J. KARMANN, Jr.

BAND CUTTER.

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970,624. Patented Sept. 20, 1910.

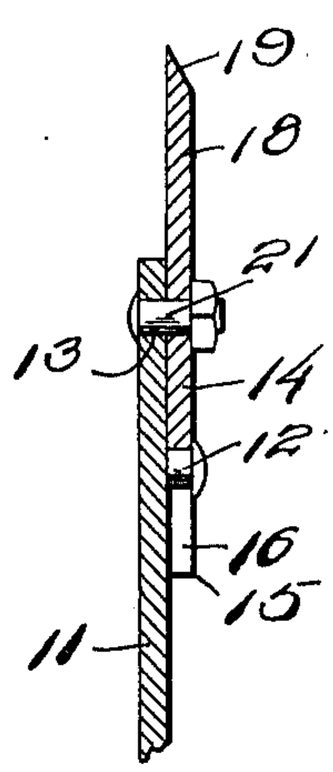

Fig. 1.

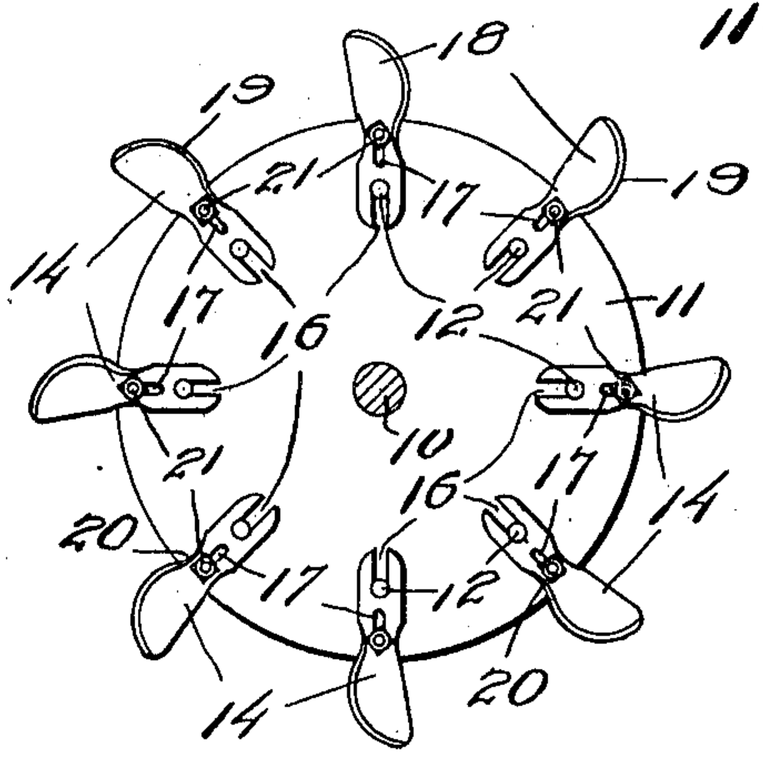

Fig. 2.

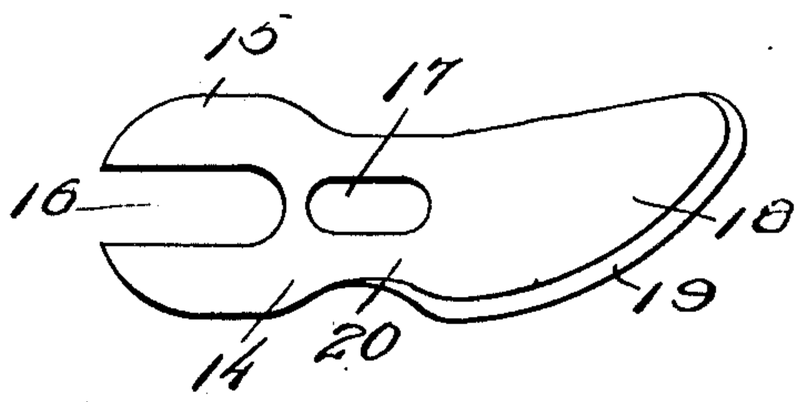

Fig. 3.

