

D. K. OVERHISER.
CUTTER HEADS.

No. 179,598.

Patented July 4, 1876.

Fig. 1.

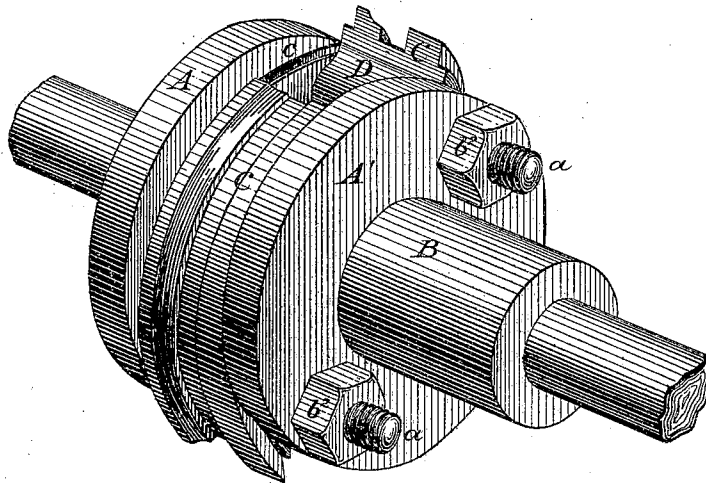


Fig. 2.

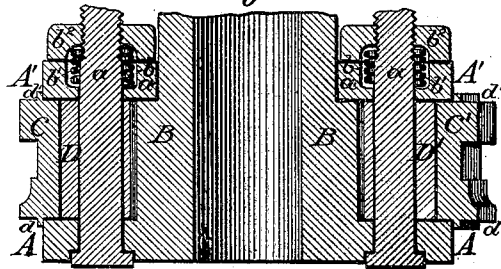
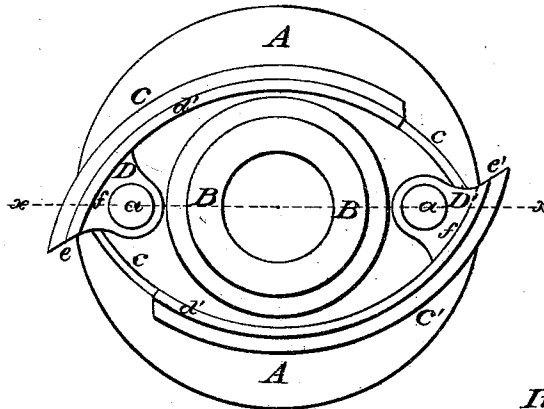


Fig. 3.



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Fig. 4.

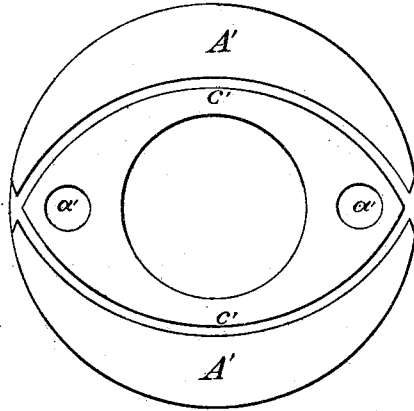


Fig. 5.

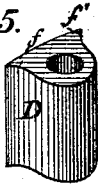
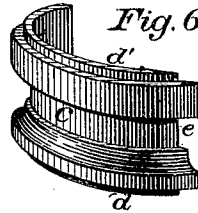


Fig. 6.



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UNITED STATES PATENT OFFICE.

DAVID K. OVERHISER, OF WILLIAMSPORT, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO THOMAS AND JOHN H. MILLSPAUGH, OF SAME PLACE.

IMPROVEMENT IN CUTTER-HEADS.

Specification forming part of Letters Patent No. **179,598**, dated July 4, 1876; application filed May 6, 1876.

To all whom it may concern:

Be it known that I, DAVID K. OVERHISER, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Improvement in Cutter-Heads; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is an improvement in cutters and cutter-heads for tonguing and grooving, or for any kind of molding, rabbeting, or dadoing, whereby a more efficient cutter is obtained, and one that can be easily sharpened, and a simple, convenient, and effective means provided for holding the cutters in position.

