June 27, 1967 B. W. ANDRUS ETAL 3,327,746

CHIP CUTTING BLADE

Filed Jan. 12, 1965

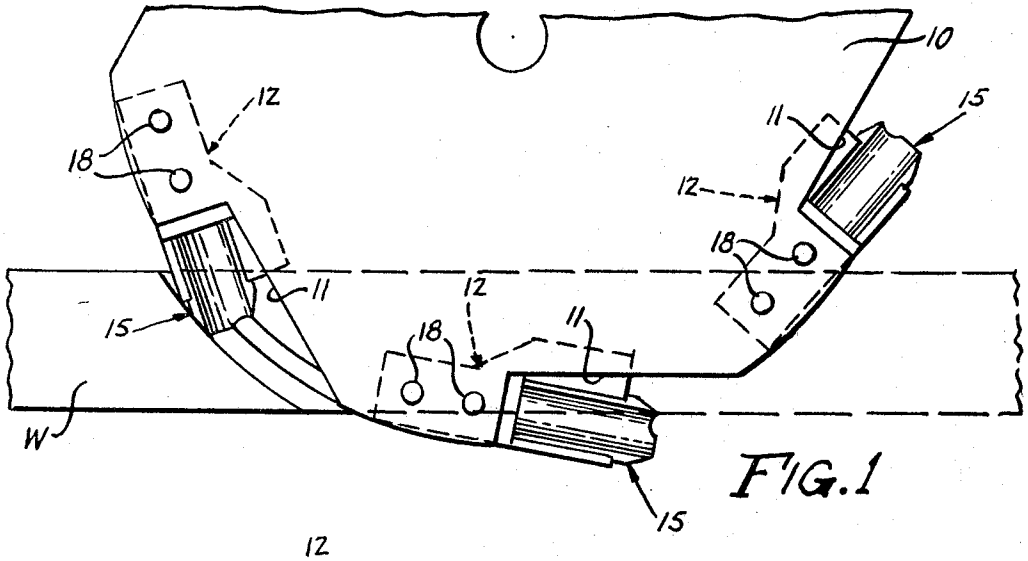


FIG. 1

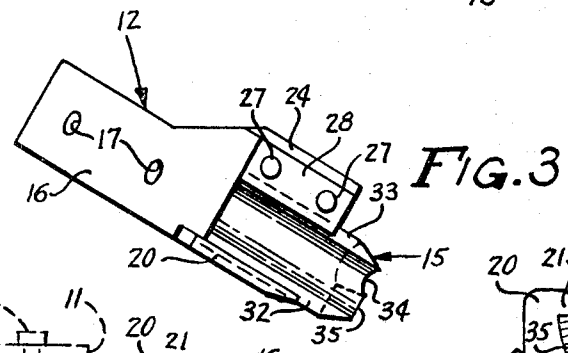


FIG. 3

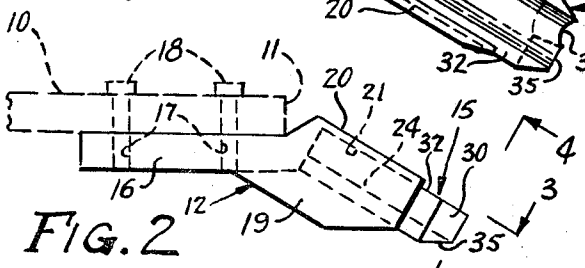


FIG. 2

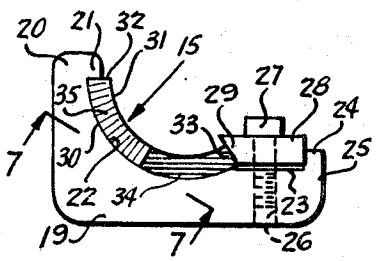


FIG. 4

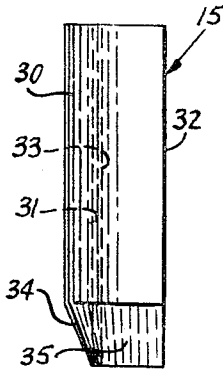


FIG. 5

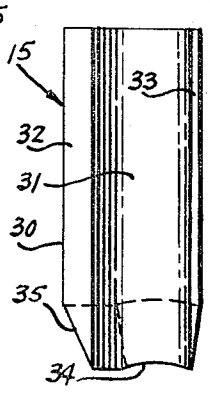


FIG. 6

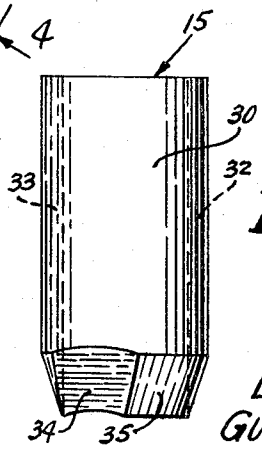


FIG. 7

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CHIP CUTTING BLADE

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ABSTRACT OF THE DISCLOSURE

A chip cutting blade comprising unitary member in the form of a sector of a hollow cylinder having a radially ground cutting edge and a flat tangentially parallel cutting edge, both edges tapering toward the end of the sector from the exterior surface to the interior surface is disclosed.

This invention relates to a chip cutting blade, and constitutes an improvement over our prior Patent 3,011,535 issued Dec. 5, 1961, and bearing the same title. A primary object of this invention is the provision of an improved chip cutting blade characterized by an arcuate cross-sectional shape particularly adapted for use in apparatus for sizing lumber by removing chips instead of shavings, so that the chips may be utilized in the making of paper pulp, thus saving valuable paper pulp material.

