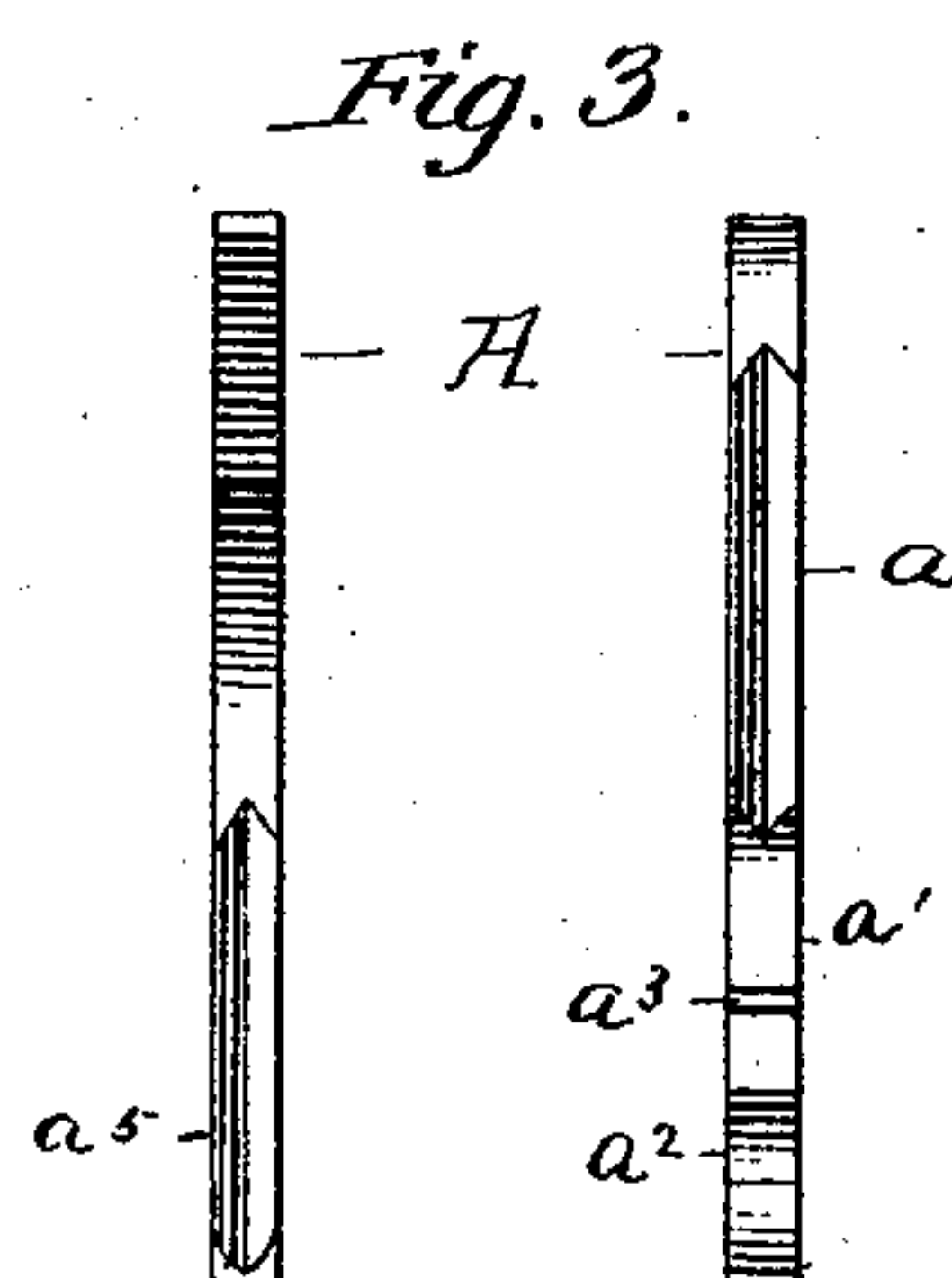
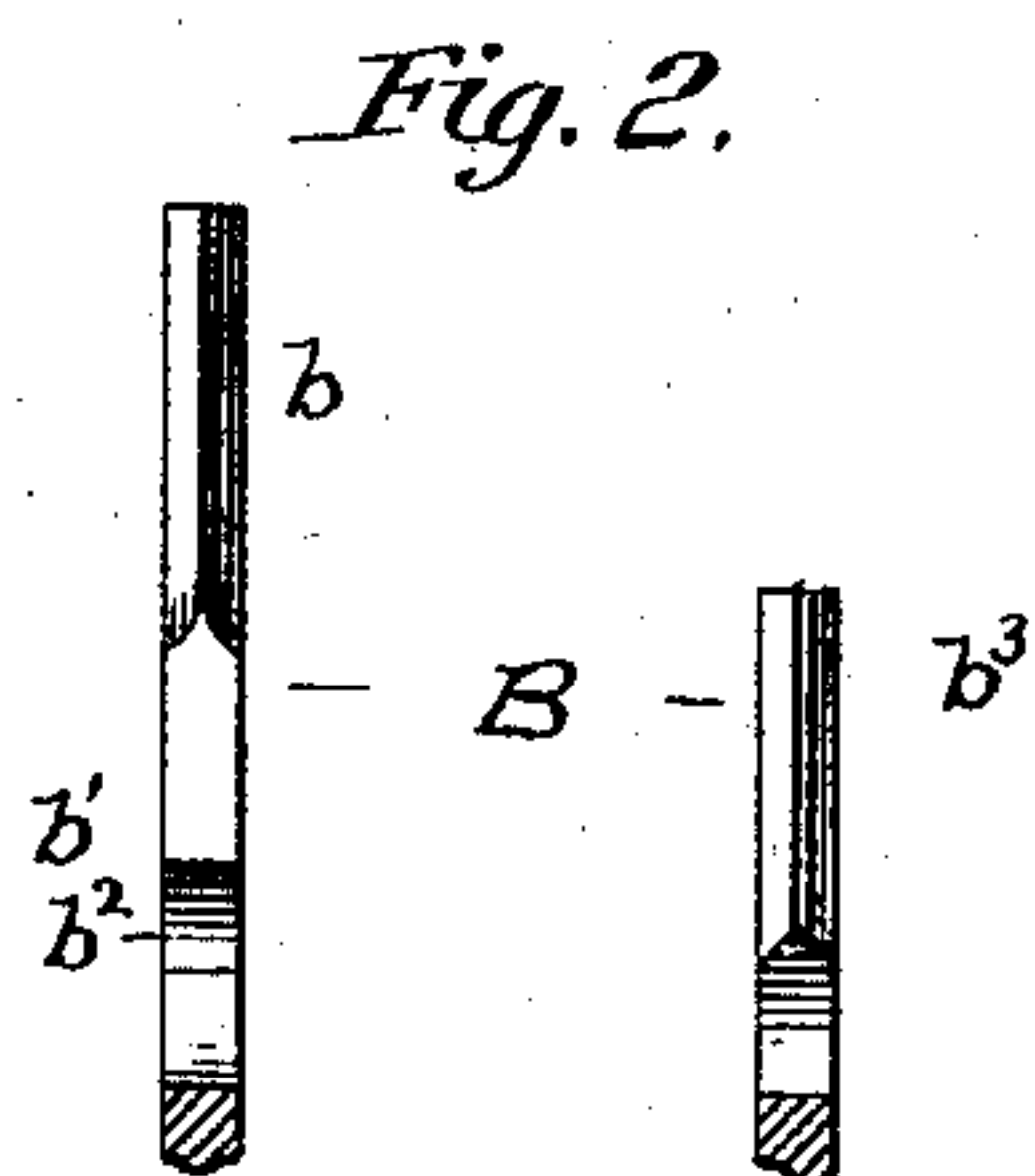