My invention therein consists in the combination, construction, and arrangement of the several parts composing my cutter-head, all as more fully hereinafter explained.

To enable others skilled in the art to manufacture my device, I now describe the same in connection with the drawings, in which—

Figure 1 is a perspective view of the cutter-head, with the cutters in position. Fig. 2 is a cross-section on the line *xx* in Fig. 3; Fig. 3, a top view of the cutter-head and cutters, the upper plate being removed; Fig. 4, a view of the inside of the upper plate; Fig. 5, a view of one of the interposed sleeves; Fig. 6, a view of one of the cutters.

Like letters denote corresponding parts in each figure.

A A' represent two circular plates, between which the cutters are clamped. A hub, B, having a hollow center, and adapted to be secured to a suitable shaft, is cast with the plate A projecting from the inside thereof. The circular plate A' is provided with a central opening, and slips over the end of the hub and over two screw-bolts, *a*, which pass from the plate A through proper holes *a'* in the plate A'. The holes *a'* are countersunk on the outside of the plate A', forming cavities *b*. Spiral springs *b'* are slipped over the ends of the bolt *a* into these cavities, and pro-

ject above the surface of the plate A'. Nuts *b²* screw onto the ends of the bolt *a*, and press upon the springs *b'*; but when turned down force the springs into the cavities *b* and bear directly upon the plate A'. In the inner side of the plate A are cut two segmental grooves, *c*, eccentric to the periphery of the plate, passing entirely across such plate, and terminating in its circumference at two opposite points. These grooves are preferably arcs of circles of the same size as the circumference of the plates. Similar segmental grooves *c'* are cut in the plate A. C C' are the cutters, of the form shown in Fig. 6, and are provided with projections *d d'* on the top and bottom edges, which fit nicely the grooves *c c'*. The outer surfaces of these cutters are turned in the form for making any kind of tonguing, grooving, or molding. The inner sides of the ends *e* of the cutters are beveled toward the front to an edge, so that they can be sharpened by filing or grinding square on the face, and will always keep their form. These cutters slide in the grooves *c c'*, and project on opposite sides from the edges of the plates A A'. Two sleeves, D D', the same in length as the width of the cutters, are placed one over each bolt *a*, between the plates A A'. These sleeves are of the form shown in Fig. 5, are slipped over the bolts so as to be in the angles formed by the intersecting grooves, and have their edges *f f'* chamfered to fit the inside of the cutters, acting as chip-breakers and preventing the shaving from clogging in the throat of the cutter-head. The sleeves D D' are adapted to be turned to either side and fit closely the edge of the cutter when held in either groove.

The cutters are placed between the plates A A' and the nuts *b²* screwed down upon the springs *b'*. These springs, pressing upon the plate A', the cutters are held so that they can be moved freely in the cutter-head without dropping out, and can be adjusted accurately. The nuts are then turned down, forcing the springs into the cavities *b*, and, bearing upon the face of the plate A', hold the cutters rigidly in place.

The cutters used in my device, having the same form throughout, can be used until they are nearly worn away, always retaining their form and making a smooth cut.

Having thus fully described my invention, and explained some of its advantages, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a circular cutter head, adapted to be slipped bodily onto a suitable shaft, the combination of the circular plates A A', the hub B, cast in one piece with one of the plates, the screw-bolt *a a*, and the interposed segmental cutters C C', substantially as described and shown.

2. In a cutter-head, the combination, with the plates A A' and the interposed segmental cutters, sliding in grooves formed in the said plates, of the screw-bolts *a a*, and the spiral springs *b¹ b¹*, for the purpose of allowing the

cutters to be accurately adjusted in the said grooves, substantially as described and shown.

3. In a circular cutter-head, the combination with the plates A A' and bolts *a a*, of the segmental cutters C C', and the double-edged sleeves D D' slipped over the said bolts, constructed and arranged substantially as described and shown.

4. In a circular cutter-head, the combination with the plates A A', having the circular grooves *c c'*, of the circular cutters C C', the sleeves D D', the bolts *a*, and the springs *b¹*, all substantially as described and shown.

This specification signed and witnessed this 1st day of May, 1876.

DAVID K. OVERHISER.

Witnesses:

S. K. T. SEIGEL,
D. REPASS.