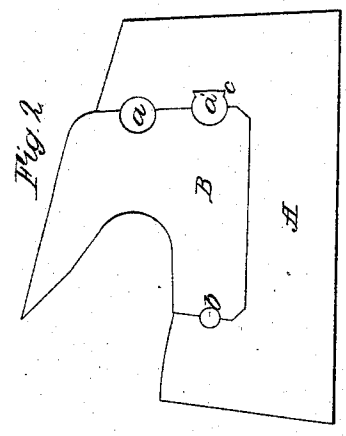
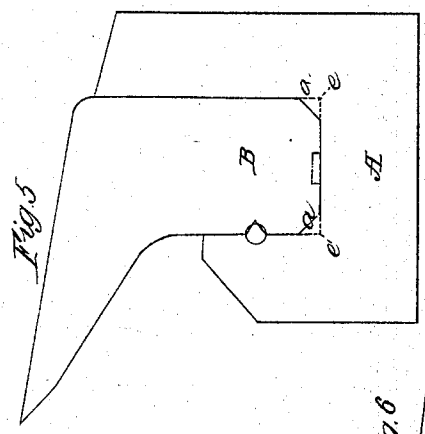
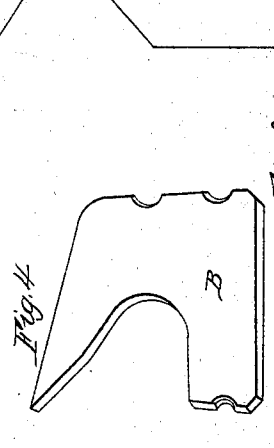
J. E. Emerson,

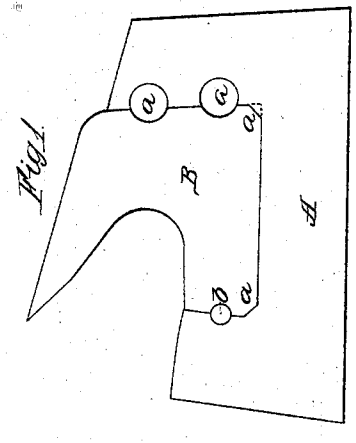
Saw Teeth.

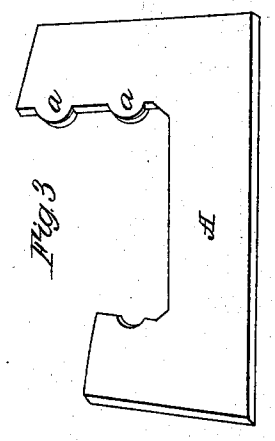
No. 62,020. Patented Feb. 12, 1867.











Witnesses.
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JAMES E. EMERSON, OF TRENTON, NEW JERSEY.

Letters Patent No. 62,020, *dated February* 12, 1867.

IMPROVEMENT IN SAWS.

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, JAMES E. EMERSON, of Trenton, county of Mercer, and State of New Jersey, have invented a new and improved Method of Inserting Teeth in Saws; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists, first, in the manner of inserting and securing, permanently, rivets into either the saw-plate or into the rear of the tooth, so that the projecting portion constitutes an equivalent for the dove-tail heretofore used for that purpose; and second, leaving in the corners of the otherwise square recess into which the tooth is inserted, a fillet or portion of metal, and making the tooth of a corresponding shape.

Figures 1 and 2 are side views of a section of a saw-plate with the tooth in place.

Figure 3, a similar section in perspective without the tooth.

Figure 4, a perspective view of a tooth.

Figure 5, a different method of inserting teeth, but showing one feature of my invention, the obtuse angles in the corners of the recess.

Figure 6 shows another application of the large rivet, in attaching a recess tooth to a projection on the saw-plate, for which I have already obtained a patent, using, however, the ordinary dove-tail instead of the permanent rivet.

In figs. 1 and 3, the rivets in the joint in the rear, and in fig. 6 in the front joint between the tooth and saw-plate, are shown with the greater part of their periphery surrounded by the metal of the saw-plate, and consequently firmly held therein, while the smaller portion fitting into a corresponding recess in the tooth allows the latter to be removed whenever the small rivet *b* is driven out. In fig. 2 the rivet *a* is shown permanently secured to the tooth, and at *a'* another method of securing the rivet, when equal portions are in the plate and saw, by means of spurs, *c c*, formed by the metal of the rivet being spread into notches formed in the plate for that purpose. These spurs, in consequence of their position relative to each other, form a dove-tail which effectually secures the rivet to whichever portion of the saw it is desired to have it. By this method of inserting teeth, the recess can be cut out at one operation, and the formation of the usual dove-tailed joint between the saw-plate and tooth avoided, and the necessity of a milling tool dispensed with, both recess, and the tooth to fit it, being cut or punched out by dies of corresponding shapes, the holes for the rivets being countersunk on both sides after the tooth is filled in the recess, and the rivets are then inserted and swaged out to fill their proper places. To remove the tooth when worn out, it is only necessary to drive out the small rivet *b*, when that part of the tooth secured by it can be forced to one side, clear of the saw-plate, and the shape of the large rivets allows its removal without affecting the hold of the large rivets in the plate. The teeth to be inserted, corresponding of course in shape and size of the parts to be inserted in the plates, of those removed will fit the recess occupied by the latter, the permanent rivets constituting a dove-tail at once as durable, more easily made, and cheaper than any in use. Instead of making the bottom corners of the recess square or right-angled, a portion of metal in the shape of a fillet, *d*, (see figs. 1, 5, and 6,) is left in each corner, leaving the jaws, or front and rear walls of the recess, in case of the two former, of greater strength than if cut to a right or acute angle, both of which tend, when made, to crack or split in the direction of the dotted lines *e e*. It is apparent that the last feature of my invention can be applied to different methods of inserting or attaching teeth, as shown in figs. 5 and 6, in the latter of which the fillets show two straight lines, forming, with the sides of plate and the projecting part filling the recess in the tooth, three obtuse angles, or a polygonal shape.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The method of securing teeth inserted in or attached to a saw-plate, by forming the dove-tail of one or more rivets permanently secured either in the saw-plate or the tooth, in the manner substantially as shown and described.

J. E. EMERSON.

Witnesses:

EDM. F. BROWN,

H. F. MANN.