

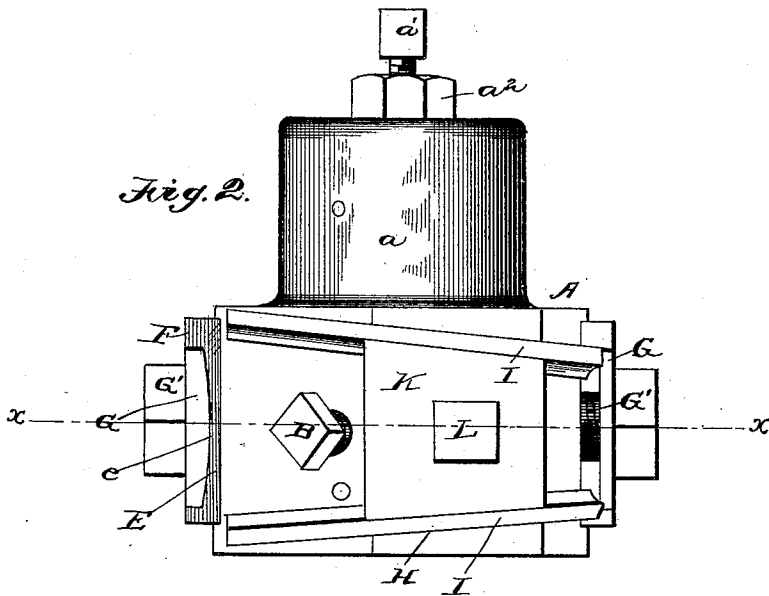
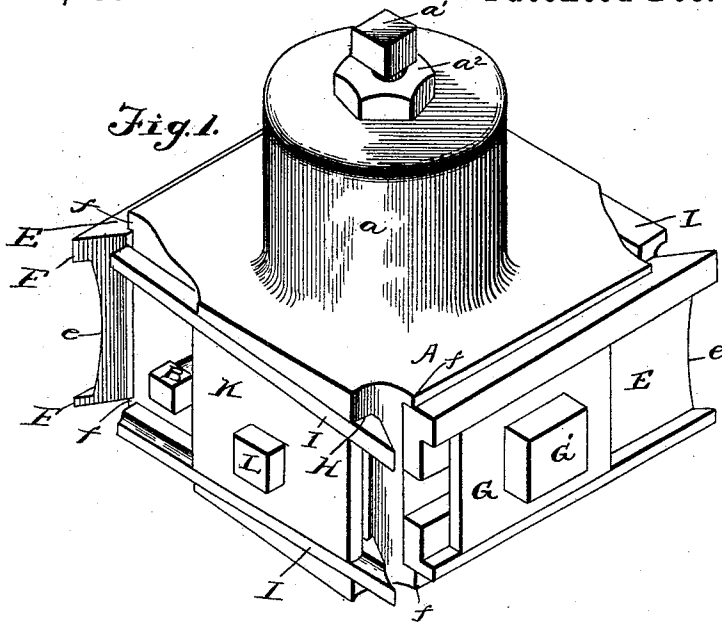
(No Model.)

2 Sheets—Sheet 1.

F. H. VAN HOUTEN.
ROTARY CUTTER HEAD.

No. 487,436.

Patented Dec. 6, 1892.