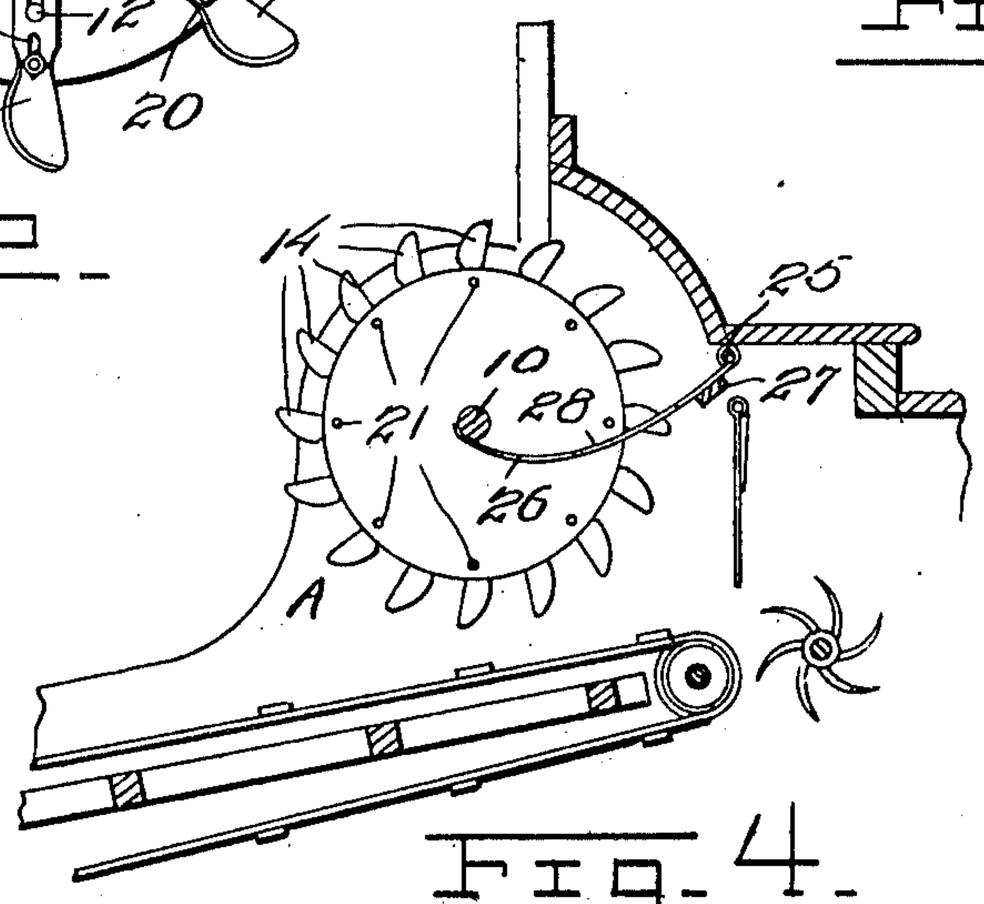

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH KARMANN, JR., OF STANTON, NEBRASKA.

BAND-CUTTER.

970,624. Specification of Letters Patent. Patented Sept. 20, 1910.

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To all whom it may concern:

Be it known that I, JOSEPH KARMANN, JR., a citizen of the United States, residing at Stanton, in the county of Stanton and State of Nebraska, have invented certain new and useful Improvements in Band-Cutters, of which the following is a specification.

This invention relates to improvemen's in band cutters, and has for its object to provide a novel form of knife which will be adapted for quick detachment and replacement, and which will be readily manipulable for sharpening or other treatment.

Another object is to provide such a device which may be manufactured at a low cost from stock material.

Another important object is to provide a form of blade tending to insure efficient cutting of bands.

