

T. SMITH.
Modes of Fastening Diamonds into Blocks or
Saw-Teeth.

No. 139,337.

Patented May 27, 1873.



Fig. I.

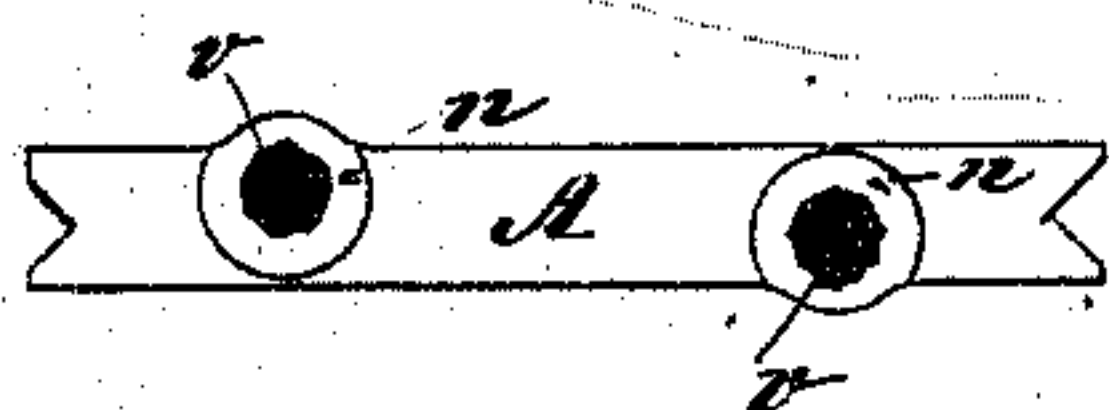


Fig. II.

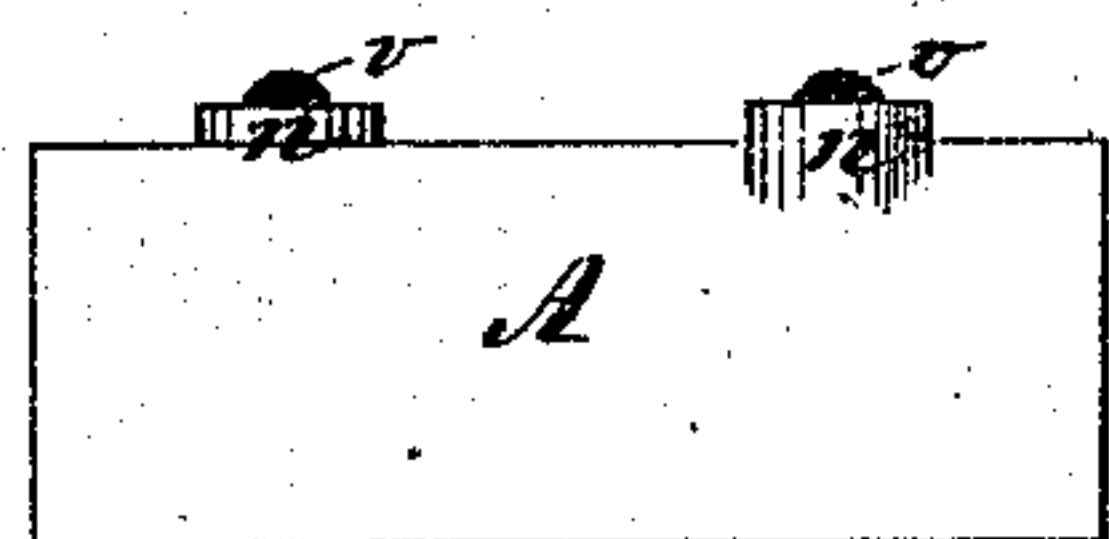


Fig. III.

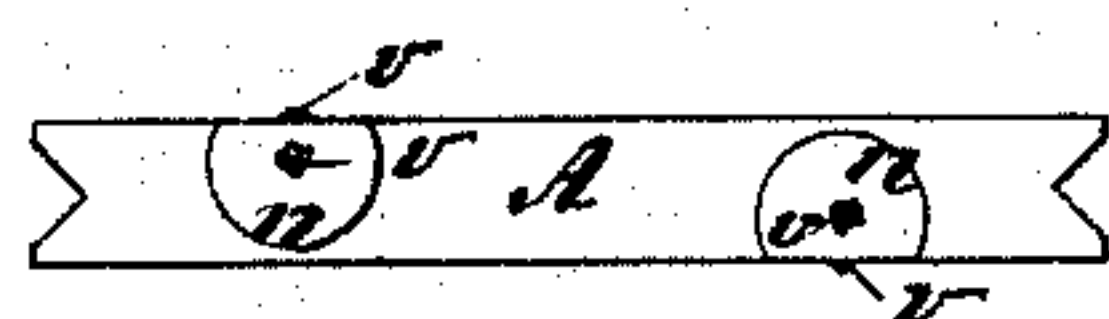


Fig. IV.

