2 Sheets—Sheet 1.

N. JOHNSON.

Means for Securing Insertable Saw-Teeth.

No. 200,833. Patented March 5, 1878.

Fig 1

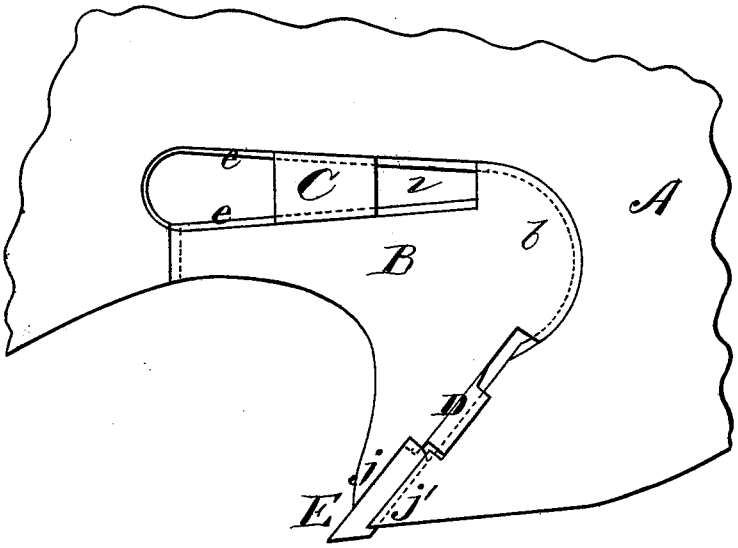

Fig 2

Fig 3

WITNESSES

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2 Sheets—Sheet 2.

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Fig 4

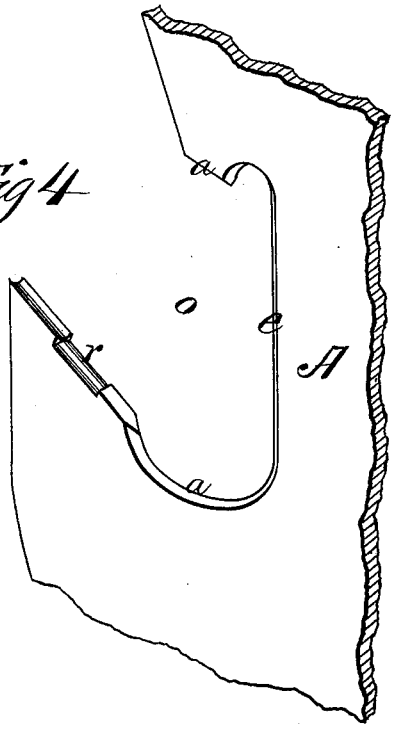


Fig 5

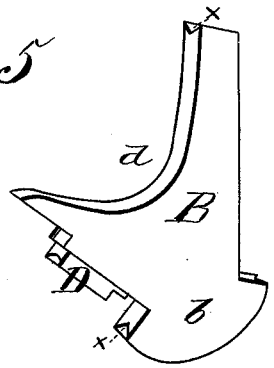
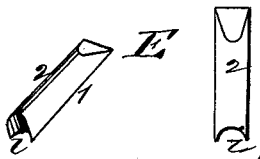


Fig 6



WITNESSES

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UNITED STATES PATENT OFFICE.

NELSON JOHNSON, OF JASPER, NEW YORK.

IMPROVEMENT IN MEANS FOR SECURING INSERTIBLE SAW-TEETH.

Specification forming part of Letters Patent No. **200,833**, dated March 5, 1878; application filed June 26, 1875.

To all whom it may concern:

Be it known that I, NELSON JOHNSON, of Jasper, in the county of Steuben and State of New York, have invented a new and valuable Improvement in Means for Securing Insertible Saw-Teeth; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of my saw-tooth, as attached; and Figs. 2 and 3 are sectional detail views of the same. Fig. 4 is a perspective view, part sectional; and Figs. 5 and 6 are detail views.

