

J. C. PALMER.
 ROTARY CUTTER.
 APPLICATION FILED NOV. 27, 1909.

966,701.

Patented Aug. 9, 1910.

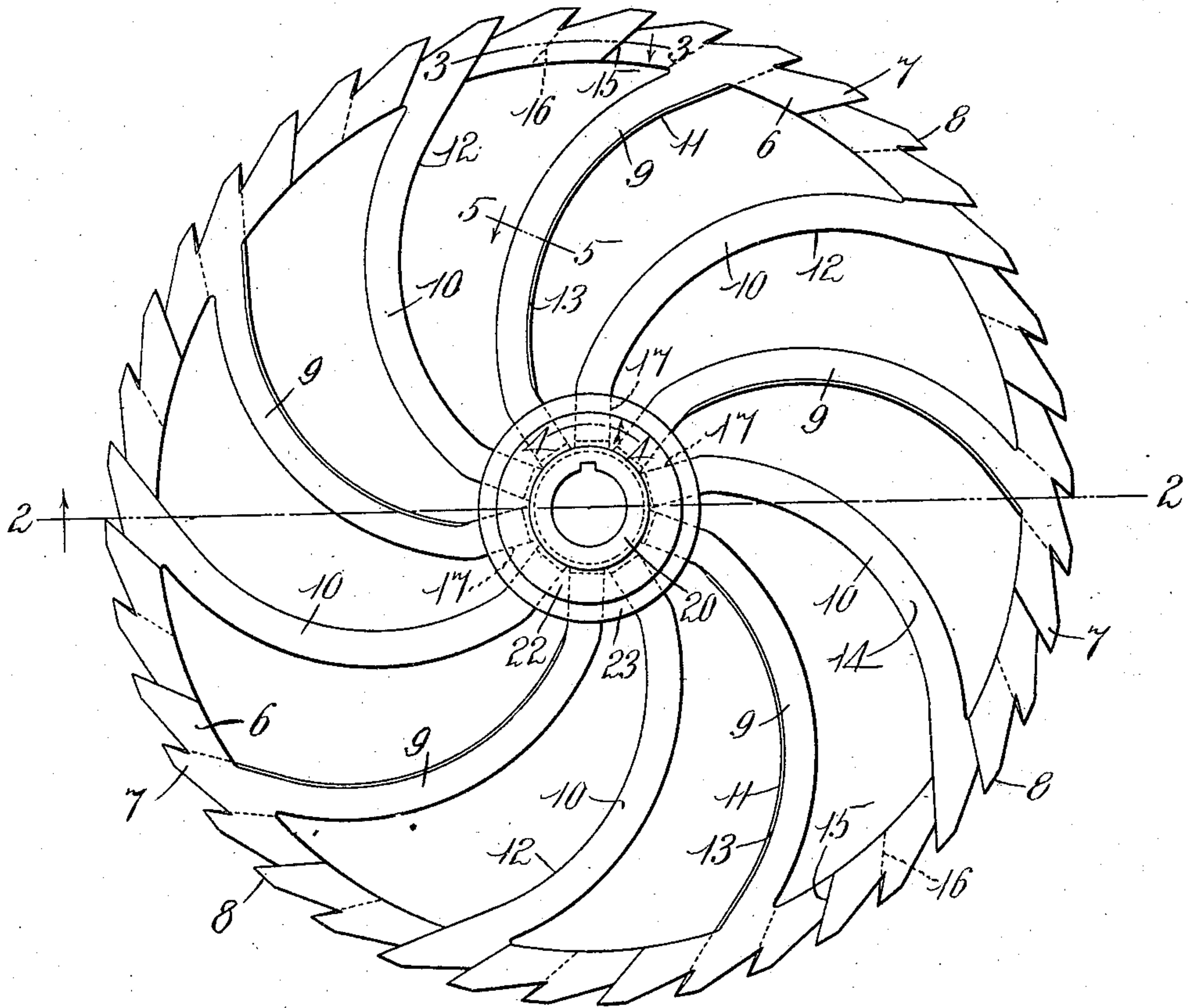


Fig. 1.