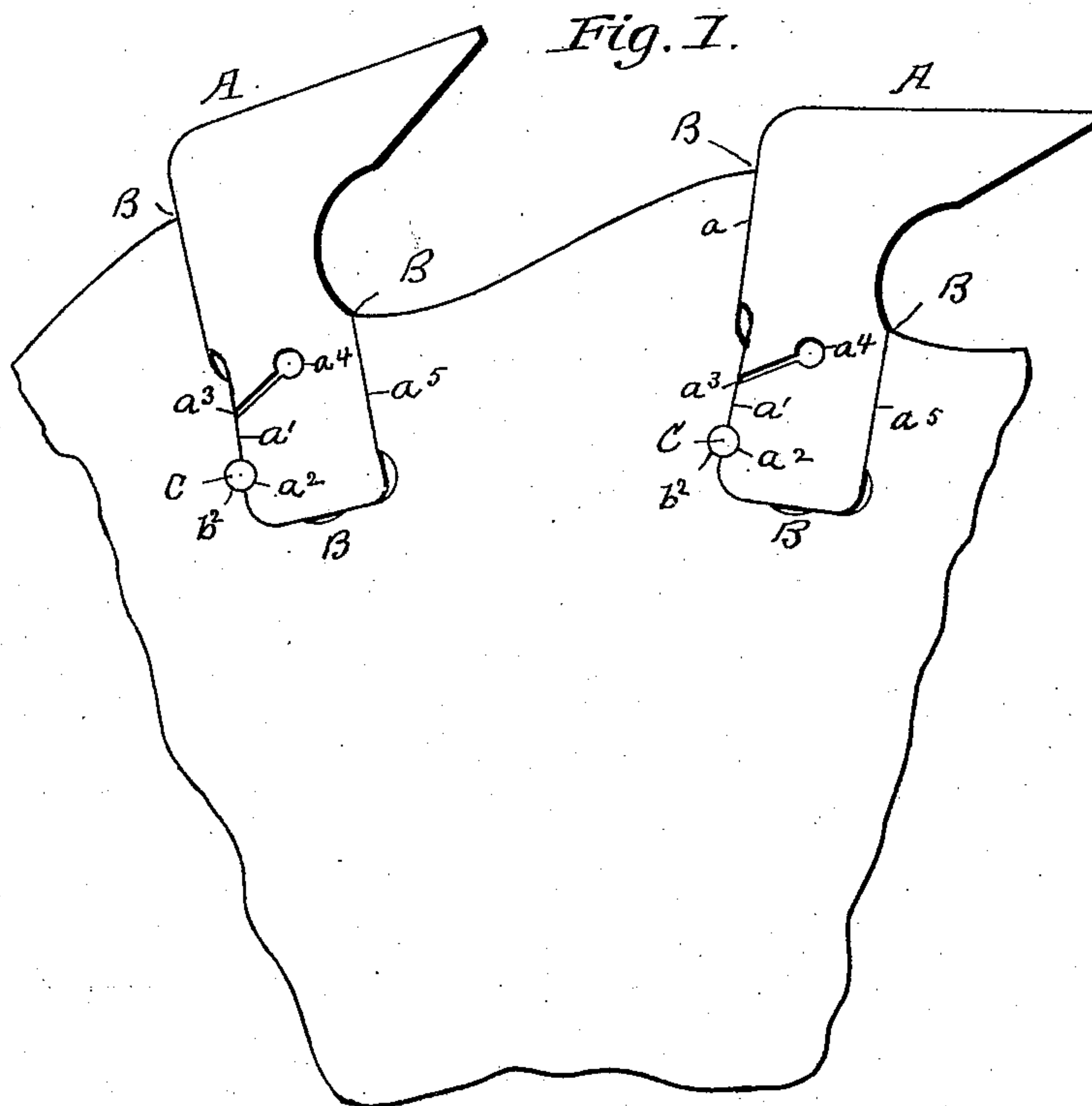