This invention has relation to improvements in circular or other saws having insertible teeth, wherein the tooth is jammed into a recess in the saw-plate through the medium of a wedge acting upon a holder; and the novelty consists in the construction and arrangement of the parts, as will be hereinafter more fully set forth.

In the accompanying drawings, A designates a section of a circular or other saw blade, having upon its cutting-edge a recess or opening, *o*, designed to receive the clamp or holder, the tooth or bit, and the operating-wedge.

The mouth-piece or clamp-holder, which I designate by the letter B, is provided with an enlarged segmental head, *b*, which fits into a correspondingly-shaped end of the recess in the saw, and it is provided at the points at which it comes in contact with the plate with a V-shaped or concave groove, *x*, into which a rib, *a*, of corresponding shape on the saw-plate is designed to be received.

Clamp-plate B is, in its general configuration, of triangular form, and the segmental head *b* being taken as the apex I shall further describe its variations of form from the triangular by saying that the side of the clamp opposite the apex is deeply concaved, as shown at *d*, Fig. 5, while its remaining sides are some distance from the corresponding edges of the recess. The inner edge of recess and the corresponding edge of the clamp are angular in form, as shown at *e*, and they gradually converge from their front ends toward the head *b*, thus forming a tapering slot, *i*, in which a wedge-plate, C, is arranged. This wedge has endwise movement in this slot, and is prevented from lateral displacement by means of V-shaped grooves, into which the angular ribs *e* on the clamp-plate and saw are adapted to be received. The remaining edges of the clamp and saw plates are slightly separated, and that of latter is recessed. The bottom edge of this recess is of convex form, and it is adapted to receive a locking-block, D, of soft metal, the corresponding edge of which is concave, and accurately conforms to the convexity of the edge of the recess *r*. The clamp B having been placed in the recess of the saw-plate, the wedge C being in its place, and the locking-block in its recess *r*, the said block is then brazed to the clamp, the tooth-holder thus formed presenting the appearance shown in Fig. 1.

By this means the clamp or holder B and the wedge C are immovably locked in position within the recess of the saw-plate, and the former will be prevented from escaping therefrom under the influence of centrifugal force, even though the wedge which holds the tooth in the jaws *j j'* of the holder and saw-plate should slip.

By this means, also, the holder and saw-plates will be rigorously held in the same plane with each other. Locking-block D is of soft metal, and as the bits or teeth are worn off upon their lateral edges by the friction of jaws *j j'*, it will yield under the pressure exercised by the wedge-blocks, thus allowing the said teeth to be rigidly griped by the said jaws. This tooth, which I designate by the letter E, has one plane surface, 1, and a convex surface, 2, upon its shank, and it is designed to be received in a socket formed between the clamp and saw plates by means of a rabbet cut out of the former, the longitudinal edge of which is a plane surface, the opposite edge of the saw-plate being convex, as shown in Fig. 6.

The heels *i* of bits or teeth E of my improved saw are concaved or convexed, and they fit snugly into or over corresponding convexities or concavities in the upper end of the sockets, formed as above described. They are thus prevented from axial vibration of any descrip-

tion, and their effect upon the timber is thus greatly increased.

By the use of a guard or key-piece, D, of soft metal, which is brazed to the clamp-piece B after the latter is inserted in the saw-plate, I secure the said clamp-piece inseparably to the saw-plate, and at the same time permit its sufficient movement for the purpose of releasing or clamping the tooth, and cause it to act with full force on the tooth by reason of the yielding character of the metal of which the key-piece is constructed.

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

The combination, with a saw-plate, A, and removable tooth E, of the clamp-piece B, the locking-wedge C, and the guard or key-piece D, the latter being constructed of soft metal, and applied substantially as and for the purposes herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

NELSON JOHNSON.

Witnesses:
A. MURPHY,
U. VAN FLEET.