Other objects and advantages will be apparent from the following description, and it will be understood that changes in the specific structure shown and described may be made within the scope of the claim, and that any suitable materials may be used without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a cross sectional view of the cutter, Fig. 2 is a side view thereof, Fig. 3 is a detailed view of one of the blades, Fig. 4 is a detailed sectional view of a portion of a thresher equipped with the present invention.

Referring to the drawings, there is shown a self feeding threshing machine including an endless carrier adapted to feed material to the thresher adjacent the inner end of which there is mounted the present invention. The cutter comprises a shaft 10 mounted transversely of the thresher, and carries a plurality of disks 11 provided with a plurality of lateral concentrically arranged headed pins 12 extending from their opposite faces and spaced from the peripheries of the disks, outwardly of which pins there are openings 13 each spaced on a line radially of respective pins. Carried by the disks 11 there are knives 14 comprising a base portion 15 having a longitudinally extending slot 16 opening on their inner ends and having an oblong opening 17 inwardly of the slot. A blade 18 is formed oppositely of the base 15, being enlarged on one side at its middle portion and provided with a curvate edge 19. The edge portion of the blade at its inner end extends inwardly as shown at 20 forming a restricted portion 14 in the knife.

The knives 14 are secured to the disks 11 by having their slots 16 presented slidably around the pins 12, a suitable bolt 21 is engaged through the opening 17 of each blade and the proximal opening 13 of the disk, and a nut engaged with the bolt to clamp the blade securely to the disk. It will be noted that when attached, the portion 20 of the blade is disposed outwardly of the disk, projecting from its periphery in the direction of its rotation at an angle greater than forty-five degrees, while the outer portion of the edge 19 is recurved and extends eccentrically opposite the direction of movement, the outer curved edge portion being of increasing distance from the periphery of the disk.

When the cutter is in use, the curved formation of the blade will cause an effective cutting of the band the edges 19 of the blades being drawn across the band throughout their length. It will be noted that the inwardly directed portion 20 of the blade will tend to engage the band more forcibly than the outer portion, after which the band may, if not cut immediately, slide along the outer portion of the edge 19 insuring its thorough severance. The engagement with the portion 20 insures the bands being. brought into sufficient pressure against the knife edge to make the cutting action of the blades thorough. Under the rapid rotation of the disk when the machine is operated, the band of a bundle fed into the thresher will be engaged by the outer eccentric portions of the blades, and if these were constructed as is ordinarily done—that is, with a curved edge of approximately continuous eccentricity, radii of the shaft intersecting it throughout its length at a common angle,—if the blades should become slightly dulled, the band might be depressed without being cut. With the present form of blade, however, after the initial engagement of the eccentric portions of the blades with the band, if the blades are not sufficiently sharp to have severed the band the change of the angle of the edge 20 with respect to their direction of movement will exert such force upon the band as to break it at the point where it

was initially engaged and consequently weakened. It will be seen that if straw, bands or other material tend to become wound around the shaft 10, the guards 26 will engage therebeneath and guide it outwardly from the disk and blade.

What is claimed is:

In a band cutter, the combination with a revoluble shaft, of a radial disk secured thereto, laterally projecting headed pins carried by the disk spaced from its periphery, and blade members carried by the disk, said blade members each comprising a body portion having a longitudinally extending slot opening on its inner end, and an oblong opening inwardly of said slot, the slotted portion being engaged slidably around the pins beneath the heads thereof, and clamping means for securing the blades upon the disk, each blade being enlarged at its outer end upon one side and having a curved cutting edge, the inner portion of which is inclined in the direction of rotation of the cutter and being recurved oppositely thereto, said outer curve being of gradually increasing distance from the periphery of the said disk, said cutting edge presenting portions adapted to effect a draw cut and other portions adapted for abrupt and more forcible engagement with a band.

In testimony whereof I affix my signature, in presence of two witnesses.

JOSEPH KARMANN, Jr.

Witnesses:

George Karman,

Herman Herschlag.