G. A. HEGE.

BAND CUTTER KNIFE.

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950,448.

Patented Feb. 22, 1910.

Fig. 1

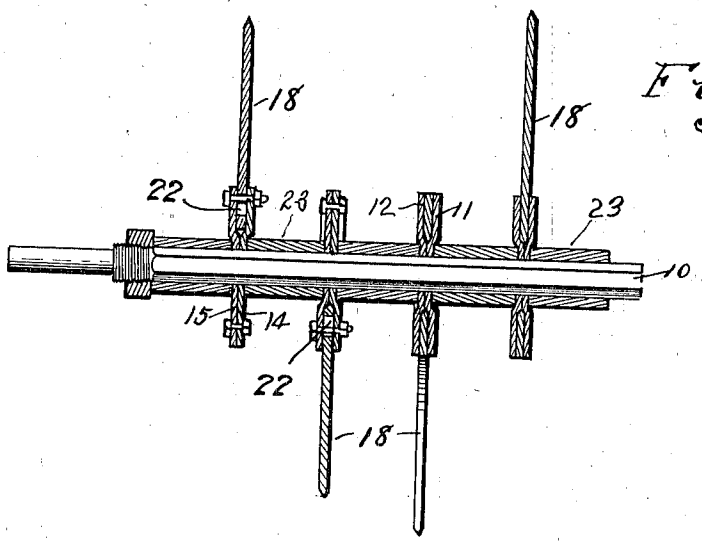


Fig. 2.

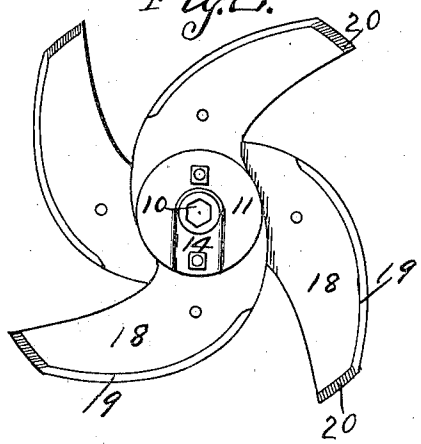


Fig. 3.

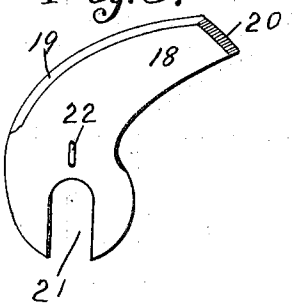


Fig. 4.

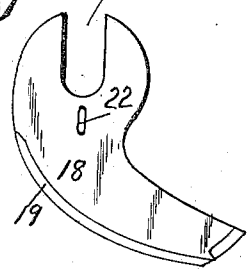
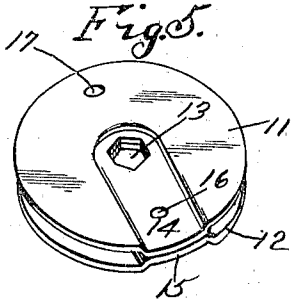


Fig. 5.



Witnesses

A. G. Hague

K. T. Keffer.

Inventor:

Gustavus A. Hege.

by Orwig & Lane attys

UNITED STATES PATENT OFFICE.

GUSTAVUS A. HEGE, OF HALSTEAD, KANSAS, ASSIGNOR TO PARSONS BAND CUTTER AND SELF FEEDER COMPANY, OF NEWTON, IOWA.

BAND-CUTTER KNIFE.

950,448. Specification of Letters Patent. Patented Feb. 22, 1910.

Application filed September 4, 1906. Serial No. 333,140.

To all whom it may concern:

Be it known that I, GUSTAVUS A. HEGE, a citizen of the United States, residing at Halstead, in the county of Harvey and State of Kansas, have invented a certain new and useful Band-Cutter Knife, of which the following is a specification.

The object of my invention is to provide a knife for band cutters and feeders capable of being secured to the shaft which carries it and which can be easily adjusted relative to said shaft, so that it is adaptable for bundles of greater or less size and also detachable from the shaft to which it is designed to be secured, so that the knife can be removed for sharpening or for being replaced by other knives.

A further object is to provide a knife having a sharp cutting edge with its outer end corrugated so that a comparatively easy operation will be effected when in use.

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

Figure 1 is a front elevation of the driving shaft on which the band cutter knives are mounted and shows in section said knives and the mechanism for securing them to the shaft. Fig. 2 is an end view of the shaft referred to in Fig. 1 with four of the band cutter knives mounted on it. Fig. 3 is a side elevation of one of the knives detached. Fig. 4 is a side elevation of another of one of said knives removed and looking at the opposite side from that shown in Fig. 3, and Fig. 5 is a perspective view of the clamping plates for detachably securing the knives to the shaft.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the driving shaft which is preferably hexagonal in cross section. Mounted on this shaft is a series of pairs of clamping plates each designed to secure a knife to the driving shaft 10. Each pair of clamping plates comprises the plate 11 and the plate 12 through the central portion of each of which is an opening 13 the wall of which is designed to closely fit over the driving shaft 10 and in the form shown, these openings are hexagonal in shape.

