described and for the purpose specified.

3. In combination with a device of the char-

acter described, two dies, one of said dies adapted to be adjusted laterally relative to the other, the other die adapted to reciprocate toward and away from the first-named die, two sets of beveled surfaces formed upon the face of each die, each set of beveled surfaces being inclined in the opposite direction from the other set for the purpose of setting two teeth in opposite directions to one another at one operation when the dies are brought together, flat surfaces formed upon the face of each of the dies adapted to grasp and hold the saw-blade when the dies are brought together, substantially as described and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JOSEPH G. BAKER.

Witnesses:

L. W. MORRISON,
H. H. FOWLER.