(No Model.)

S. ERB.

ROTARY CYLINDER AND CUTTING KNIFE FOR PLANING MACHINES.

No. 456,761. Patented July 28, 1891.

Fig. 1.

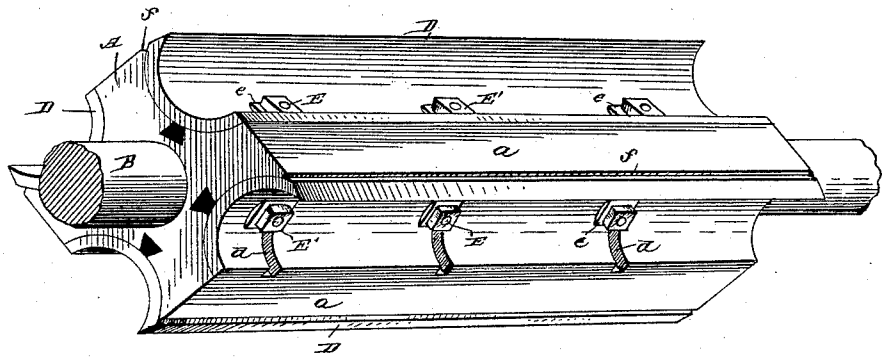


Fig. 2.

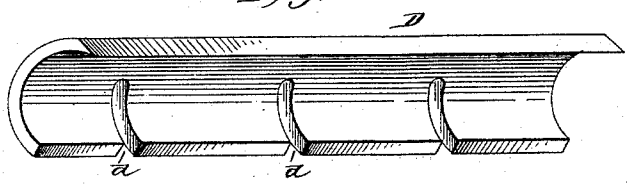


Fig. 3.

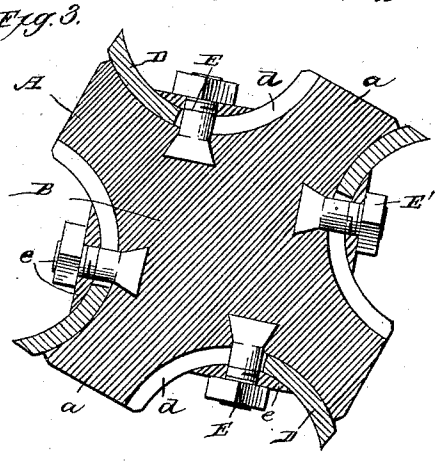
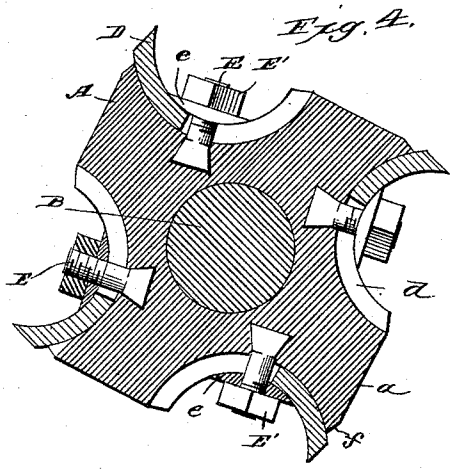


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL ERB, OF MESABA, MINNESOTA.

ROTARY CYLINDER AND CUTTING-KNIFE FOR PLANING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 456,761, dated July 28, 1891.

Application filed March 4, 1890. Serial No. 342,620. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL ERB, of Mesaba, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Rotary Cylinders and Cutting-Knives for Planing-Machines; 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 has for its object to provide a cylinder and cutting-knives for planing-machines, which will do their work easier and better than those heretofore employed, with little or no danger of breaking the knives, and which will not knock out the knots nor tear the lumber when cross-grained, and, further, will readily clear themselves while in operation.

In the accompanying drawings, Figure 1 is a perspective view of a cylinder and knives secured thereon. Fig. 2 is a similar view of one of the knives. Fig. 3 is a sectional view taken transversely through the cylinder and knives. Fig. 4 is a cross-section showing a modification.

Similar letters of reference indicate the same parts in all the figures.

The cylinder proper A is, in the preferred construction, formed integral with the shaft B, the latter, in effect, constituting gudgeons, which form the journals and carry the drive-pulleys, through which motion is imparted to the cylinder. On each of the four sides of the cylinder, when the same is square or substantially so, is formed a concavity, semicylindrical in cross-section and extending from one end of the cylinder to the other. These concavities are preferably located to one side of the center of each face, thereby leaving a relatively thick section *a*, which serves as a brace for the knives, as will be now explained.

The knives D are given a curvature in cross-section, corresponding to the curvature of the concavities in the cylinder, and are adapted to be fitted in said concavities with their cutting-edges at the corners of the cylinders. Thus the cutting ends of each knife have a strong backing formed by the solid sections *a* of the cylinder. At the bottom of each of the concavities dovetailed recesses are formed in the cylinder, into which are fitted the correspondingly-shaped heads of the bolts E, which pass through slots or apertures *d* therein, and have washers *e* and nuts E′ applied thereto to retain the knives rigidly in place, but at the same time permitting them to be readily adjusted so as to compensate for wear on the cutting-edge, such adjustment being effected by simply loosening the nuts and moving the knives forward, as will be readily understood. With this construction of semi-cylindrical knives and cylinder it will be noted that the knives are supported clear up to the cutting-edges by the solid metal of the cylinder. The nuts and bolt ends are entirely below the surface of the same, and ample room is given for the clearance of chips, &c.

Where the cylinder is of small size and a sufficient thickness of metal would not be left between the shaft (when the latter passes through the cylinder) and bottom of the concavities for the dovetailed recesses or bolt-holes, the curvature of the knives and concavities into which they fit may be made sharper and the bolts passed into one side of the shaft, as indicated in Fig. 4.

In operation the action of knives constructed as herein described will be found much more satisfactory than those ordinarily used, there being no danger of chips or splinters forcing their way between the knives and cylinder, as all the chips and splinters which are removed remain in front of the knives instead of in a space formed in the angle between the cutting-edge and cylinder; but to further insure against any accident of this nature the extreme edges of the cylinders immediately back of the cutting-edges are beveled away, as at *f*, thereby keeping the edge of the cylinder below the level if the knife and any splinters passed by the cutting-edge be deflected and prevented from forcing their way between the cutter and cylinder.

Having thus described my invention, what I claim as new is—

A cutter-cylinder for planers, having the plane faces arranged at an angle to each other, forming corners, with the semi-cylindrical concavities in each of said faces, at one side and extending from end to end of the cylinder, and the semi-cylindrical knives secured in said concavities, with the cutting-edges at the corners, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SAMUEL ERB.

Witnesses:
A. G. McKINLEY,
D. J. KINNEY.