No. 754,008. PATENTED MAR. 8, 1904.

G. W. PARSONS.

KNIFE FOR BAND CUTTERS AND FEEDERS.

APPLICATION FILED JAN. 13, 1903.

NO MODEL.

Fig. 1.

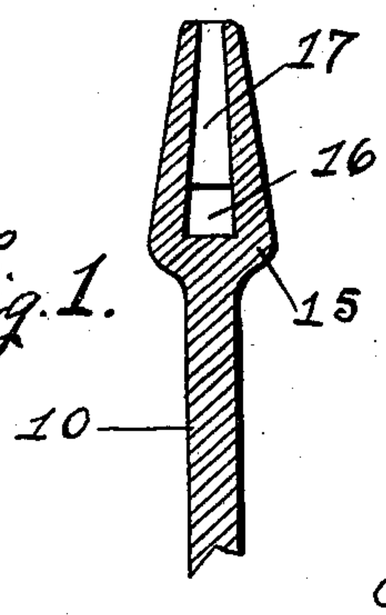


Fig. 2.

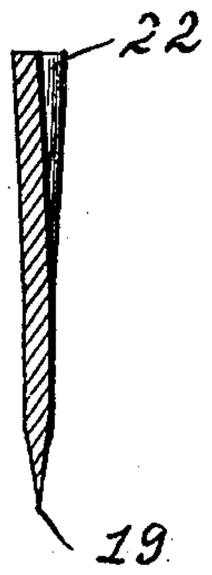


Fig. 3.

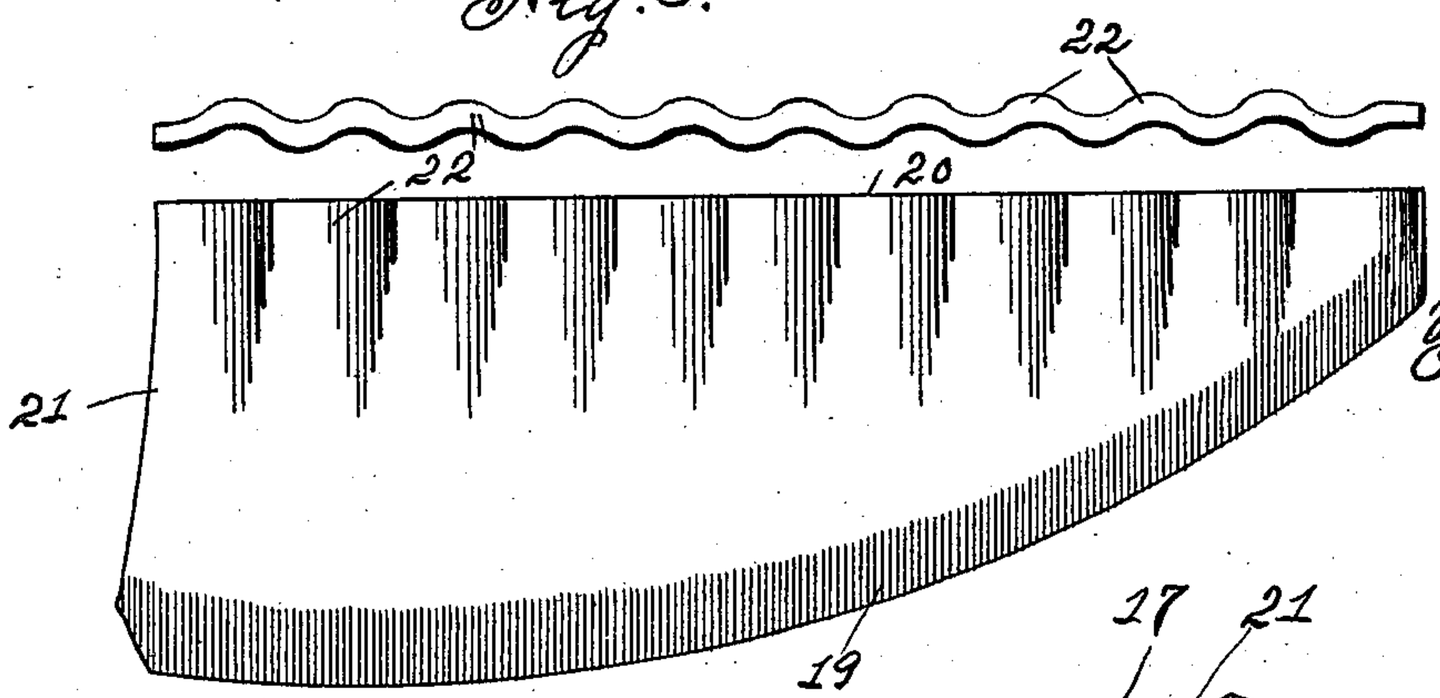


Fig. 4.

