(Model.)

W. F. & J. BARNES.

GROOVE CUTTER.

No. 261,197. Patented July 18, 1882.

Fig. 1.

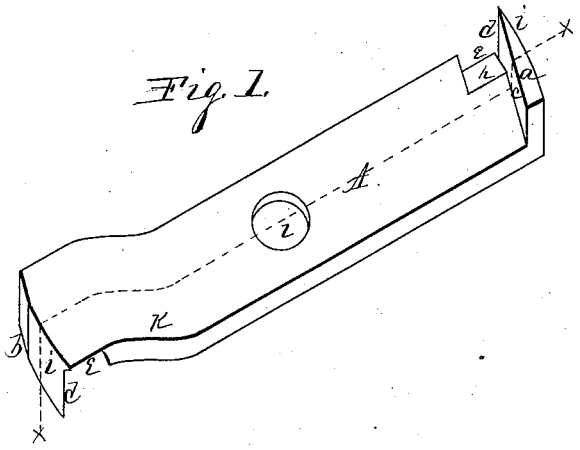


Fig. 2.

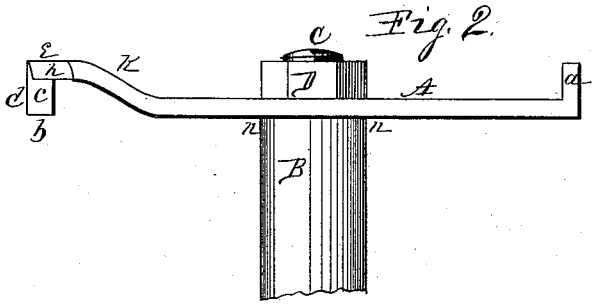
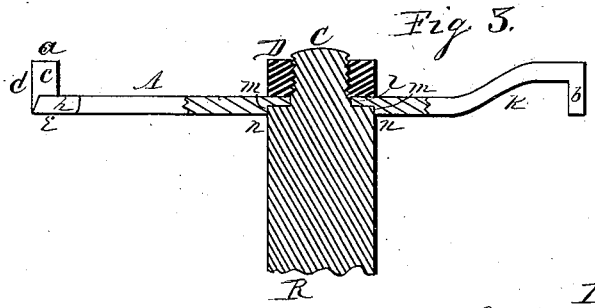


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM F. BARNES AND JOHN BARNES, OF ROCKFORD, ILLINOIS.

GROOVE-CUTTER.

SPECIFICATION forming part of Letters Patent No. 261,197, dated July 18, 1882.

Application filed April 10, 1882. (Model.)

To all whom it may concern:

Be it known that we, WILLIAM F. BARNES and JOHN BARNES, citizens of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented a new and and useful Groove-Cutter, of which the following is a specification.

This invention relates to cutters designed to be employed, in connection with revolving spindles or cutter-heads, mainly for the purpose of producing a groove or rabbet in the edge or other portions of timber; and it consists in the peculiarly-formed cutter represented in the accompanying drawings, in which—

Figure 1 is an isometrical representation of our improved cutter, of which Fig. 2 is an edge view as mounted on a spindle; and Fig. 3 represents the edge of the cutter opposite that shown in Fig. 2, having its center portion and the spindle on which it is mounted shown in section.

In the figures, A represents a cutter of bar form, made from plate or bar material of suitable dimensions. The end portions, *a* and *b*, of this bar are bent in opposite directions at right angles to the plane in which the cutter rotates and oblique to the central axial plane of the cutter represented by the dotted line *x*. This oblique angle of the bent portions *a* and *b* relatively with the axial plane is such that when the outer surface, *i*, of the bent arms is ground or otherwise reduced to produce the required or necessary lead to the cutter, it will, in connection with the inner angled surface, *c*, of the bent ends of the bar, form or produce a proper cutting-edge, as represented at *d*. These side cutting-edges or lip-cutters of our improved cutter, as represented at *e*, project slightly in advance of the end cutting-edges, *d*, and these lip or side cutting-edges are produced by reducing the outer end portion of the forward edge of the bar on its side, to which the end portions are bent, and immediately inside of the bent end portions, as represented at *h*, producing the cutting-edges *e*. One end of the cutting-bar is bent in an ogee form, as represented at *k*, for the purpose of bringing the end cutters, *a* and *b*, in the same plane of rotation. This cutter-bar is bored in its lengthwise center, as at *l*, to receive the end portion of a suitable spindle, and in this instance one side of the bar is countersunk, as at *m*, to give it a true bearing on the shoulder end of the spindle.

At B is represented a spindle which is of suitable dimensions, having its end portion made in shoulder form, as shown at *n*, adapted to enter the countersunk portion of the cutter. The extreme end portion, C, of this spindle is screw-threaded, and is fitted with a screw-nut, D, by means of which the cutter is removably fixed in place on the spindle.

From the construction of our improved cutter, as herein described and shown, it will be seen that when from use or otherwise the cutters have become dull they can be readily sharpened by grinding or otherwise reducing their peripheral surface, and this reduction will also serve to keep the side cutting-edges in advance of the end cutting-edges. It will further be seen that by reason of the side cutters being on opposite sides of the end cutters we produce a cutter less liable to bind when employed as a grooving-bit than bits in which the side cutters are formed on each side of the same end cutter. By this construction we produce a grooving-bit at a small cost, capable of, perhaps, all the uses of the ordinary double-lipped grooving-bit.

We have represented our improved cutter in connection with a spindle, to which application in the form represented it is especially adapted; but it is evident that even in the form represented they are capable of use in connection with a disk-formed cutter-head; but for this purpose cutters of less length, so as to place them on opposite sides of the cutter-head, might be found more convenient; or, instead of the double end cutters, single end cutters of our improved construction may be employed.

We claim as our invention—

A blade for cutter-heads, provided with end cutters bent at right angles to the plane of rotation in opposite directions and oblique to the axial or radial plane, and having its end cutters in the same plane of rotation and its side cutters on opposite sides of the blade, substantially as and for the purpose hereinbefore set forth.

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