A further object of the invention is the provision of such a chip cutting blade which, when employed in a blanking and chipping machine will chip relatively large chips consisting of relatively long fibers, particularly desirable in the making of wood and paper pulp, from a piece of lumber to be blanked or sized.

A further and more specific object of the invention is the provision of an improved blade of arcuate cross-sectional configuration characterized by the complete absence of sharp corners at the cutting edge.

A further object of the invention is the provision of such a blade characterized by the absence of bolt holes therethrough, the blade being adapted to be secured in a holder by independent securing bolts.

A still further object of the invention is the provision of a chip cutter blade of this character which is sturdy and durable in construction, reliable and efficient in operation, and relatively inexpensive to manufacture.

Still other objects will in part be obvious and in part be pointed out as the description of the invention proceeds and shown in the accompanying drawing wherein there is disclosed a preferred embodiment of this inventive concept.

In the drawings:

FIGURE 1 is a fragmentary plan view showing a plurality of blades constructed in accordance with the instant invention mounted in the cutter disk of a lumber blanking and chipping machine;

FIGURE 2 is a side elevational view of a blade and holder constructed in accordance with the instant invention showing its attachment to the disk, the latter being indicated in dotted lines;

FIGURE 3 is a top plan view of the construction of FIGURE 2, taken substantially along the line 3—3 of FIGURE 2, the disk being omitted;

FIGURE 4 is an end elevational view of the device of FIGURES 2 and 3 taken substantially along the line 4—4 of FIGURE 2;

FIGURE 5 is a side elevational view of the blade per se;

FIGURE 6 is a top plan view of the blade; and

FIGURE 7 is a bottom plan view of the blade taken substantially along the line 7—7 of FIGURE 4.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawings in detail and more particularly to FIGURE 1 there is indicated at 10 a fragment of a chipping disk, which may comprise an element of a lumber blanking and chipping machine, of any desired type, but preferably of the type indicated in our Patent 2,966,182 issued Dec. 27, 1960. The disk is provided with a series of equidistantly spaced cutaway portions 11 about the rim thereof, each cutaway portion containing a blade holder generally indicated at 12, which receives and carries a blade, generally indicated at 15, constructed in accordance with the instant invention.

Each blade holder 12 includes a relatively flat tongue 16, having openings 17 therein, through which extend bolts 18, which also extend through aligned openings in disk 10 adjacent recesses or cutaway portions 11, for the purpose of securing the holder in position on the disk. Extending downwardly at an incline from the outer edge of each tongue or plate 16 and in the cutaway portion 11 adjacent thereto, is an angularly inclined portion 19, which has, as best shown in FIGURE 4, a relatively high outside edge 20, which terminates on its inner side in a downwardly facing shoulder 21 which is offset from a semicircular blade holding recess 22. The arcuate partially circular recess 22 terminates on its opposite side in a flat portion 23, from the outside of which extends a flange 24 at the top of a relatively low inside wall 25. Threaded bores 26 in flat portion 23 accommodate bolts 27, which secure in position a blade holding block 28, generally elongated rectangular configuration, which has a downwardly and outwardly inclined face 29 adjacent the recess 22, for the purpose of securing therein a blade 15, as will be more fully described hereinafter.

The blade of the instant invention comprises a sector of a hollow cylinder formed of an elongated concave-convex member having an outer convex side 30 and an inner concave side 31, the outer side being dimensioned to fit snugly within the recess 22. The side edges of the member are cut radially as at 32 to engage under the shoulder 21 and 33 to seat in abutting relation with the inclined face 29 and locking block 28. The forward or outer end of the member terminates in a cutting edge, the latter being formed in two portions, the lower portion seating in the bottom of recess 22 being flat ground from the convex outer side 30 toward the inner side as indicated at 34, and the adjacent portion of the cutting edge which extends up the side of recess 22 and the interior of wall 20 being radially ground, as indicated at 35. These flat and radially ground engaging surfaces provide a unique configuration of chipping edge, wherein the flat ground portion provides a concaved cutting edge, and the radially ground portion provides a relatively flat cutting edge, the arrangement thus being such as to sever and disengage relatively large, long chips from the block of wood or lumber W, such chips being particularly adapted for the previously specified purposes.

From the foregoing it will now be seen that there is herein provided an improved chipping blade and holder therefor, which accomplishes all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

We claim:

1. A chip cutting blade for chipping wood comprising:
an elongate member in substantially the shape of a sector of a hollow cylinder, having an exterior convex surface and an interior concave surface, said surfaces being bounded by side surfaces defining the edge of said sector;

a tapered portion from the convex exterior surface proximate an end of the sector to the concave interior surface at said end of the sector, said taper being radially disposed and defining a cutting edge; and

a flat portion tapering from the exterior surface to the interior surface, said flat portion being substantially parallel to a tangent to the surfaces and defining an additional cutting edge along the interior surface.

2. The structure of claim 1 wherein the flat ground portion and the radially ground portion are approximately equidistant in extent.

3. The structure of claim 2 wherein said blade is removably mounted in a holder, and so positioned that the flat ground edge initially impacts the wood to be chipped.

References Cited

UNITED STATES PATENTS

2,922,448	1/1960	Standal	144—219
3,040,789	6/1962	Mall et al.	143—135

DONALD R. SCHRAN, *Primary Examiner.*