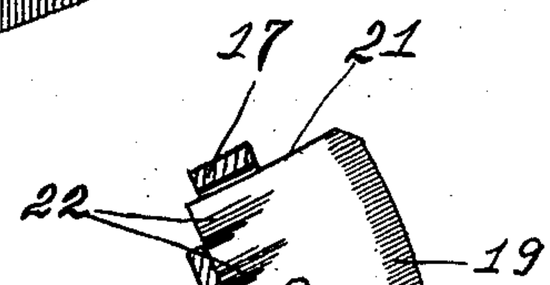
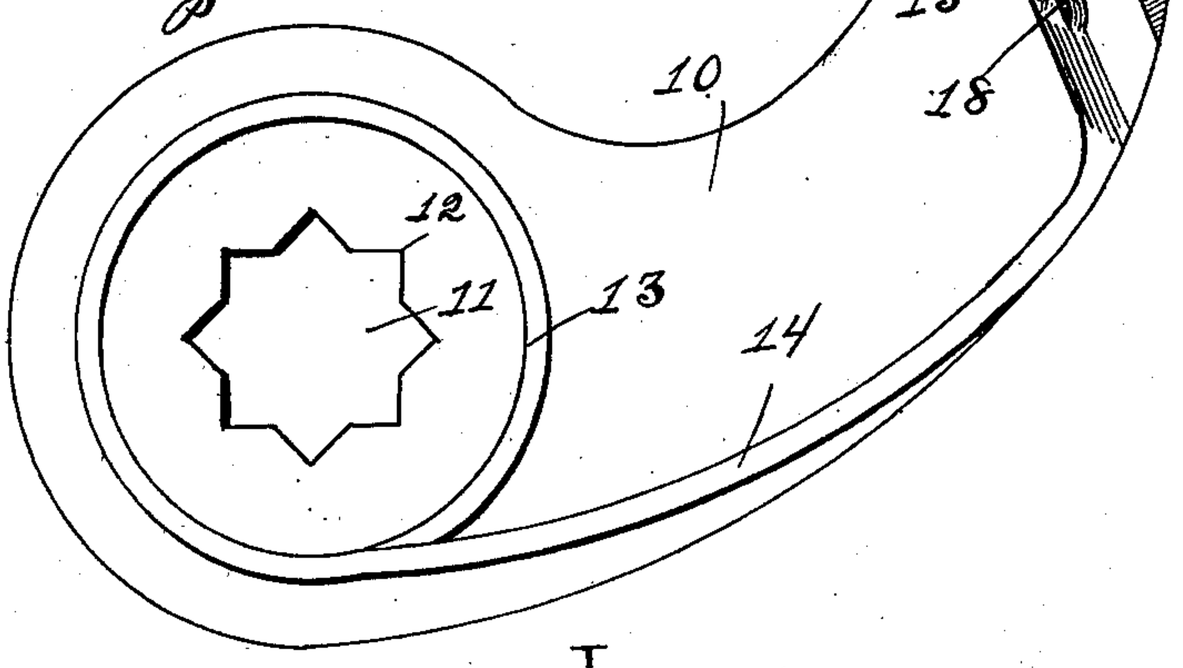


Fig. 5.



Witnesses:
L. H. Orwig.
S. F. Christy.

Inventor George W. Parsons.
by Orwig & Lane Attys.

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

No. 754,008. Patented March 8, 1904.

UNITED STATES PATENT OFFICE.

GEORGE W. PARSONS, OF NEWTON, IOWA, ASSIGNOR TO PARSONS-HAWKEYE MANUFACTURING CO., OF NEWTON, IOWA.

KNIFE FOR BAND-CUTTERS AND FEEDERS.

SPECIFICATION forming part of Letters Patent No. 754,008, dated March 8, 1904.

Application filed January 13, 1903. Serial No. 138,945. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. PARSONS, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented certain new and useful Improvements in Knives for Band-Cutters and Feeders, of which the following is a specification.

My invention relates to that class of band-cutting knives in which a number of blades are detachably secured to a rotatable shaft to sever the bands on bundles of grain which are passed beneath the shaft on a conveyer.

