J. H. JENSEN.

KNIFE FOR BAND CUTTERS.

APPLICATION FILED MAY 6, 1914.

1,120,721. Patented Dec. 15, 1914.

Fig. 1.

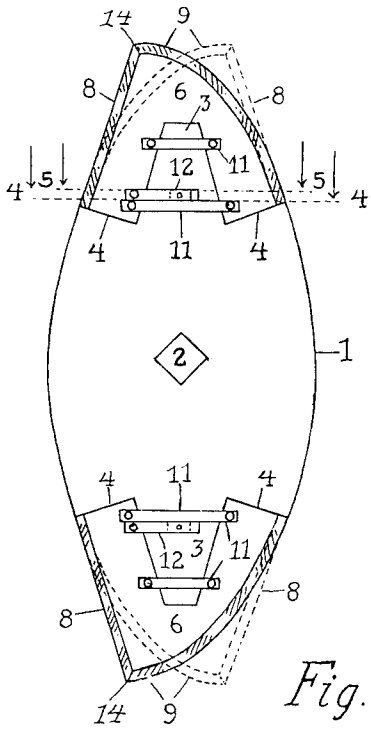


Fig. 2.

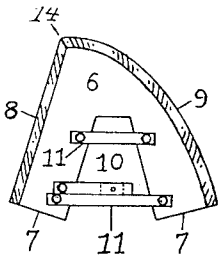


Fig. 3.

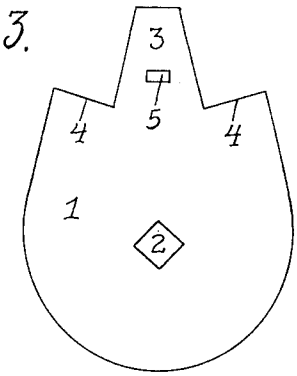


Fig. 4.

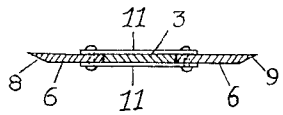
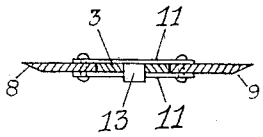


Fig. 5.



WITNESSES:

Marion McCaffrey

Frank C. Ward

INVENTOR

John H. Jensen

BY

Willard Eddy ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JENS H. JENSEN, OF MINDEN, NEBRASKA.

KNIFE FOR BAND-CUTTERS.

1,120,721. Specification of Letters Patent. Patented Dec. 15, 1914.

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To all whom it may concern:

Be it known that I, JENS H. JENSEN, a citizen of the United States, residing in Minden, in Kearney county, in the State of Nebraska, have invented certain new and useful Improvements in Knives for Band-Cutters, and have described the same in the following specification, illustrated by the accompanying drawings.

My invention relates to that class of rotary knives which are commonly used, in connection with self-feeding threshers, for the purpose of cutting the bands of the individual bundles of grain which are supplied to be threshed, and for this purpose are ordinarily grouped and spaced from each other in parallelism on a shaft normal thereto. Typical knives of this class are shown in Letters Patent of the United States No. 1,033,901, which were issued to me July 30, 1912, for band-cutter and feeder.

It is the object of the present invention to increase the adaptability of knives of this class to varying conditions of the grain bundles under treatment; to render the blade of such a knife firmly securable to the body of the same by hand, and easily detachable therefrom without the aid of tools, or other separable appliances; to increase, when necessary, the efficiency of the knife as a means for propelling the loose grain through the feeder; to increase the durability of such knives, and diminish the necessary frequency of sharpening the blades; and in general to increase the efficiency of knives of the specified class. To accomplish these objects I incorporate in my improved knives, as parts thereof, a flat knife body, or plate, which is rigidly secured to the rotary shaft, and a reversible two-edged flat blade which is detachably mounted upon the knife body in a special manner.

In the accompanying drawings, illustrating the best manner in which I have contemplated applying the principles of the invention, Figure 1 is a side elevation of a knife which is constructed in accordance with these principles. Fig. 2 is a side elevation of one of the blades of the same knife, together with the attachments of the blade, all shown removed from the knife body. Fig. 3 is a side elevation of the knife body in a modified form. Fig. 4 is a cross section on the line 4—4 of Fig. 1. Fig. 5 is a cross section on the line 5—5 of Fig. 1.