The plates 11 and 12 have the retaining portions 14 and 15 respectively which are formed by depressing a portion of said plates, as shown clearly in Fig. 5, so that these retaining portions engage each other to form a guide for the inner end of the band cutter knife and to assist in preventing it from movement when placed between the clamping plates. Passing through the retaining portions 14 and 15 is an opening 16 designed to admit a bolt for securely maintaining the retaining portions in position relative to each other. Through the opposite side of the plates 11 and 12, I have provided openings 17 in line with each other designed to admit a bolt for maintaining these plates in position relative to each other when the knife is placed between them in a manner hereinafter set forth.

I have provided a band cutter knife 18 having the sharpened edge 19 thereon and having the corrugated end 20 thereto. The sharpened edge 19 is curved in such a manner that, as the knife rotates, the cutting edge will gradually move away from the shaft to which the knife is attached and the outer end 20 thereof is arranged almost at right angles to the cutting edge 19. The advantage of having the curved body portion of the blade sharpened and smooth, and said outer end corrugated, and by having the corrugated portion almost at right angles to the smooth portion, is that when in the act of cutting, the smooth portion will cut through the ordinary bundles of grain with which the knife is used and if in the event that a bundle is engaged that cannot readily be cut through by the smooth, sharp edged portion, then said bundle will gradually be pressed down by the smooth, sharp edged portion and then when the corrugated portion engages it, the bundle will be cut through in a manner similar to the action of a saw. By having the corrugated end portion arranged almost at right angles to the smooth cutting edge, said corrugated portion will not engage with such portions of the bundles as will be easily cut by the sharp edge blade. Hence, in ordinary conditions, the smooth edge of the knife is all that will be in engagement with the material and it is only when an unusual obstruction is encountered that the corrugated portion will be forcibly pressed against it to cause it to be severed. At the opposite end of

the knife from the corrugated portion 20, I have provided a slot 21, the metal forming the edges of which is designed to engage the outer edges of the guide formed by the retaining portions 14 and 15 of the plates 11 and 12, when the knife 18 is inserted between the clamping plates 11 and 12. Adjacent to the slot 21 is a slot 22 designed to receive the bolt which passes through the openings 17 in the plates 11 and 12 when the knife 18 is in position between the clamping plates. This slot 22 is of considerable length so as to allow the knife 18 to be adjusted toward or away from the shaft 10 when the clamping plates are mounted on said shaft. The bolts passing through the openings 17 and 14 in the plates 11 and 12 when properly adjusted serve to hold the plates in rigid contact with the sides of the knife 18. When it is desired to remove the knife, this can be done readily by unscrewing the nuts from the bolts which hold the clamping plates in engagement with the sides of the knife and thus allows them to be separated and the knife to be removed. In the use of these knives it is customary to have a series of pairs of plates mounted on the shaft 10 and the pairs separated from each other by means of collars 23 on the shaft 10.

In practical operation, my device is very effective owing to the fact that the knives can be easily removed from the shaft whenever it becomes necessary to sharpen them and in it the knives can be easily adjusted so that they can be set out as the blade wears on its cutting edge.

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

1. The combination of a driving shaft, with clamping plates having retaining portions on each of them and secured to the driving shaft, a knife held partially between the clamping plates and having a slot in it for receiving the retaining portions of the clamping plates when the knife is inserted between them, and menas for securing the clamping plates in a clamping position against the side of the knife for retaining it against lateral movement relative to the shaft.

2. The combination of a shaft, with clamping plates mounted for movement longitudinally of the shaft away from each other and having a retaining portion on each of them, a knife having a slot in its lower end designed to fit over the said retaining portions and secured in position relative to the shaft by the clamping plates, the said knife also having a second slot adjacent to the slot which receives the retaining portions, a bolt passed through openings in the retaining portions of said clamping plates for securing the same together, and a bolt passed through the other side of the clamping plates and through the second slot in the knife, for the purposes stated.

3. In a device of the class described, a knife having a cutting edge arranged on a curve that constantly diverges from the center toward the outer end of the blade, said knife having an outer end portion arranged at an obtuse angle relative to the curved cutting edge, and approaching a line at right angles to the cutting edge, said cutting edge being smooth, and said outer end being corrugated, for the purposes stated.

GUSTAVUS A. HEGE.

Witnesses:
JOHN H. LINN,
GRACE HILL.