(No Model.)

E. ANDREWS.
SAW TOOTH.

No. 369,222.

Patented Aug. 30, 1887.



Witnesses
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UNITED STATES PATENT OFFICE.

EMANUEL ANDREWS, OF WILLIAMSPORT, PENNSYLVANIA.

SAW-TOOTH.

SPECIFICATION forming part of Letters Patent No. 369,222, dated August 30, 1887

Application filed November 2, 1886. Serial No. 217,825. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL ANDREWS, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Saw-Teeth; 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.

My improvement in inserted saw-teeth is designed to overcome certain disadvantages in the use of such teeth, which may be described as follows, viz: the tendency to warp the saw-blade in the effort to fasten the teeth securely in position, the tendency to lateral displacement of the teeth by the act of securing them firmly in position by lateral rivets or keys or by the teeth striking the sides of knots or following the grain of the wood when crooked, particularly in frozen timber, and the tendency of the teeth, slots, or recesses to become enlarged by use, so that the later sets of teeth, which are all made of the original size, will not fit the recesses closely and cannot be held as securely as at first.

My invention therein consists, principally, in making the tooth-recess, which is substantially rectangular in form, wider at its bottom than at its top, so that the bottom of the shank of the tooth may be rocked forward and backward, in inclining the back edge of the recess backward and the front edge forward, and in placing the rivet-notches for the tooth and the saw-blade at the back of the shank and near the bottom of the same, so that in riveting the tooth to the saw-blade the shank is pressed forward at the bottom and backward at its top; also, in the particular construction and arrangement of the various parts, all as more particularly hereinafter described.

