# Richards & Curtis.

## Cutter Head.

No. 91,269. Patented Jun. 15, 1869.

Fig: 3.

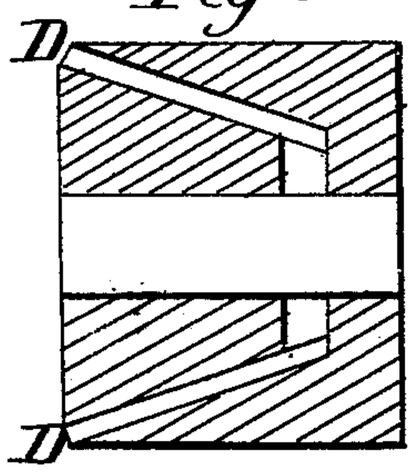



Fig. 4

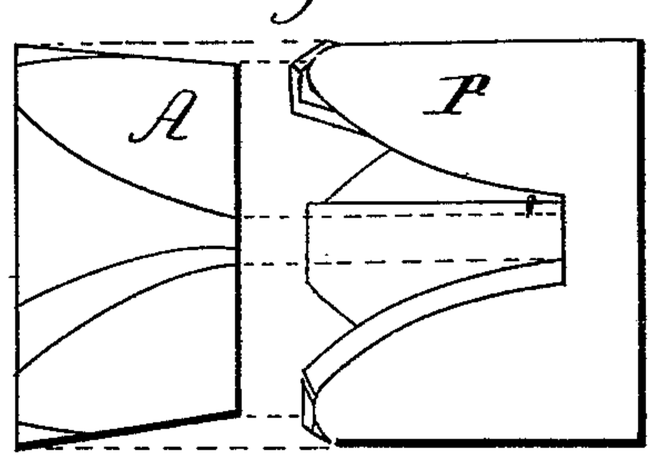



Fig: 1.

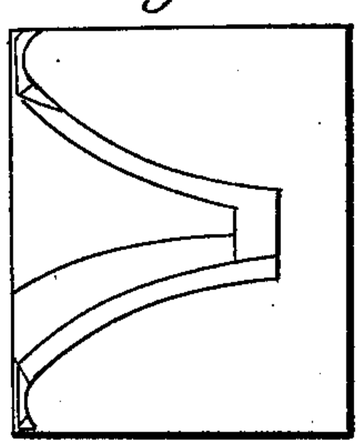
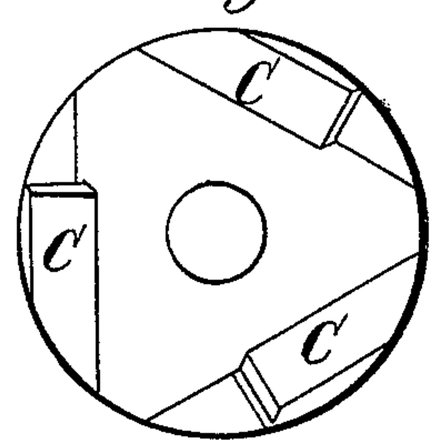


Fig: 2.




Witnesses
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CHARLES RICHARDS AND WILLARD CURTISS, OF CLEVELAND, OHIO.

*Letters Patent No.* 91,269, *dated June* 15, 1869.

## IMPROVEMENT IN CUTTER-HEAD.

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

*To all whom it may concern:*

Be it known that we, CHARLES RICHARDS and WILLARD CURTISS, of Cleveland, in the county of Cuyahoga, and State of Ohio, have invented a certain new and improved Cutter-Head; and we do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view of the cutter-head.

Figure 2, a detached section.

Figure 3, a transverse section.

Figure 4, a side view of the two sections, by comprising the head.

Like letters of reference refer to like parts in the several views.

This invention has for its object a cutter-head, so constructed that the blades, or cutters thereof are held in place by the wedging together of the two sections comprising the head, and between which said cutters are placed, and so guarded by the face or sides of the head that the depth of the cut can be regulated, thereby preventing the wood from splitting or riving while being worked.

This head is constructed in two sections, A B, fig. 4.

Section B consists of a cylindrically-shaped block, the central portions of which are so cut out as to leave three lobes, or sides C, but which may be more or less in number, the outer surfaces of which conform to the general circumference of the block, whereas the inner surface of the lobes is a plane, proceeding from a thin edge, at *a*, downwardly and inwardly, forming an angle to its external surface, and an inclined plane to the axial line, as shown in the transverse section, fig. 3.

Section A is also a cylindrical block, having three of its sides cut down to a plane, conforming, in the degree of its angle and character, to that of the inside of the lobes, and against which it is arranged in contiguity, as shown in fig. 3, in which figure it will be seen that the section A is inserted in section B, and the planes of the two sections in juxtaposition, as above said.

Between the planes of the two sections are placed the cutters, or blades D, with the cutting-edge more or less projecting beyond the face or circumference of the sections, as the thickness of the shaving to be cut may demand.

It will also be observed that the cutting-edge of the blades is not parallel to the axial line, but at an angle thereto, and slightly curving in the line of its edge, as seen in figs. 1 and 4.

Below the edge of the blade is cut a groove, E, forming a throat, to facilitate the escape of the chips from the edge of the cutters.

The two sections are fitted to a mandrel, or shaft, and thereon screwed together by a nut, wedging the cutters between them, thereby holding them firmly in place, as shown in figs. 1 and 3.

It will be obvious, that by this means of securing the cutters in the head, no bolts or screws are required, and that they can be adjusted for cutting any degree of thicknesses, and no more than that particular thickness at which they may be set, as the face of the head prevents them from cutting any deeper into the timber than the particular set given to them. Therefore, no riving or splintering of the timber can take place.

By placing the edge of the cutters at an angle to the axial line, a drawing or shaving-like action is obtained to the cut, which will therefore cut easier and smoother than if the cutting-edge were in a right line to that of rotation.

The cutter-head, as above described, is for planing flat surfaces, but cutter-heads for mouldings and groovings can be constructed in the same manner, varying only the surface of the two sections, according to the style of the mouldings or other work to be done, and shaping the cutter in conformity therewith

What we claim as our invention, and desire to secure by Letters Patent, is—

The herein-described cutter-head, consisting of the sections A and B, substantially in the manner set forth, and for the purpose specified.

CHARLES RICHARDS
WILLARD CURTISS.

Witnesses:
J. H. BURRIDGE,
FRANK S. ALDEN.