Witnesses

J. M. Fowler
Alex. Stewart

Inventor

Frank H. Van Houten

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Attorneys

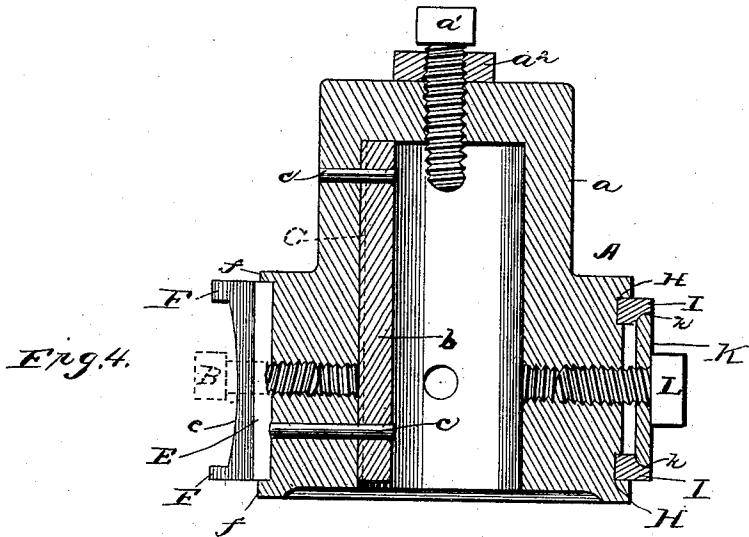
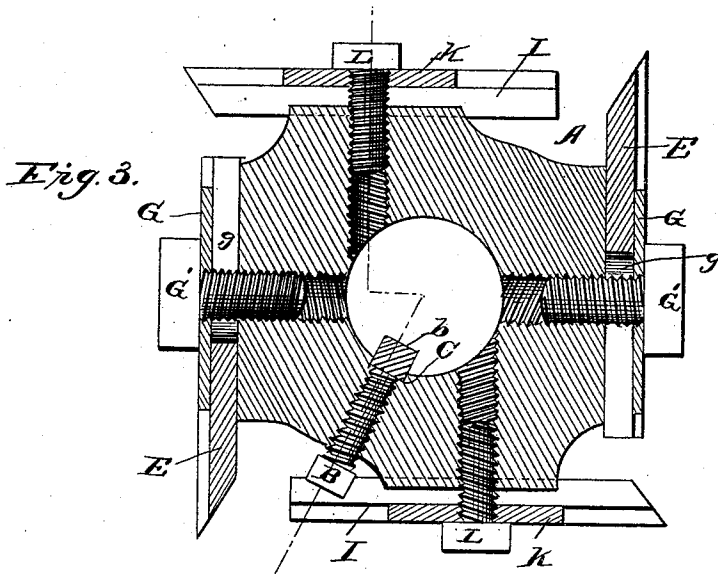
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UNITED STATES PATENT OFFICE.

FRANK H. VAN HOUTEN, OF MATTEAWAN, ASSIGNOR TO THE DUTCHESS TOOL COMPANY, OF FISHKILL-ON-THE-HUDSON, NEW YORK.

ROTARY CUTTER-HEAD.

SPECIFICATION forming part of Letters Patent No. 487,436, dated December 6, 1892.

Application filed June 23, 1892. Serial No. 437,727. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. VAN HOUTEN, of Matteawan, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Rotary Cutter-Heads; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in rotary cutters, particularly such as are ordinarily mounted on a vertical spindle; and the object of the invention is to provide an improved cutter of this general character designed particularly for dressing and giving proper cross-sectional contour to blind-slats.

Referring to the accompanying drawings, Figure 1 is a perspective view of a cutter-head constructed in accordance with my present invention. Fig. 2 is a side elevation. Fig. 3 is a cross-section on the line $x x$. Fig. 4 is a vertical section through the set-screw and key.

Like letters of reference in the several figures denote the same parts.

In the formation of slats for window-blinds the sides as well as the edges have to be given a convex surface or exterior, the curves at the edges of course being struck with a much smaller radius than at the sides, giving the slat an approximately-elliptical form in cross-section. It is with a view of enabling the slats to be finished from the rough strips at one operation by a single head on each side that I have designed my present invention.

In carrying the invention into practice a stock or body A is provided adapted to be removably mounted on a rotary power spindle or shaft. This stock may be of any approved form, preferably, however, having four faces for the attachment of the cutters with a central dome a , into which the aperture for the shaft extends, and with a set-screw a' at the top, held by a lock-nut a^2 to adjust the head longitudinally of the shaft. The head is held rigidly in place on the shaft by a set-screw B, as usual; but in order to secure a more perfect clamping action without lateral displacement or liability of loosening through the in-

dentation or wearing of the shaft by the screw a hardened key b , extending longitudinally of the head in a seat C and held in place by pins c , is interposed between the screw and shaft, the latter of course having a seat for the reception of the key, as will be readily understood. The key is held in the head under all conditions, and therefore cannot be lost. Two of the faces of the stock, preferably diametrically-opposite faces, are dressed off for the reception of wide cutters E for finishing the side of the slat. Small ribs f are formed on these faces for convenience in properly positioning the cutters E, and the latter, it will be particularly noted, have a wide curved cutting-edge e , formed by concaving the face of the cutter, as shown clearly in Fig. 2. They (the face-cutters) are provided with projecting edge-cutters or portions F for reducing the strips to proper width preparatory to the rounding process, which is accomplished by the cutters on the other faces of the stock, as will be presently explained.

