J. A. RANKIN.

FEED CUTTING MACHINE.

APPLICATION FILED OCT. 30, 1916.

1,306,500. Patented June 10, 1919.

Fig. I.

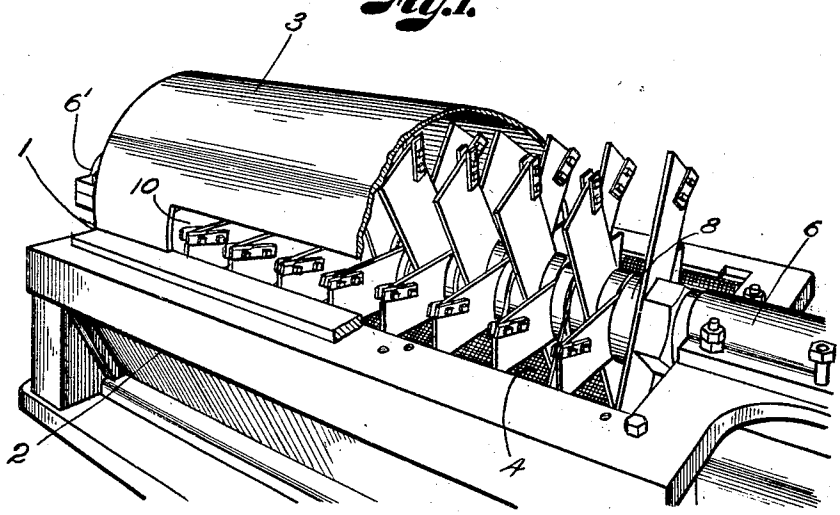


Fig. II.

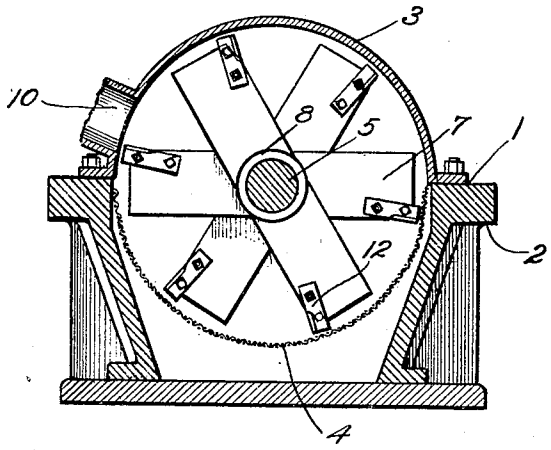
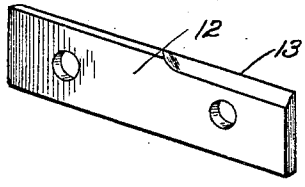


Fig. III.



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FEED-CUTTING MACHINE.

1,306,500. Specification of Letters Patent. Patented June 10, 1919.

Application filed October 30, 1916. Serial No. 128,412.

To all whom it may concern:

Be it known that I, JOHN A. RANKIN, a citizen of the United States, residing at Emporia, in the county of Lyon and State of Kansas, have invented certain new and useful Improvements in Feed-Cutting Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in feed chopping or cutting machines, and more particularly to the cutting blades; the principal object of the invention being to provide and so mount the feed cutting blades that they may be readily and individually removed for sharpening purposes and may be replaced by similar blades while the sharpening is being done.

In accomplishing these objects I have provided improved details of structure the preferred forms of which are illustrated in the accompanying drawings, wherein:—

Figure I is a perspective view of a feed cutting machine embodying the present invention.

Fig. II is a transverse vertical section of the same.

Fig. III is a detail view of one of the removable blades.

Referring more in detail to the drawings:—

1 designates a machine such as is ordinarily used for chopping or cutting alfalfa, or the like wherein my improvement is embodied, and which comprises a base portion 2 having a semi-cylindrical cover 3 attached thereto, which together with a coöperating semi-cylindrical screen wall 4 contained within the base 2 forms a housing for the cutting members.

The cutting or chopping member comprises a shaft 5 which extends longitudinally through the housing and is revolubly mounted at its ends in bearings 6—6′ and may be revolved therein by any suitable driving mechanism (not shown).

Mounted on the shaft 5 throughout its length, extending radially therefrom and terminating adjacent the wall of the housing are vanes 7 which are spaced along the shaft by intermediate collars 8 and keyed in any suitable manner to the shaft to retain their relative radial position.

Each of the vanes 7 is preferably rectangular and of substantially heavy metal in order to give it weight and balance on the order of a fly wheel and the blades 12 are set at an outward and forward angle relative to the longitudinal lines of the vanes to extend radially relative to the axis of the shaft 5; the blades projecting beyond the ends of the vanes so that there is a space between the ends of the vanes and the inner walls of the cylinder members within which the material may be located after the blades have passed through it.

As machines of this character are ordinarily constructed, the vanes 7 are sharpened at their forward corners, so that as the shaft revolves the vanes, the straw or feed admitted into the cylinder through the side delivery opening 10 is broken up and cut as it passes between the wall of the cylinder and ends of the vanes and the fine particles are drawn from the housing through the screen 4 by suction, or by a blower (not shown).

It is apparent that when the machine is used continuously the cutting edges frequently require sharpening, and in order to properly sharpen the vanes it is necessary that the latter be removed from the drive shaft 5, which in turn necessitates first the removal of said shaft from the boxings 6—6′.

In order to avoid this difficulty in removing the blades for sharpening and at the same time to provide means for producing a more even and finer cut product, I provide removable cutting blades 12, each of which comprises a short length of substantially hard metal, ground or hammered along part of its length to form a cutting edge 13, and which are bolted, preferably one on each of the vanes, adjacent the forward corners at each end of the vanes in a forwardly inclined position and terminating beyond the ends of the vanes closely adjacent the housing wall.

It will be seen that by providing removable blades of this character, when the latter become dulled they may be removed quickly and easily from the vanes and

sharpened without necessitating the removal of the vanes from the shaft or the shaft from the bearings.

It is also apparent that such blades are inexpensive and may be replaced more readily and at a lesser expense than would be possible to provide entirely new vanes.

It is also apparent that such blades may be kept in sharpened condition more easily than is possible where the ordinary blade is used and will produce a finer and more evenly cut product than is ordinarily possible.

Having thus described my invention what I claim as new therein and desire to secure by Letters-Patent, is:—

In a feed cutting machine the combination of a casing with a rotatable shaft therein, vanes mounted on said shaft and rotating therewith, blades detachably secured to the opposite diagonal corners of said vanes on one side thereof, and having cutting edges extending beyond and in front of the ends of said vanes and at an angle thereto.

In testimony whereof I affix my signature.

JOHN A. RANKIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."