(No Model.)

A. J. VAN DRAKE.

SAW TOOTH.

No. 267,121. Patented Nov. 7, 1882.

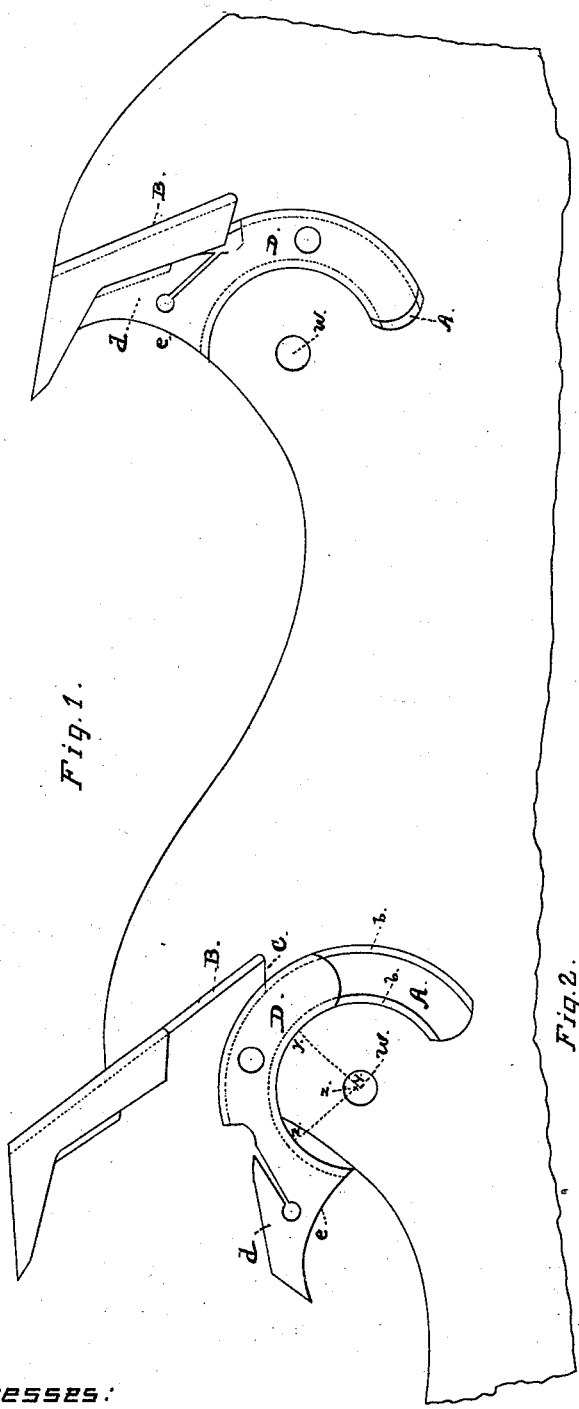

Fig. 1.

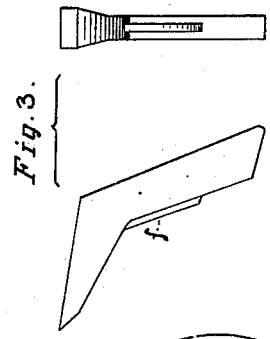

Fig. 3.

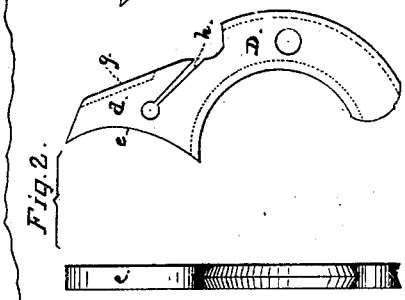

Fig. 2.

Witnesses:
Wm Voit
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UNITED STATES PATENT OFFICE.

ALFRED J. VAN DRAKE, OF SAN FRANCISCO, CALIFORNIA.

SAW-TOOTH.