By concaving the face of the cutters E and providing the raised edge portions F it will be noted that the proper contour of the cutting-edge is preserved and the grinding or sharpening may still be done on a straight surface or in one straight plane, thus simplifying greatly the sharpening operation. These cutters are held in place by plates or washers G, fitting the concave surface, and set-screws G' , passing through the washers and through slots g in the cutters themselves, clamping the whole firmly against the stock.

The faces of the stock at right angles to the cutters E are adapted for the reception of the cutters for rounding and dressing the edges of the slat, and for this purpose they are formed with converging slots or channels H, in which fit cutters I, two of the latter being preferably employed on each face—one at the top and the other at the bottom—with their cutting-edges at the forward or converging end. The cutting-edges are curved properly to form the edges of the slats, the curvature being secured, as in the other cutters, by concaving the longitudinal surface of the cutters and forming a straight or plane grinding-sur-

face. The converging cutters are advanced far

enough to approach just near enough to round off smoothly the edges left square by the side-dressing knives, and it will be noted that by advancing or withdrawing the knives or cutters the width of the slats may be regulated to a nicety within certain limits, and, what is of the greatest importance, the converging arrangement of the edge-dressing knives gives a perfect clearance, there being absolutely no drag or friction between the work and the non-cutting surface, and the chips find a ready escape without clogging.

The converging cutters are held rigidly in the converging seats by plates K, having converging and curved edges *k* fitting in the concavities in the cutters and clamped rigidly in place by set-screws L, passing through the plates and into the stock.

At the corners the stock is cut away to afford clearance for the cutting-edges, as is usual in this class of devices.

In operation the cutters E dress and finish the sides of the slats, giving them the proper curvature, and reduce the slats to approximately the proper width. The converging cutters reduce the edges to the proper curve, making the whole smooth and finished. This finished appearance, thus secured so easily, is due to the fact that the cutters for dressing the sides and edges are mounted rigidly on the same head and may be adjusted to a nicety. When once adjusted, the character of the work will remain uniform throughout—a difficult object to attain where the cutters for dressing the said portions of the surface are on different heads, to say nothing of the difficulty in adjusting the same to render the surface perfectly smooth and uniform.

What I claim as new is—

1. In a rotary cutter-head such as described, the combination, with the stock, of the side-dressing cutter secured rigidly on one face thereof and the converging edge rounding and dressing cutters secured rigidly on another face thereof with the cutting-edges at

the forward and converging ends, substantially as described.

2. In a rotary cutter-head such as described, the combination, with the stock and the side-dressing cutter secured rigidly on one face thereof with the projecting width-reducing cutters, of the converging edge rounding and dressing cutters secured rigidly on another face with the cutting-edges at the forward and converging ends, substantially as described.

3. In a rotary cutter-head, the stock having a plane face with side-dressing cutter secured therein in a plane at right angles to the center of rotation of the head, a face having seats dressed therein converging toward the forward end, and edge-dressing cutters secured therein with the cutting-edges at the converging ends, substantially as described.

4. In a rotary cutter-head, the combination with the stock, of the side-dressing cutter secured thereon, having the concave outer face, projecting edge-cutting surface, and a plane grinding or sharpening surface for all said edges, substantially as described.

5. In a rotary cutter-head, the combination, with the stock having the seats or grooves dressed therein at top and bottom and converging toward the forward end, of the cutters in said seats, the converging plate interposed between said cutters, and the set-screw for clamping the plate to the stock, substantially as described.

6. In a rotary cutter-head, the combination, with the stock having the central concavity for the shaft with the groove or seat therein and the external cutters, of the hardened key fastened in said seat in the stock and the set-screw passing through the stock and bearing on said key, substantially as described.

FRANK H. VAN HOUTEN.

Witnesses:

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FREDERICK PETERS.