For the better understanding of my improvement reference should be had to the drawings, in which similar letters denote corresponding parts in each figure, and in which—

Figure 1 is a plan view of my improvement; Fig. 2, separate views of the tooth-recess, displaying its edges; and Fig. 3, separate views of the tooth, displaying its edges.

In the drawings, A denotes the tooth, the upper cutting portion of which is of a well-known form. The back edge, a , of this tooth

is grooved about one-half of its length, the bottom of the groove coinciding with the ungrooved half a' , by which means the groove may be made conveniently. As indicated, however, this back edge, a , may be grooved its entire length, although this mode is more difficult to manufacture. Near the bottom of the back a' is the rivet-notch a^2 , of any usual form, and near the center of the back a' , and above the notch a^2 , is a spring-slot, a^3 , terminating in the round hole a^4 . This spring-slot and hole may be dispensed with where great strength is required in the tooth. The front lower edge, a^5 , of the shank is grooved for a distance about equal to the length of the ungrooved back a' , the bottom of such groove being above the plane of the throat of the tooth, so that such groove may be made conveniently. The bottom of the shank is preferably rounded at both edges for easy insertion into the recess, and both edges a and a^5 are made with lines nearly or quite parallel. This recess B has its back edge, b , beveled on both sides in such a way as to correspond in all respects with the groove a of the tooth, the remaining portion, b' , not being beveled and corresponding in all respects with the ungrooved portion a' of the tooth, and having a rivet-notch, b^2 , corresponding with the notch a^2 of the tooth. The front edge, b^3 , of the recess is beveled on both sides in such a way as to correspond in all respects with the groove a^5 of the tooth, and this edge of the recess draws gradually away from the line of the opposite edge, each edge being in a straight line, so that the recess is a little wider at the bottom than at the top. The back beveled edge, b , also inclines a little backward from the line of the ungrooved portion, except where the whole edge is beveled, in which instance the inclination is uniform throughout.

An ordinary wedging-rivet, C, is adapted to be inserted in the notch a^2 b^2 to fasten the tooth to the saw-blade.

When the tooth is inserted in the recess, into which it fits rather loosely on account of the enlargement of the same at the bottom, and the rivet is inserted, its effect is to rock and press the bottom of the shank forward and the top of the tooth backward, and thereby to press the upper grooved back edge and the grooved front edge against their corresponding beveled portions of the recess, thereby exerting the

greatest pressure in the direction where the greatest pressure in work is exerted, and at such points of greatest pressure having the beveled and grooved portions take up such pressure through their whole extent. The result of this construction is therefore that the rivet at the instant of insertion by the fingers brings the beveled and the grooved portions in contact, and no such force is required to rivet them there securely as would warp the saw-blade. By reason of the same construction and the instant locking of the beveled and grooved portions, a greater pressure or blows upon the rivet only serve to lock the parts more intimately, the tendency of the parts to separate laterally being overcome by the wedging action due to the forms of the beveled edges and grooves.

When the recesses become enlarged by use and new teeth are required, such teeth of the precise size of the original ones may be used successfully, the spring-slot α^3 permitting the spreading of the shank sufficiently. The same result, however, can be obtained when the spring-slot is not used—in either case jointing the point of the tooth a little.

I am aware that it is not new with me to produce inserted saw-teeth having the shanks substantially rectangular in outline or in having them grooved on both edges, or having the recess for the tooth substantially rectangular in outline and beveled on both edges, or hav-

ing a notch for a key or rivet in corresponding parts of the tooth and its recess, or in having the recess widest at the bottom, and I disclaim any such invention.

I am also aware that in one patent there is shown and described a saw-tooth constructed with a curved recess where the tooth is keyed at the back; but as in this instance there is no rocking action of the tooth, and as, in order to hold the tooth securely, so much of the periphery of the saw is taken up by the recesses that the teeth cannot be placed as closely as is needful, I also disclaim this invention.

Having thus described my improvement, what I claim as new therein is—

In combination with a recess for an insertible saw-tooth substantially of rectangular form in outline, having its back and front edges inclined toward the bottom regularly away from the back edge, an insertible tooth with parallel grooved edges and a key-notch on its back edge near the bottom thereof and a key or rivet by means whereof the tooth may be rocked and secured in the recess, substantially as described.

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

EMANUEL ANDREWS.

Witnesses:

A. B. NEYHART,

W. T. ANDREWS.