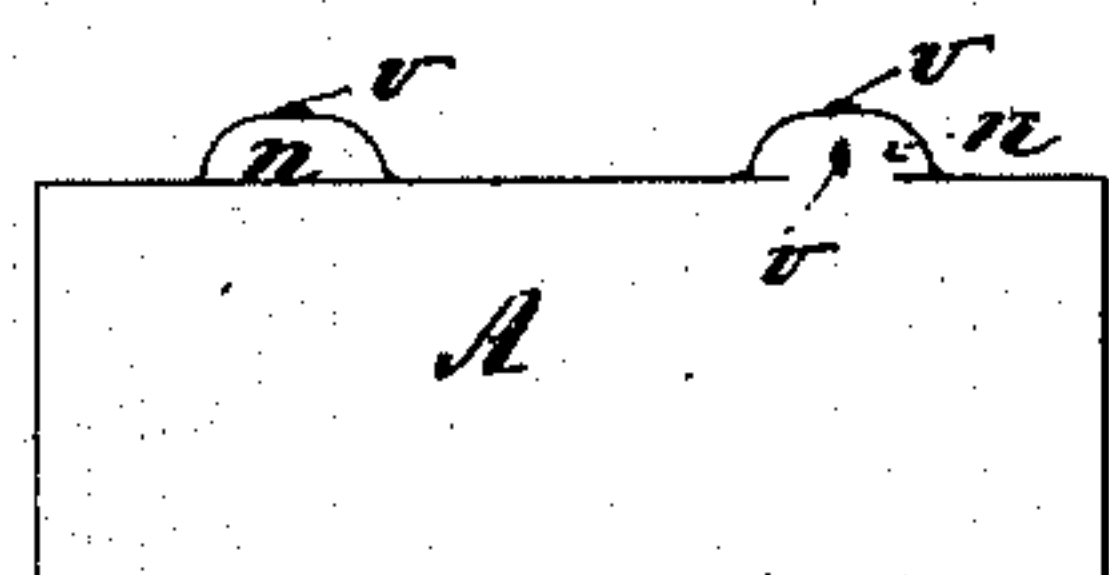


Fig. V.

Witnesses.
C. Thomson
Edw. & Nutting

Inventor.
Terrence Smith
per Henry C. Roeder
Attorney

UNITED STATES PATENT OFFICE.

TERRENC SMITH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT
TO RICHARD NEVILLE, OF SAME PLACE.

IMPROVEMENT IN THE MODES OF FASTENING DIAMONDS INTO BLOCKS OR SAW-TEETH.

Specification forming part of Letters Patent No. **139,337**, dated May 27, 1873; application filed
April 12, 1873.

To all whom it may concern:

Be it known that I, TERRENC SMITH, of New York, in the county and State of New York, have invented a new Process of Fastening Diamonds into Blocks, Saw-Teeth, or Saw-Blades, of which the following is a specification:

This invention relates to the mode of fastening diamonds into saw-teeth or blocks; and consists in working and forging the metal around the diamond to prevent the same from coming loose.

In the block, into which the diamond is to be inserted, is drilled a hole, *a*, (see Figure I,) as near the edge of said block as practicable, of a depth of about one-half the depth of the diamond and about one-third less in diameter. The block, tooth, or, if inserted into the saw-blade, that part of said blade where the hole is drilled, is then made red-hot, or brought to a cherry-heat, as it is usually called, when the diamond *v* is inserted into the hole *a*, and forced into the same by means of screw-clamps. When the block *n* is quite cool again the top part of the same is filed down about one-sixteenth of an inch, or more if the diamond is larger, leaving only a raised part or collar, *n*, around the diamond. (See Figs. II and III.) The block, or that part where the diamond has been inserted, is then again heated to a

red heat, and this raised part *n* worked or hammered around and over the diamond, leaving only a small part of the same projecting. (See Figs. IV and V.) When cooled off again the metal on the side of the block *A* is filed or cut away so as to expose a small part of the diamond, on the side of the block *A*, to be used as a cutting-surface on the side, Figs. IV and V. By this mode of fastening the diamond all danger of its becoming loose or falling out is prevented, as by the first process of forcing the same into the smaller heated hole, the sharp edges and corners of the diamond will be well embedded into the metal, which, while cooling, will firmly embrace the same, and during the second process the metal will be so worked around the diamond as to inclose the same entirely, with the exception of the small projection on its top part.

What I claim as my invention, and desire to secure by Letters Patent, is—

The manner and process of fastening diamonds into blocks, saw-teeth, or saw-blades, substantially as and for the purpose hereinbefore described.

TERRENC SMITH.

Witnesses:

HENRY E. ROEDER,
C. THORNTON.