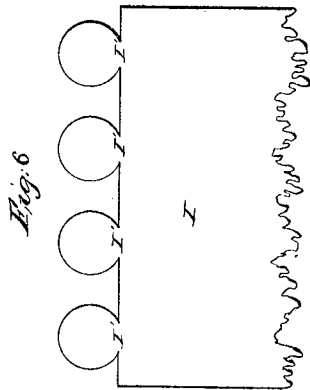
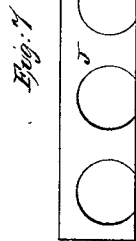
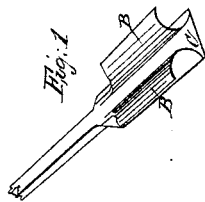
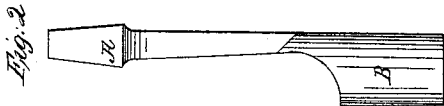
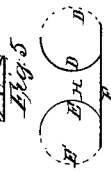
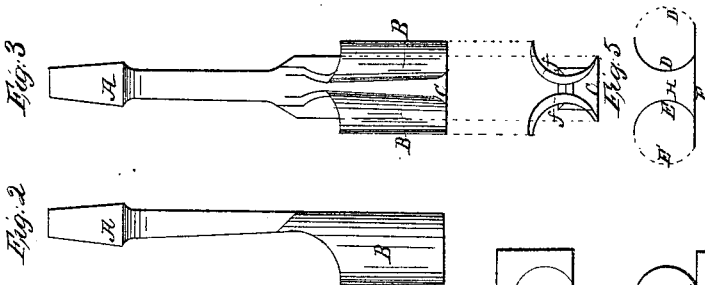
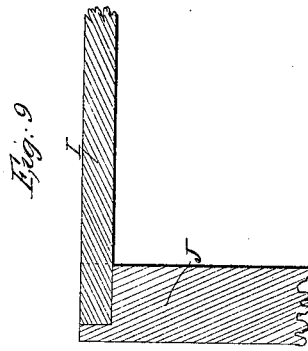
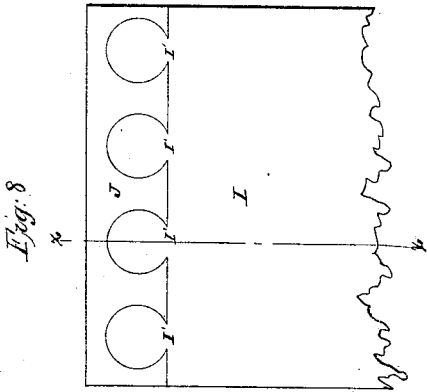


*G. W. Billings,  
Doretailing Machine.*

*N<sup>o</sup> 19,406.*

*Patented Feb. 23, 1858.*



# UNITED STATES PATENT OFFICE.

G. W. BILLINGS, OF CLEVELAND, OHIO.

## DOVETAILING-TOOL.

Specification of Letters Patent No. 19,406, dated February 23, 1858.

*To all whom it may concern:*

Be it known that I, G. W. BILLINGS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and Improved Dovetailing-Tool; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the dovetailing tool, Fig. 2, a side view, Fig. 3 a front view, and Fig. 4 an end view, showing the cutting edge. Fig. 5 shows the manner in which the tool is applied to make the tenon. The other figures represent the pieces dovetailed by this instrument.

The shank A, of the tool, may be put into a handle suitable for operating the instrument by hand, or it may be attached to machinery, and the tool operated by steam or other power, as it is equally well adapted to being operated by hand, or by other power.

The cutting part of the instrument consists of two semicircular lips B, so connected to the back of the tool, that a line drawn from one end to another of the semicircular cutting edge, will be at right angles to the back of the instrument, the lips each forming a half circle less half the width of the neck of the tenon, cut by them.

The lips, B, of the tool cut the whole tenon, with the exception of the shoulder, which is cut by the part C. The tool being applied as shown by the lines D, E, and F, Fig. 5, and force being applied to it, the piece H, circumscribed by the lines D, E, F, and the edge of the wood, is cut out. The tool then being withdrawn is again applied, so that one of the edges *b*, shall strike one of the lines D', E', and it being again driven in, will complete one of the tenons, and cut half another tenon, and the shoulder intervening between the two halves thus cut;

thus, the tool, at each application, cuts a half of two tenons, and one shoulder. The tenons of the piece I, Fig. 6, being prepared in the manner described: The piece J, Fig. 7, into which it is to be dovetailed, is then mortised by boring it with a bit, the diameter of whose bore corresponds with the diameter of the tenon. The bit is to be placed upon the piece J, so that the distance of its center, from the edge of the piece, is less than half the diameter of the tenon, according to the neck I'. The circumference of the bore, will then cut the edge of the piece, just sufficient to admit the neck of the tenon; the distance from one to another shoulder of the mortise coincides with the distance from one to another shoulder of the tenon. The tenons will then fit tightly in the mortises, as shown in Fig. 8.

Fig. 9 represents a vertical section of the dovetailed piece Fig. 8, in the direction of the line *x x*.

The tool most nearly resembling mine, cuts only rectangular tenons, which require the mortises also to be rectangular. My dovetailing tool cuts tenons to fit mortises bored by a common auger or bit, therefore less labor is required in dovetailing with my instrument than with any tool known previous to my invention.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent of the United States is:

The dovetailing tool, having semicircular lips B, B, for the purpose of cutting tenons to fit mortises made by simply boring with a common auger or bit, substantially as set forth.

G. W. BILLINGS.

Witnesses:

CHARLES W. CLISBEE,  
W. H. BURRIDGE.