No. 714,359

Patented Nov. 25, 1902.

# J. BROOKS.

## DISK CUTTER.

(Application filed Apr. 7, 1902.)

(No Model.)

Fig. 1.

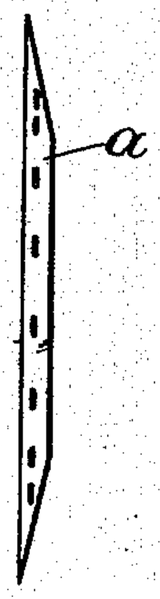



Fig. 2.

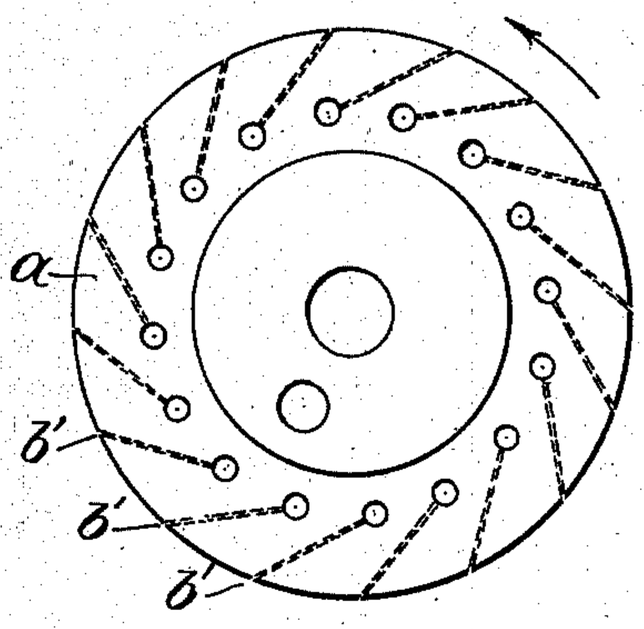



Fig. 3.

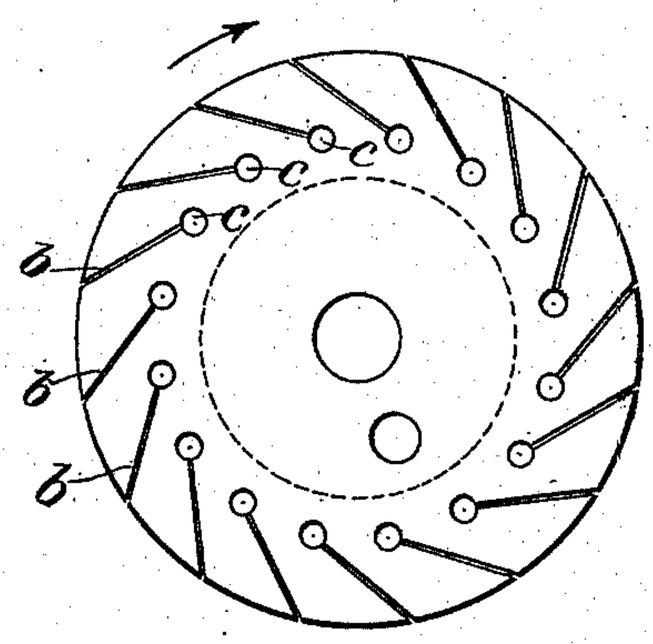



Fig. 4.

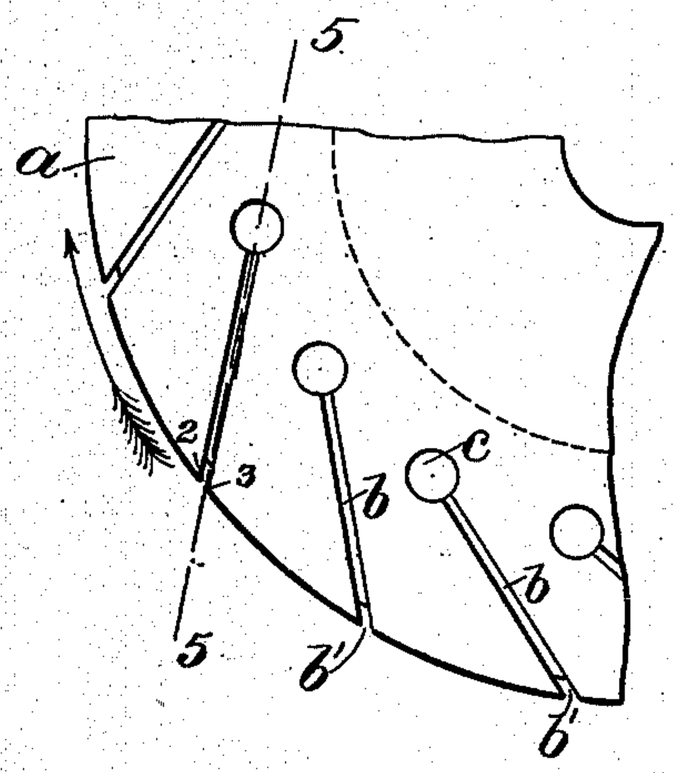
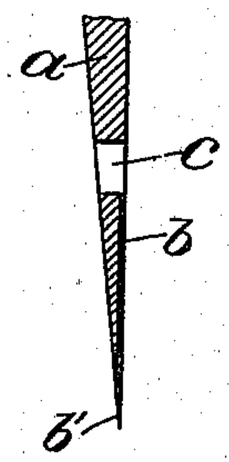



Fig. 5.

