(No Model.)

H. A. HANSEN.

SAW SET.

No. 351,106. Patented Oct. 19, 1886.

Fig. 1.

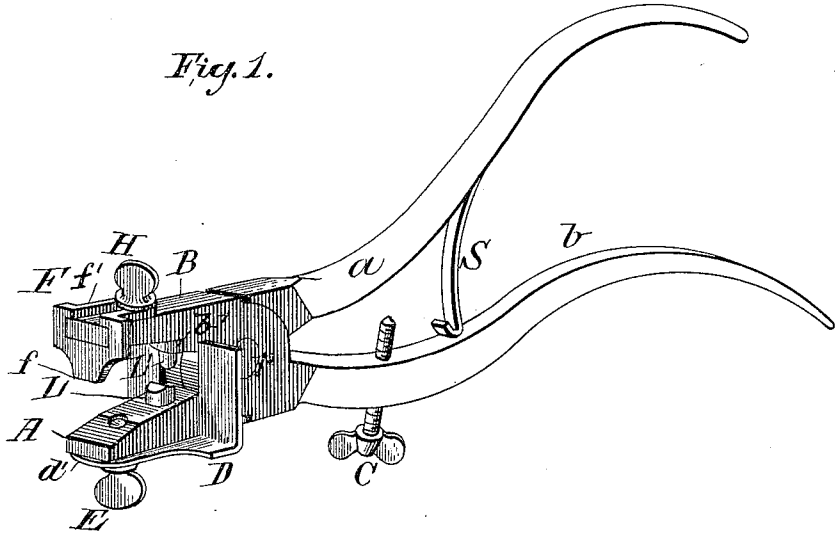


Fig. 2.

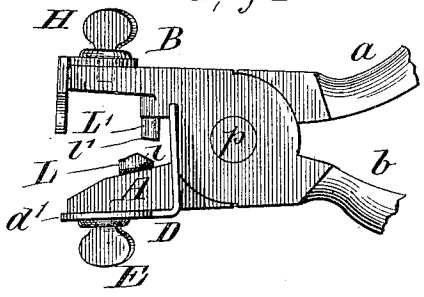


Fig. 3.

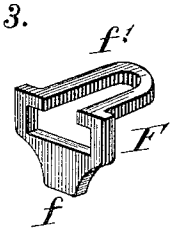
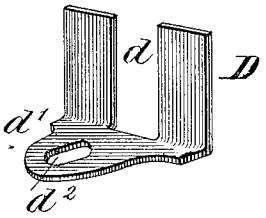


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

HANS ANDREAS HANSEN, OF CHRISTIANIA, NORWAY.

SAW-SET.

SPECIFICATION forming part of Letters Patent No. 351,106, dated October 19, 1886.

Application filed August 25, 1886. Serial No. 211,804. (No model.) Patented in Germany June 7, 1884, No. 30,433; in France July 19, 1884, No. 163, 392; in Sweden July 21, 1884; in England July 25, 1884, No. 10,596; in Austria-Hungary, September 24, 1884, No. 35,968; in Norway March 17, 1885, No. 1,903, and in Denmark December 14, 1885, No. 1,868.

To all whom it may concern:

Be it known that I, HANS ANDREAS HANSEN, a citizen of Norway, residing at Christiania, have invented certain new and useful Improvements in Saw-Sets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Referring to the accompanying drawings, Figure 1 is a perspective view of my improved saw-set. Fig. 2 is a side elevation thereof, the handles being broken away; and Figs. 3 and 4 are isometric views of the gage-plates.

This invention relates to that class of tools adapted for setting the teeth of saws, and has for its object to provide an apparatus of simple construction, easily handled, and efficient in operation.

To these ends the invention consists in the combination, in a plier saw-setting tool, of pivoted jaws, whereof one is provided with a hammer and the other with an anvil for setting the teeth, with gage-plates vertically adjustable on the jaws to adapt the tool for operation on saw-blades of different widths or length of teeth, substantially as hereinafter fully described, and as set forth in the claims.

My improved saw-setting tool consists of two jaws, A B, having curved handles *a b*, said jaws being pivoted together at *p*, to operate like an ordinary pair of pliers, the handles being, as shown, curved in the same direction to afford a firm hold on the tool and to more conveniently operate the same.

S is a spreader-spring secured to one of the handles, its free end bearing upon the other, as usual.

C is a set-screw operating in a screw-threaded opening in the handle *b*, and serves to limit the movement of the jaws A B toward each other.

The jaw A is provided with an anvil, L, that projects from its inner face near the base of said jaw, said anvil having its outer face beveled upwardly and downwardly, as shown, to an inclined bearing-surface, *l*, that gives the set or angle to the saw-teeth.

The jaw B is provided with a hammer, L′, projecting from a boss, *b′*, and is so arranged relatively to the anvil L as to move in the plane of the inclined face *l* of said anvil L, the face of the hammer L′ being correspondingly beveled, as shown at *l′*, so that when both are brought together their inclined bearing-surfaces *l* and *l′* will face each other.

It is obvious that if the tooth of a saw is brought between the hammer L′ and the anvil L and the jaws brought together such tooth will be bent in one direction, and if the saw is reversed the next tooth will be bent in a reverse direction; or the operation of setting may be performed, as usual, by setting each alternate tooth in the same direction and then reversing the saw and setting the intermediate teeth in a reverse direction.

In order to bring the teeth of the saw into proper position relatively to the anvil and hammer L L′, and to adapt the tool for use on saws having teeth of different length, I employ a gage-plate, D, of angular form, Fig. 4, having a slot, *d*, of such width as to fit over the jaws A B, the length of the plate being such as to form a rest for the saw-teeth when inserted between the hammer and anvil. The vertical arm *d′* of the gage-plate D has an elongated slot, d^2, and is secured to jaw A by means of a set-screw, E. According to the length of the teeth of the saw operated upon, this gage-plate is adjusted closer to or farther from the hammer L and anvil L′, as will be readily understood.

To afford the saw a firm bearing, and also to maintain the same in a position at right angles to the hammer and anvil, I employ a screw gage-plate, F, which, like gage-plate D, is adjustable vertically on jaw B, projects inwardly therefrom, and bears upon one side of the saw, the edge *f* of the plate lying in the plane of the hammer L′, as shown.

The plate F is suitably slotted, as shown in Fig. 3, and is secured to jaws B when adjusted to its proper position by means of a set-screw,

H, so that saw-blades of different widths may be operated upon, as will be readily understood.

To adapt the tool for use on very narrow saw-blades the gage-plate F is made reversible to bring the plate proper close over the hammer L′, as it is obvious that by applying the plate to the jaw B, so that the slotted shank *f′* of said plate will project upwardly instead of downwardly, the said plate F may be brought close to the hammer L′.

Having now particularly described and ascertained the nature of the said invention, I declare that what I claim is—

1. In a plier saw-set, the combination, with two pivoted jaws, A B, provided, respectively, with an anvil and hammer, L L′, of the gage-plate F, reversible and adjustable vertically on jaw B, substantially as and for the purpose specified.

2. In a plier saw-set, the combination, with the jaws A B, having handles *a b*, and anvil and hammer L L′, respectively, of the adjusting-screw C, the gage-plate D and the gage-plate F, adjustable on jaws A B, respectively, said plates being arranged for operation, substantially as described, for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

HANS ANDREAS HANSEN.

Witnesses:

OTTO SCHÖNHEYDER,

CARL BRAMBANI.