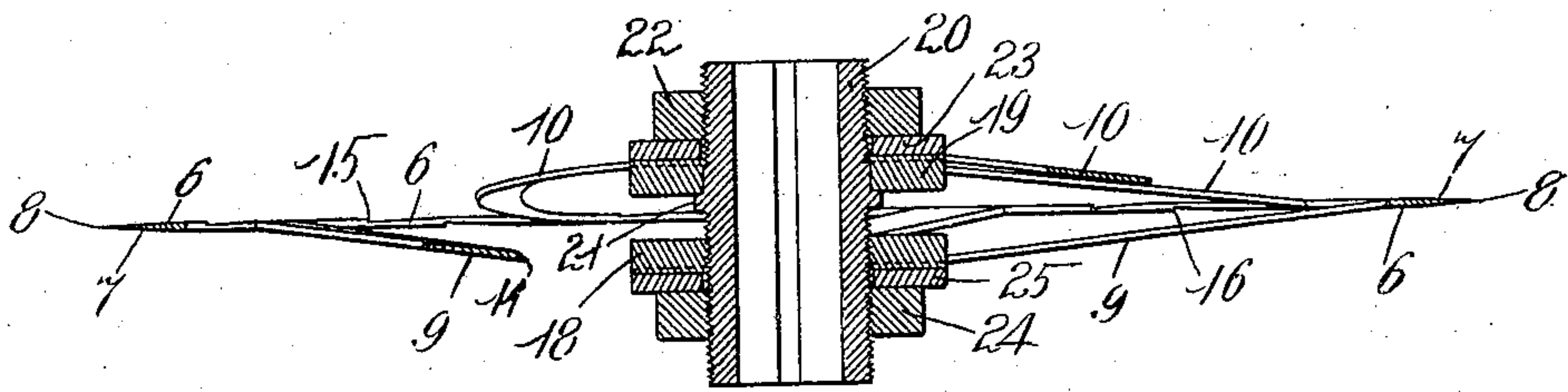


Fig. 2.

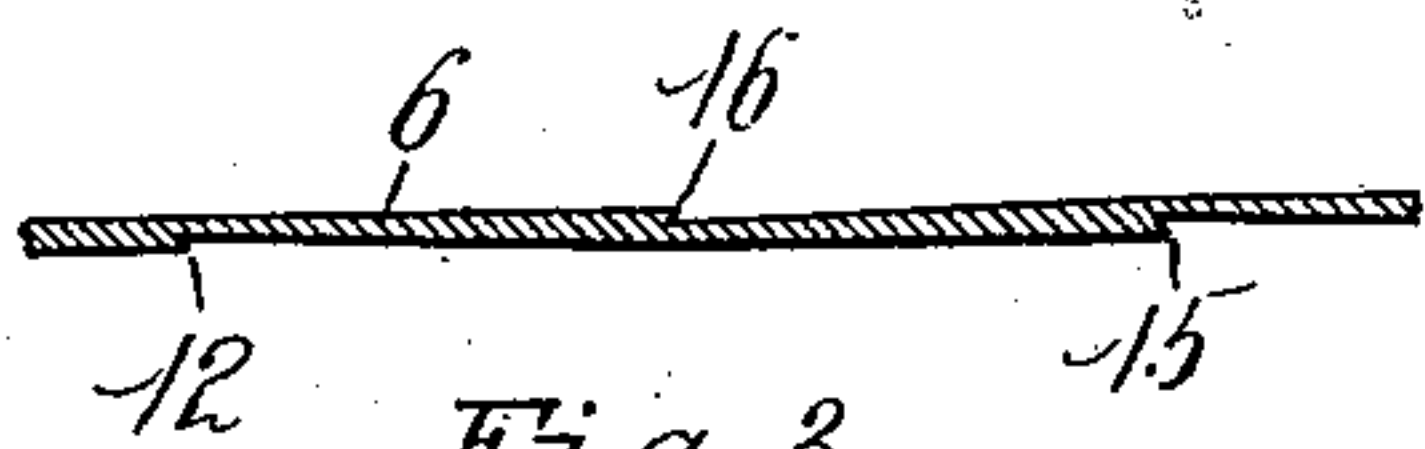


Fig. 3.

