

(No Model.)

E. GOLLINS.
BIT FOR CUTTING ROSETTES.

No. 517,691.

Patented Apr. 3, 1894.

Fig. 1.

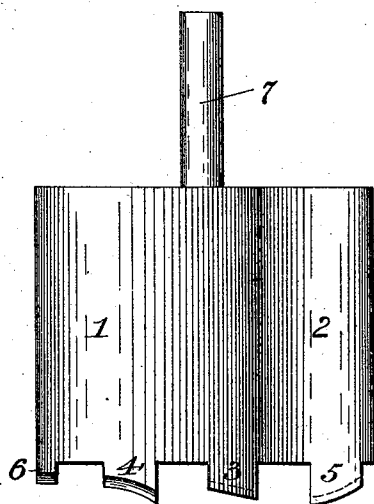


Fig. 4.

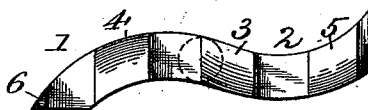


Fig. 2.

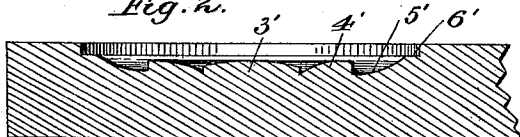
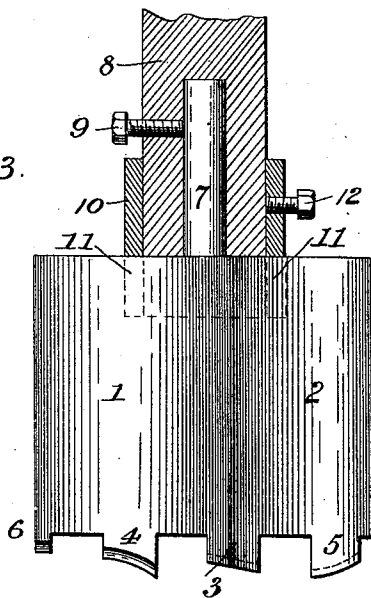


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BIT FOR CUTTING ROSETTES.

SPECIFICATION forming part of Letters Patent No. 517,691, dated April 8, 1894.

Application filed December 11, 1893. Serial No. 493,433. (No model.)

To all whom it may concern:

Be it known that I, EDWIN GOLLINS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Bits for Cutting Rosettes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to produce an improved construction of bit for cutting rosettes.

The invention is embodied in a bit in which the cutting edge for molding the adjacent members of the rosette is composed of a single series of segments formed alternately on curved wings extending on opposite sides of the axis of rotation, thereby equalizing and greatly reducing the torsional strain, and imparting to the cut a shearing action; and in which recesses or spaces are formed between and beyond the shallow cutting points of the segments to permit the easy escape of chips, and thereby further reduce the friction; as herein described and particularly claimed.

In the accompanying drawings, Figure 1 represents a side elevation of a bit made in accordance with my invention. Fig. 2 is a sectional view of a block having a rosette cut therein by my bit when its cutting edges are formed as shown in Fig. 1. Fig. 3 is a plan view looking at the cutting edge. Fig. 4 is a view showing how the bit is attached to a mandrel.

As shown in the figures, the bit is formed of two oppositely and preferably though not necessarily symmetrically curved wings 1 and 2. At one end of these wings are formed the segmental cutters while the other end is attached to a mandrel.

In the rosette shown in Fig. 2, the character 3' designates the center piece and 4', 5' and 6' convex, concave, and flat annular surfaces or members concentric with the center piece. Each member of the rosette, including the center piece, is cut by a separate part of the bit. In the instance shown, the parts of the cutting edge designated 3, 4, 5, and 6 cut the surfaces 3', 4', 5', and 6' respectively so that adjacent members on the rosette are cut by segmental cutters on opposite sides of the

axis of rotation thereby equalizing and reducing the torsional strain on the bit when in operation. The grinding out of the spaces 55 between the active parts of the cutting edge as shown also favors the release of shavings and chips when the bit is at work, and also further reduces the friction.

By curving the wings of the bit the cutting edges are correspondingly curved and therefore pass through the wood with a shearing action producing smooth surfaces which require no subsequent sand-papering as has heretofore frequently been necessary.

The body of the bit is made with a pin 7 in line with its axis of rotation. This pin is fitted into the end of a mandrel 8 and fastened with a set screw 9. On the mandrel is a removable sleeve 10 made with slits 11 into which enter the wings 1 and 2 of the bit and the latter is thereby braced against the torsional strain to which it is subjected. The sleeve is fastened on the mandrel by means of a set screw 12. I can get nearly the same results achieved by curving the wings of the bit in a straight bit by grinding the cutting members thereof at angles to the plane of the bit. The opposite wings are ground on their convex sides to form the cutting edges as shown, and as the several cutting members of the edge are worn off the intermediate spaces are correspondingly ground out so as always to have sufficient space for the passage of shavings, chips, &c.

In my bit it will be observed that no two points of any cutting member of the edge act at the same time on a radius from the axis of rotation.

It is clear that the design to be cut may be varied indefinitely and that rosettes may be cut in relief as well as intaglio.

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

1. A bit for cutting rosettes comprising wings 1 and 2 extending on opposite sides of the axis of rotation, the cutting edge composed of a single series of segments, the segments for molding adjacent members of the rosettes being arranged alternately on the wings, and recesses or spaces between the segments extending beyond their shallow cutting points in the direction of the axis of the bit to permit the escape of chips, substantially as set forth.

2. A bit for cutting rosettes comprising curved wings 1 and 2 extending on opposite sides of the axis of rotation, the cutting edge composed of a single series of segments, the
5 segments for molding adjacent members of the rosettes being arranged alternately on the wings, and recesses or spaces between the segments extending beyond their shallow cutting points in the direction of the axis of the

bit to permit the escape of chips, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN GOLLINS.

Witnesses:

FRANK M. RAYMOND,
GEO. M. FINCKEL.