The knife body 1, shown in Fig. 1, is a metallic plate having a central angular perforation 2, through which is inserted the rotary shaft, not shown, on which the knife is mounted rigidly in the usual manner of knives of this class. This plate comprises the two radially directed tapering tongues 3, duplicates of each other, which constitute its diametrically opposite ends. Each of these tongues is narrower that the rest of the knife body, forms equal angles with the two adjacent marginal shoulders 4 of that plate at points equidistant from the shaft, and is perforated by a central slot 5 for the accommodation of the lock bolt which is hereinafter described.

In the modified form shown in Fig. 3, the knife body 1 is provided with only one of the described tongues 3, but in other particulars is of the description already given.

The knife blade 6 is a V-shaped metallic plate of the same thickness as the knife body 1. Its base 7, being precisely as wide as the abutting end of the plate 1, and conforming to the outline thereof, comprises a central reëntrant angular recess 10, which is fitted exactly to the periphery of the tongue 3. Its exposed edges 8 and 9, the former being preferably straight and the latter curved, as shown, converge from the ends of this base line to the knife point 14, and are sharpened as shown, or both sharpened and serrated, as may be preferred, for cutting. The edge 8 is considerably shorter than the edge 9; and consequently their common point 14 is unequally distant from the shoulders 4, when the knife is assembled. To the opposite sides of each blade 6 are bolted a plurality of transverse strips, the metallic cleats 11, subtending the recess 10, as guides and keepers for the tongue 3, when the latter is inserted in that pocket. A spring lock for fastening the blade and the knife body together when assembled, comprises the flat spring 12, which is bolted to the blade 11, and the lock bolt 13, which is carried by this spring and normally occupies the slot 5, but is readily pushed out of that slot by hand, whenever the blade is to be removed or reversed. Operatively it contacts laterally at each end with the outer edge of one of the cross bars 11.

My improved band-cutter knife presents a number of special advantages. Having two cutting edges, usable alternatively, it requires to be sharpened less frequently than does a knife having but a single edge work-

ing under the same conditions. Having cutting edges of different shapes and of different inclinations, reversible as shown by broken lines in Fig. 1, it is adapted to work with either of those edges as may be desired; thus the curved edge may be used with wet and soft grain to prevent the straw from wrapping around the cutter shaft; while with headed or loose grain the straight edge is more efficient, not only for cutting the bands but also for aiding the propulsion of the straw in the self-feeder. Furthermore this knife, having its blades revolving in the same plane with the knife body, works without undue lateral stress, and strikes the individual or successive bands continually in that single plane.

I claim as my invention—

1. A knife of the specified class, comprising a plate mounted on a rotary shaft which is normal thereto, a tapering radially direct-terminal flat tongue which is part of the plate and is narrower than the adjacent portion thereof, a flat blade, terminally abutting on the end of the plate, and having a central notch fitting the tongue edge to edge, crossbars secured to the opposite sides of the blade, and a spring lock, normally holding the tongue in position in the notch and between the crossbars.

2. A knife of the specified class, comprising a rotary plate having a flat radially extending terminal tongue narrower than the adjacent portion of the plate, a flat blade having a central notch fitting the edges of the tongue and two sharpened edges of unequal length converging to a common point, crossbars secured to the opposite sides of the blade and spanning the notch, and a lock for retaining the tongue in the notch and between the crossbars.

3. A knife of the specified class, comprising a rotary plate having a radially directed terminal tongue, narrower than the adjacent portion of the plate, and of uniform thickness therewith, a reversible flat blade of the same thickness, having a central notch to contain the tongue and two converging cutting edges of different pattern, crossbars fastened to the sides of the blade and across the notch, and a spring-seated lock bolt working in a slot in the tongue.

4. A knife of the specified class, comprising a rotary plate having two radially directed tapering tongues forming respectively the opposite ends of the plate, two reversible and interchangeable flat blades having central notches adapted to contain the tongues respectively and alternatively, crossbars fastend across the notches to the sides of the blades respectively, and two locks for holding the tongues in position between the crossbars and in the notches respectively.

5. A knife of the specified class, comprising a rotary flat blade having a terminal flat tapering tongue, a reversible flat blade sharpened at two edges and having a central notch fitting the tongue edge to edge, crossbars secured to the opposite sides of the blade respectively and spanning the notch, and means for locking the tongue into the pocket which is formed by and between the notch and the crossbars.

In testimony whereof I subscribe my name hereto in the presence of two witnesses.

JENS H. JENSEN.

Witnesses:
GOLDA JENSEN,
THAD ROBISON.

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