My object is to provide a band-cutting knife in which the body portions of the knives are made of cast metal without any machine-work and having a dovetailed groove in their outer ends parallel with said ends, and the cutting-blades are made of spring-steel and detachably connected with the cast-metal body portions without the use of rivets or bolts by being sprung into said grooves, so that very small steel blades may be used, and these blades may be quickly and easily, whereby a simple, strong, and durable cutting-knife is provided at a minimum of expense.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows an enlarged sectional view through the rear end portion of the cast-metal body, taken on a radial line from the point at which the knife is attached to the shaft. Fig. 2 shows an enlarged detail sectional view of the detachable blade. Fig. 3 shows an edge view of the detachable blade. Fig. 4 shows a side view of the detachable blade, and Fig. 5 shows a side view of the complete knife with a part of the rear end of the body portion broken away.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the body portion, which may be cast complete in one piece. At the inner end portion of the body 10 is an opening 11, having eight corners, (indicated by the numeral 12,) whereby the body portion may be placed on a square shaft in different positions relative to the shaft and be held against rotation on the shaft in any position. Surrounding the opening 11 is a rib 13, and a rib 14 extends from the rib 13 near the front edge of the body portion to the outer end of the body portion. The outer end of the body portion is enlarged at 15, and in this enlarged portion is a dovetailed groove 16, open at its front end and having an integral cross-piece 17 at its rear end. Small openings 18 are formed in the sides of the part 15. These openings are formed by means of the devices used for supporting the core which forms the groove 16 when the body portion is being cast.

The parts just described constitute the body portion of the band-cutting knife, and obviously this body portion may be cast complete in one piece, and no machine-work is required. Hence the body portions may be produced at very small cost.

The cutting-blade proper is made of a single piece of steel and is provided with a curved cutting edge 19 and a straight inner edge 20 and is of such shape that when its straight edge is placed in the dovetailed groove 16 its curved outer edge will form a continuation of the curve at the front edge of the body portion, as shown in Fig. 5, and the rear end of the blade 21 will rest against the cross-piece 17. For holding the blade securely in position, and yet permitting its ready removal, I have provided a series of corrugations 22 on the straight edge 20. These corrugations are widest laterally at the edge 20, and they taper gradually toward the curved cutting edge 19, as clearly illustrated in Fig. 2, thus forming a cutting-blade, which, taken as a whole, including the corrugations, is broader transversely at its straight edge 20 than at its cutting edge.

In practical use I first place the cast-metal body portions upon the shaft and firmly secure them thereto in the ordinary way. Then I place the blades in the open end of the dovetailed slot, with the straight edge 20 at the bottom of the slot, and I introduce the end 21 first. The corrugations 22 are of such width

transversely of the blade as to firmly engage the sides of the dovetailed groove, and in order to force the knife to position in the dovetailed groove it is necessary to drive it in, and as the blade is being driven in position obviously the resiliency of the steel of which the blade is formed will permit the corrugations to yield sufficiently to admit the knife into the groove, and on account of the resiliency of the blade it will be firmly held in the dovetailed groove without the use of any other fastening devices. The cross-piece 17 limits the rearward movement of the blade in the dovetailed groove, and in use all of the impact upon the blade caused by the blade striking the bundles of grain will tend to force the blades rearwardly against the cross-piece 17. Obviously in order to detach the blade it is only necessary to drive it out of the dovetailed groove by striking upon the edge 21 thereof, and after the blades have been used until they are dull I simply drive the blades from the grooves and substitute new ones. This may be done very quickly and easily, and the necessity of detaching the entire band-cutting knife from its shaft is avoided.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

1. An improved band-cutting knife, comprising a body portion provided with a dovetailed groove at its outer portion, said groove extending in the same direction in which the body portion runs, and a detachable blade having yielding sides inserted in said dovetailed groove and retained therein by the resiliency of the yielding sides.

2. An improved band-cutting knife, comprising in combination, a body portion having a dovetailed groove, and a detachable blade, having one edge corrugated, the corrugations being tapered from a maximum at the edge to a minimum toward the longitudinal center of the body of the blade, whereby the blade is held in the dovetailed groove by the resiliency of the metal at the point where the corrugations are made.

3. An improved band-cutting knife, comprising in combination a body portion susceptible of being cast complete in one piece having in its inner end portion an angular opening to receive an angular shaft, and having at its outer end a dovetailed groove open at one end and closed at its other end, and a blade having one edge corrugated, the corrugations tapering from a maximum thickness nearest the edge to a minimum near the longitudinal center of the blade and having its other edge curved and sharpened, for the purposes stated.

GEORGE W. PARSONS.

Witnesses:
J. RALPH ORWIG,
SAML. H. ORWIG.