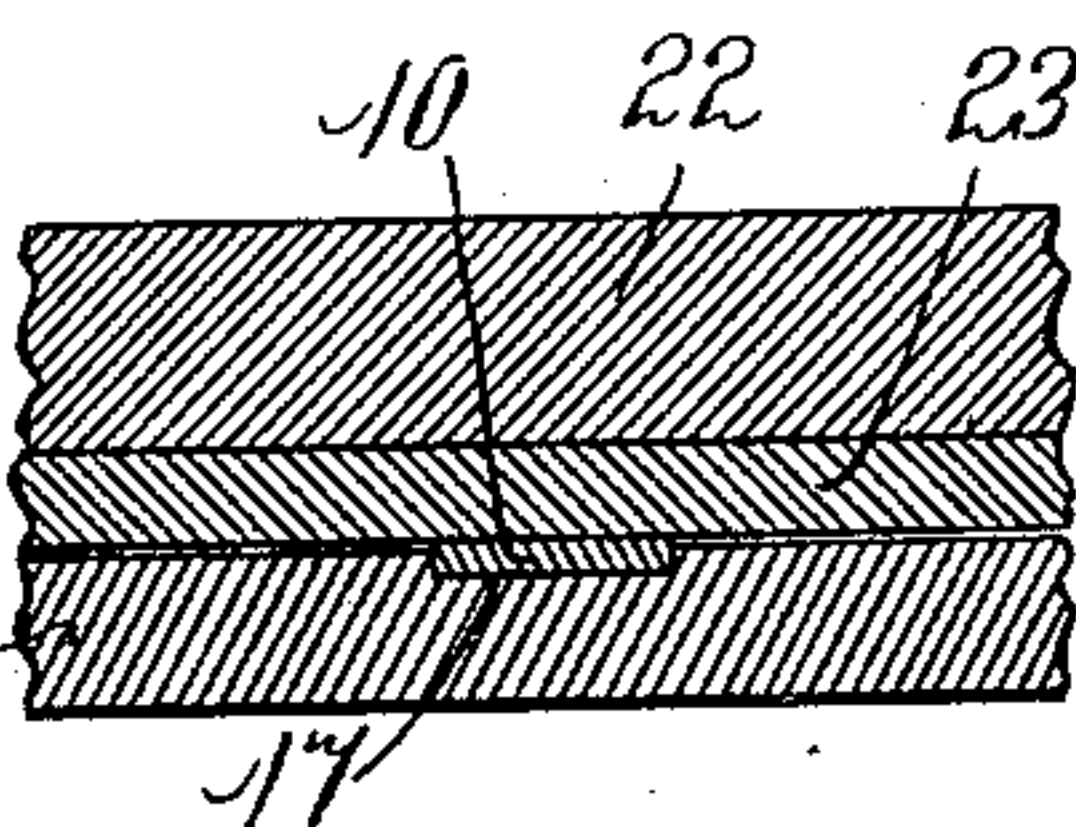


Fig. 4.

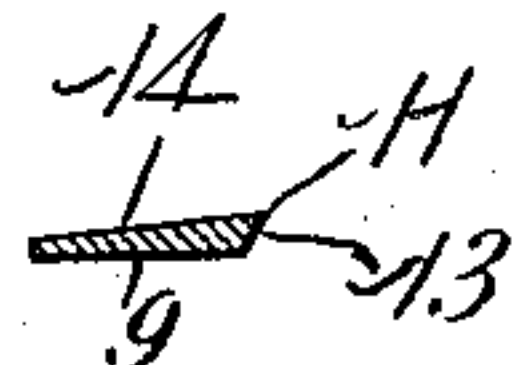


Fig. 5.

Witnesses.

Franklin E. Low.

Sydney E. Teft.

Inventor:

John C. Palmer,
 by his attorney,

Charles S. Gooding

UNITED STATES PATENT OFFICE.

JOHN C. PALMER, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO WILLIAM A. COOKE, OF BOSTON, MASSACHUSETTS.

ROTARY CUTTER.

966,701.

Specification of Letters Patent.

Patented Aug. 9, 1910.

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To all whom it may concern:

Be it known that I, JOHN C. PALMER, a citizen of the United States residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Rotary Cutters, of which the following is a specification.

This invention relates to improvements in rotary cutters and particularly to cutters for forming V-shaped slits in the ends of barrel blanks which are subsequently rolled up to form barrels.

One of the objects of this invention is to provide a cutter of this class which shall be simple and comparatively inexpensive to manufacture and which shall produce a smooth clean cut in the barrel blank and which may be readily sharpened without the use of special tools or expensive methods.

Another object is to provide a cutter of this class which by reason of its construction may be readily adjusted whereby the angle between the sides of the V-shaped slit may be varied for barrels of different sizes and shapes.

The invention consists in the novel features of construction and in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims.