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# UNITED STATES PATENT OFFICE.

JOHN BROOKS, OF BROCKTON, MASSACHUSETTS.

## DISK CUTTER.

SPECIFICATION forming part of Letters Patent No. 714,359, dated November 25, 1902.

Application filed April 7, 1902. Serial No. 101,799. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BROOKS, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Disk Cutters, of which the following is a specification.

This invention relates to cutters such as those used in leather-skiving machines, and particularly in the so-called "Amazeen" skiver, the cutter being a disk of metal flat on one side and beveled at its marginal portion on the other, the intersection of the flat and beveled sides forming a circular cutting edge. This cutting edge has usually been continuous—that is to say, forming an uninterrupted circle around the entire periphery of the disk. It has been found that a continuous cutting edge leaves something to be desired in point of rapidity of operation, the cutting action being undesirably slow. It has been proposed to remedy this objection by forming radial grooves or corrugations in the flat side of the cutter, the corrugations extending to and through the cutting edge and interrupting its continuity, leaving said edge somewhat serrated. While this formation increases the rapidity of the cutting action, it causes a further objection—namely, creation of dust, its action being to tear or rake from the material a large number of small particles, which are scattered by the rotation of the cutter.

My invention has for its object to overcome each of the objections above referred to; and to this end it consists in a disk cutter having in its flat side a series of grooves which are tangentially arranged—that is to say, at a tangent to a circle within the periphery of the cutter—said grooves extending to and through the cutting edge and interrupting the continuity of the latter, the angle at which the outer portions of the grooves therefore constitute slots which are formed enabling the cutter to act without creating dust to any objectionable extent.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents an edge view of a cutter embodying my invention. Fig. 2 represents a side view showing the beveled side of the cutter. Fig. 3 represents a side view showing the flat side. Fig. 4 represents an enlarged side view of a portion of the cutter. Fig. 5 represents a section on line 5 5 of Fig. 4.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* represents a disk cutter, which is substantially flat on one side and is beveled at the marginal portion of its opposite side, the beveled portion intersecting the flat side and forming a circular cutting edge, this being the ordinary form of disk cutter employed in an Amazeen skiving-machine.

In carrying out my invention I form in the flat side of the cutter a series of shallow and narrow grooves *b*, which are arranged tangentially with relation to an imaginary circle within and concentric with the circular cutting edge of the cutter. These grooves extend to and through the cutting edge and are of such depth that they do not extend through the body or thicker portion of the cutter, but only through the cutting edge and the reduced portion immediately adjacent thereto, as indicated in Figs. 4 and 5. The grooves interrupt the continuity of the cutting edges sufficiently to increase the rapidity of the cutting action, their tangential arrangement enabling one side of each groove to form an acute angle 2 and the other side an obtuse angle 3 relatively to the periphery of the cutter. When the cutter is in operation, it is rotated in the direction indicated by the arrows, the direction being such that the acute angles 2 follow, while the obtuse angles 3 lead, the adjacent parts of the cutting edge. This arrangement prevents any liability of the loosening of the particles of the material being cut and the formation of dust by the action of the cutter.

I prefer to provide the cutter with circular orifices *c c* at the inner ends of the grooves *b*, said orifices extending through the body of the cutter and serving to prevent cracks which may form in the cutter extending along the grooves *b* from continuing inwardly from the said orifices. I have found that the orifices formed and arranged as shown effectually prevent the inward extension of any cracks that may develop along the grooves *b*.

In practice the side which I have hereinbefore referred to as the flat side is slightly concave, the degree of concavity being so

slight, however, that it is hardly perceptible.

I claim—

1. A disk cutter having at one side a beveled marginal portion intersecting the opposite side to form a circular cutting edge, and a series of grooves formed in the opposite side and extending to the cutting edge, the depth of the grooves being less than the thickness of the cutter, excepting at the marginal portion thereof, so that the outer portions of the grooves extend through the cutter and form slots interrupting the continuity of the cutting edge, the continuity of the beveled portion within said slots being uninterrupted.

2. A disk cutter having a beveled marginal portion on one side forming a cutting edge, and a series of tangential grooves formed in the opposite side, said grooves extending to the cutting edge and interrupting the continuity of the same, the cutter having a series of orifices communicating with the inner ends of the grooves.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOHN BROOKS.

Witnesses:
C. F. BROWN,
E. BATCHELDER.