

John Kuehnle.

IMPROVEMENT IN
CUTTER HEADS AND BITS.

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PATENTED MAY 17 1870

Fig. 1.

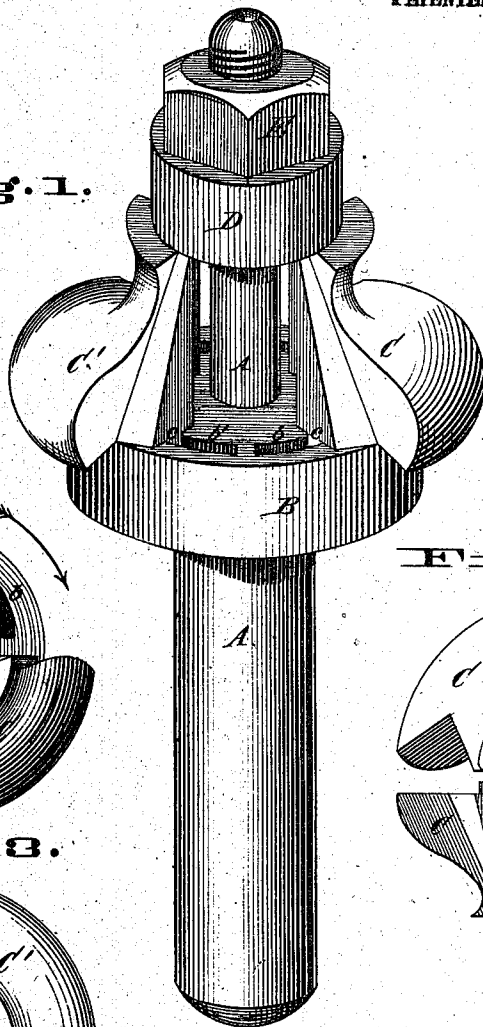


Fig. 2.

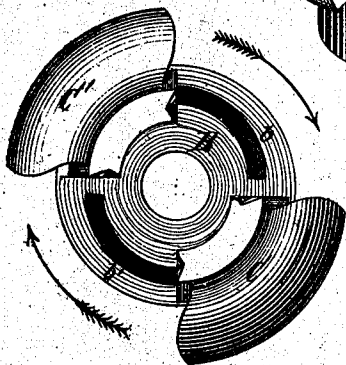


Fig. 4.

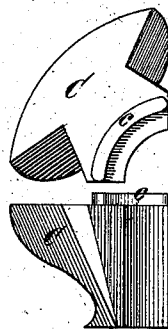
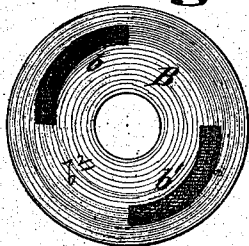


Fig. 3.



Fig. 5.



ATTEST.
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JOHN KUEHNLE, OF CINCINNATI, OHIO.

Letters Patent No. 103,200, dated May 17, 1870.

IMPROVEMENT IN CUTTER-HEAD FOR PLANING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JOHN KUEHNLE, of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Improvement in Rotary Cutters and "Bits;" and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof to enable one skilled in the art to which my invention appertains to make and use it, reference being had to the accompanying drawings making part of this specification.

My invention consists in a peculiar construction of cutter-head and accompanying "bits" or cutters, by which the "bits" though in themselves concentrically formed by turning in a lathe, may, when fitted to the cutter-head, be set to cut in one or both directions, and yet have the proper "clearance" or relief behind the cutting-edge.

In the accompanying drawings—

Figure 1 is a perspective view of the cutter-head and bits attached.

Figure 2 is a plan showing the cutters or bits set to cut in one direction.

Figure 3 exhibits the bits set to cut in the opposite direction.

Figure 4 is a plan and elevation, showing the construction of the "bits," the tongue being formed concentric with the body.

Figure 5 is a plan of the cutter-head when made for cutting in one direction only. The cutter-heads shown in figs. 1, 2, and 3 are adapted, in connection with the "bits," for cutting in both directions.

A is the spindle,
B the cutter-head, and
C C' the "bits."

If the cutter-head is required to be reversible, and to cut in both directions, it is provided with semicircular grooves, $b b'$, eccentric to the axis, the eccentricity being, as shown, on opposite sides.

It will be observed that the eccentric grooves $b b'$ do not meet at the ends, but leave blank spaces, b^2 , between them, against which the tongues of the cutters abut, there being sufficient metal left at those points to afford a firm support to such cutters, and positively preventing them from slipping.

The bits C C' are formed in the lathe by turning, to

the proper shape for the required work, a piece of steel, which, when cut, will form four cutters or "bits."

Concentric tongues, c , are formed upon the bits, which fit into the eccentric grooves $b b'$ of the cutter-head.

The tongues c being quarter-circles, or nearly so, and the grooves $b b'$ nearly half-circles, it will be seen that the bits can be slipped backward and forward, or to and fro, in the slots or grooves.

When secured at one end of the grooves, the bits are adapted, as in fig. 2, to cut in one direction, and, when at the opposite ends, to cut in the opposite direction, as in fig. 3, and in either position (by reason of the eccentricity of the grooves $b b'$) are properly relieved or "cleared" behind the cutting-edges.

The grooves in the cutter-head, fig. 5, being but quarter-circles, the bits, when in place, can cut in one direction only.

The bits are secured in place by the collar D and the nut E on the screw-threaded end of the spindle A. The collar can be, if necessary, provided with grooves or projections corresponding in eccentricity to the grooves $b b'$ in the cutter-head, and adapted to fit over projections or into grooves formed on that end of the bits.

As an inferior modification of my invention, the position of the grooves $b b'$ and tongues c can, of course, be reversed, the grooves being formed in the "bits" and the projections on the cutter-head.

I am aware that rotary cutter-heads have been constructed with eccentric grooves for the same purpose as I have described; I, therefore, make no broad claim to an eccentrically-grooved cutter-head; but

I claim herein as new and of my invention—

The eccentrically-grooved cutter-head B $b b'$, when constructed with blank spaces b^2 between the ends of the eccentric grooves, substantially as and for the purpose set forth.

In testimony of which invention I hereunto set my hand.

JOHN KUEHNLE.

Witnesses:

FRANK MILLWARD,
J. L. WARTMANN.