SPECIFICATION forming part of Letters Patent No. 267,121, dated November 7, 1882.

Application filed July 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALFRED J. VAN DRAKE, of the city and county of San Francisco, and State of California, have made and invented certain new and useful Improvements in Inserted-Saw-Teeth Fastenings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings.

My invention relates to an improvement in locking teeth or bits in saw-plates.

It has for its object to provide a simple, secure, and safe device of fastening inserted teeth in saw-plates, by means whereof I am enabled to dispense with pins, screws, cams, and other retaining devices for the tooth or locking plate, and by virtue of the construction and application whereof I am enabled to provide an increased amount of throat-room for the discharge of chips.

The following description fully explains the nature of my said invention and the manner in which I proceed to construct, apply, and use it, the accompanying drawings being referred to by letters and figures as follows:

Figure 1 shows a segment of a saw-plate with my improved fastening applied thereto. Fig. 2 shows the locking-plate in detail. Fig. 3 shows the construction of the tooth or bit.

In applying my improvement to a saw-plate I first form in that portion of the throat below the shoulder and seat for the tooth a groove or recess, A, upon a curve which is a segment of a circle. This circle is struck from a point, *w*, and is carried from the throat into the body of the metal toward the center of the plate. This groove is about the half of a circle, having its center at *w*. Its edges *b b* are then chamfered, as shown at Fig. 1, and the shoulder B is carried down to a point just behind the rear edge of the groove to form a seat, C. This shoulder can be made to receive either a straight bit, as shown, or it can be formed on a curved line, to hold a curved bit or tooth. The seat C receives the end of the tooth when it is locked in place against the shoulder.

The locking-plate D, by which the tooth is held, I make of concentric shape and of proper width to enter and fit tightly into the recess; but I form it upon a circle which is of smaller radius than the curved recess A, so that when forced into its recess the difference in curvature will spring the plate and press out the end *d* against the shank of the tooth. In practice I have obtained sufficient pressure and a firm holding action from a difference of one-sixteenth of an inch between the radii of the two curves, as indicated at *y z*, Fig. 1. This construction can be varied, however, according to the size of the saw and teeth. When the plate D is pressed into the recess A its outer end, *e*, comes flush and forms a continuation of the throat up to the under side of the tooth. To prevent lateral movement and displacement, its edges are grooved to take over the beveled edges of the recess. I prefer to use the groove on both edges, as shown, although one edge may be left plain and the edge of the recess formed accordingly.

To hold the tooth securely in place against lateral pressure, I provide a spline, rib, or projection, *f*, on the front edge of the shank, just below its throat, and then form a groove or depression, *g*, corresponding to it in the back edge of that portion of the locking-plate which bears against this part of the tooth, so that when the locking-plate is sprung into its recess and forced back against the shank of the tooth this projection will fit into the groove *g*, and the two parts will be firmly united at and along this line of joint.

To give an elastic or springing quality to the locking-plate where it bears against the tooth, I make a slit, *h*, in the body of the plate, as shown at *h*, Figs. 1 and 3, running longitudinally from the lower end of the straight back of the plate upward toward the curved end that comes flush with the saw-plate throat. This construction takes off the dead-pressure against the shank of the tooth and imparts a certain amount of elasticity to the action of the tooth, which is of advantage in the working of the saw.

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

1. In a tooth-fastening for inserted saw-teeth, the combination of the curved recess A

in the plate and a curved locking-plate, D, which is formed on a curve having a radius less than the radius of the curved recess, substantially as set forth.

2. The combination, with a seat or socket, C, and an inserted saw-tooth, of a recess, A, formed on a curve which is the segment of a circle, and a curved locking-plate, D, formed on a curve of smaller radius than the radius of the recess, and provided with the forward extensions, *d*, substantially as set forth.

Witness my hand and seal.

ALFRED J. VAN DRAKE. [L. S.]

Witnesses:

EDWARD E. OSBORN,

GEO. VINCENT.