(No Model.)

E. H. BIEBER.

DEVICE FOR DRILLING SQUARE HOLES.

No. 291,137. Patented Jan. 1, 1884.

Fig. 1

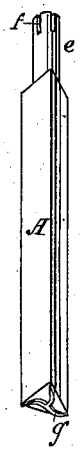


Fig. 2.

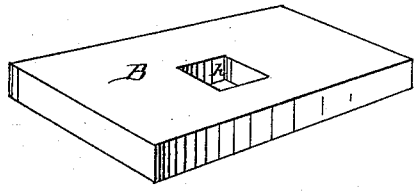


Fig 3.

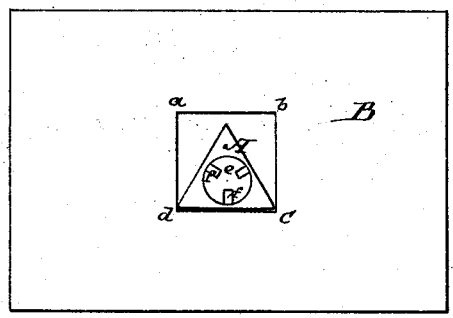
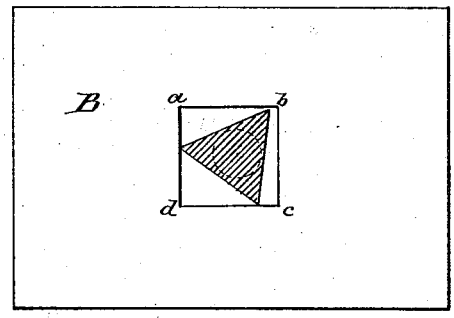


Fig. 4.



WITNESSES:

Jno Mancini

Geo Brunswick

INVENTOR

Ernst H. Bieber

BY Charles Raetzig

ATTORNEY

UNITED STATES PATENT OFFICE.

ERNST HERRMANN BIEBER, OF NEW YORK, N. Y.

DEVICE FOR DRILLING SQUARE HOLES.

SPECIFICATION forming part of Letters Patent No. 291,137, dated January 1, 1884.

Application filed April 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, ERNST HERRMANN BIEBER, a subject of the King of Saxony, and a resident of New York city, in the county of New York and State of New York, have invented a certain new and useful Instrument for Drilling Square Holes, of which the following is a specification.

My invention relates to improved tools for working out square holes.

The object of my invention is to produce a practical and handy instrument for making square holes.

In the accompanying drawings, Figure 1 is a perspective view of the bit to be used. Fig. 2 is a perspective view of the guide-plate. Figs. 3 and 4 are plan views of the guide-plate, showing the bit in different positions.

The bit A consists of a triangular prism, of steel or other suitable material, having at one end a rounded shank, *e*, which is provided with grooves *f f*, to engage with the clutches of a chuck or brace. The other end of the bit A is provided with the cutting-edges *g*. The horizontal section through the prismatic part of this bit forms a triangle, the three angles of which do not materially differ from each other. When using a bit whose horizontal section forms an isosceles triangle, one side of the triangle is a little less than one side of the square hole or opening *a b c d* in the guide-plate B.

The operation then is as follows: The guide-plate B, with the square hole *h* of the desired dimension, is placed upon the object to be drilled and held or otherwise firmly secured thereon in the desirable position. Hereupon the triangular bit A is entered through the hole *h* in the guide-block B and caused to rotate therein, either by means of a brace or other mechanical devices, with cutting-edges of the base pressed upon the object to be drilled.

Fig. 3 shows the bit in the guide-plate in its starting position.

Fig. 4 especially indicates how each corner of the bit in turn revolves in a corner of the hole *h*, while the other two corners slide by their contiguous sides, the combined action of the whole finishing, one after another, all of the four corners of the hole, making the complete square desired. The bit will thereby receive an irregularly eccentric motion, being guided by the walls of the hole *h* in such a manner as to drill an approximately perfect square hole. It will work easily in a brace, and should have a self-adjusting chuck when used in a lathe.

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

The combination of the three-angular bit A with the guide-plate B, having a square hole, *h*, substantially as and for the purpose herein described.

Signed at New York city, in the county of New York and State of New York, this 14th day of April, A. D. 1883.

ERNST HERRMANN BIEBER.

Witnesses:
RICH MARSCHALL,
C. B. MITCHELL.