Referring to the drawings: Figure 1 is an elevation of a rotary cutter embodying my invention. Fig. 2 is a plan section taken on line 2—2 of Fig. 1. Fig. 3 is an enlarged detail sectional view taken on line 3—3 of Fig. 1. Fig. 4 is an enlarged detail sectional view taken on line 4—4 of Fig. 1. Fig. 5 is an enlarged detail section view taken on line 5—5 of Fig. 1.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 6 is a rim having a toothed perimeter similar to that of a circular saw except that its teeth 7 have thin knife edges 8 at the outside diameter of the cutter. Extending inwardly from the rim 6 are two series of spokes 9 and 10 having cutting edges 11 and 12, respectively, the edge 11 being formed by the intersection of two beveled faces 13 and 14 which intersect with each other at an acute angle, as clearly shown in Fig. 5, and each of the edges 12 being correspondingly formed by the intersection of two similarly disposed

surfaces. These cutting edges are prolonged to the periphery of the cutter and thus constitute upon opposite sides of the rim 6 cutting edges which are continuations of the cutting edges of some of the teeth 8, while between the spokes 9 and 10 there are provided, upon opposite faces of the rim, cutting edges 15 and 16, respectively, forming continuations of the cutting edges of the remaining teeth of the cutter, the cutting edges alternating with each other upon opposite sides of the rim being shown in Fig. 3.

The inner ends of the spokes 9 terminate in a series of radial grooves 17 provided in a collar 18 and in like manner the spokes 10 terminate at their inner extremities in similar grooves provided in a collar 19. These two collars may be secured in any suitable manner to a central member 20 preferably tubular in form and in the present instance the collar 19 is loosely mounted on said member against a shoulder 21 and is clamped thereagainst by a nut 22 having screw-threaded engagement with the member 20 and bearing against a collar 23 loosely mounted on said member, said collar being forced against the outer faces of the spokes 10 which are greater in thickness than the depth of the grooves 17, the consequence being that the nut 22 serves not only to clamp the collar 18 against the shoulder 21, but also serves to clamp the spokes 9 in the grooves 17.

The collar 18 has screw-threaded engagement with the member 20 and is normally locked against rotation thereon by a nut 24 having screw-threaded engagement with said member and bearing against a collar 25 loosely mounted on said member, said collar bearing against the outer faces of the spokes 9 and thus serving to clamp said spokes in the grooves in which they are located in a manner similar to that in which the spokes 10 are clamped.

The inner ends of the spokes 9 and 10 may be relatively adjusted longitudinally of the axis of the member 20 within reasonable limits by loosening the nuts 22 and 24 and moving the collar 18 longitudinally of the member 20 in the desired direction by rotating the same thereon, it being understood that during this adjustment the spokes will move longitudinally of the grooves in which they are located thus preventing distortion

of the perimeter of the cutter. After the cutter has thus been adjusted, the nuts 22 and 24 are screwed up tight as before.

When in use the cutter will be rotated clockwise, as viewed in Fig. 1, and as the cutter is fed into the work in a manner similar to the use of a circular saw each cutting edge will produce a sliding or shearing cut and since there is provided ample clearance and ample space for the escape of the chips and shavings the cut produced on the work will be smooth and clean throughout.

In the use of the cutter for producing barrel blanks a series or gang of cutters will be co-axially mounted upon and secured to a shaft and properly spaced thereon for the spacing of the slits.

Having thus described my invention, what I claim and desire by Letters Patent to secure is:

1. As an article of manufacture, a rotary cutter having a toothed perimeter, and two series of spokes having cutting edges located on opposite sides of and converging toward the plane of said perimeter.

2. As an article of manufacture, a rotary cutter having a toothed perimeter, and two series of spokes having cutting edges alternating with each other on opposite sides of and converging toward the plane of said perimeter.

3. A rotary cutter having, in combination, a central member, an outer concentric rim having a toothed perimeter, two series of spokes connecting said central member to said rim and having cutting edges located on opposite sides of and converging toward the plane of said perimeter, and means to secure said spokes to said central member.

4. A rotary cutter having, in combination, a central member, an outer concentric rim having a toothed perimeter, two series of

spokes connecting said central member to said rim and having cutting edges located on opposite sides of and converging toward the plane of said perimeter, and means to adjust said two series of spokes relatively longitudinally of the axis of said central member.

5. A rotary cutter having, in combination, a central member, an outer concentric rim having a toothed perimeter, two series of spokes connecting said central member to said rim and having cutting edges located on opposite sides of and converging toward the plane of said perimeter, and two collars on said central member to which collars said spokes are secured.

6. A rotary cutter having, in combination, a central member, an outer concentric rim having a toothed perimeter, two series of spokes connecting said central member to said rim and having cutting edges located on opposite sides of and converging toward the plane of said perimeter, two collars mounted on said central member each provided with a series of radiating grooves into which said series of spokes extend, respectively, and means to clamp said spokes in said grooves.

7. As an article of manufacture, a rotary cutter having an annular portion having a toothed perimeter and provided on opposite sides, respectively, with two series of cutting edges, and two series of spokes located on opposite sides of and converging toward the plane of said perimeter.

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

JOHN C. PALMER.

Witnesses:

LOUIS A. JONES,

WILLIAM A. COOKE.