No. 782,497. PATENTED FEB. 14, 1905.

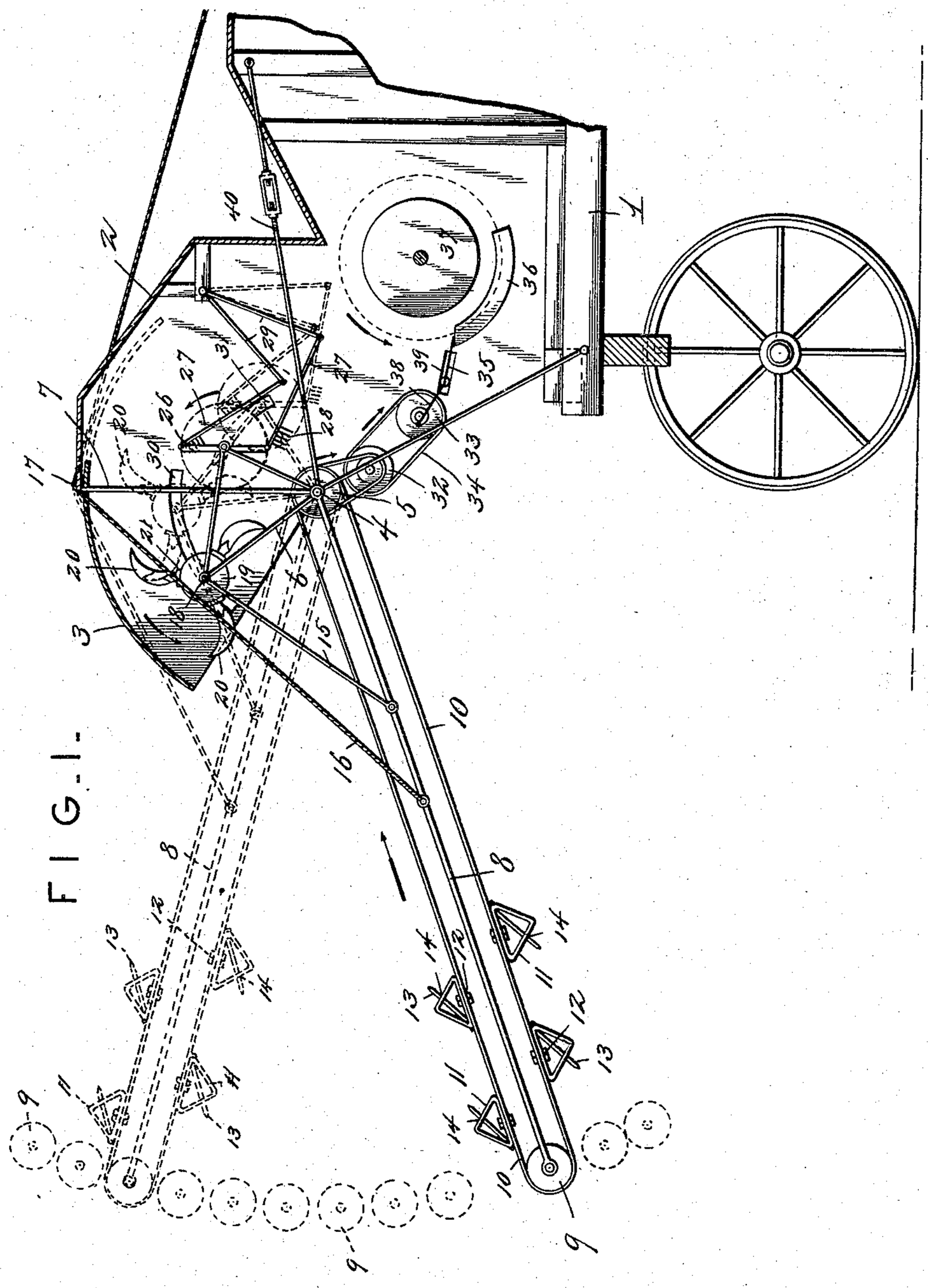
P. G. GIFFORD.

BAND CUTTER AND FEEDER.

APPLICATION FILED JUNE 18, 1903.

2 SHEETS—SHEET 1.

FIG. 1.



Witnesses

Harry L. Amer.

Edwin G. McKee

Inventor

Perl G. Gifford.

By Herbert D. Lawson

Attorney

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2 SHEETS—SHEET 2.

FIG. 2.

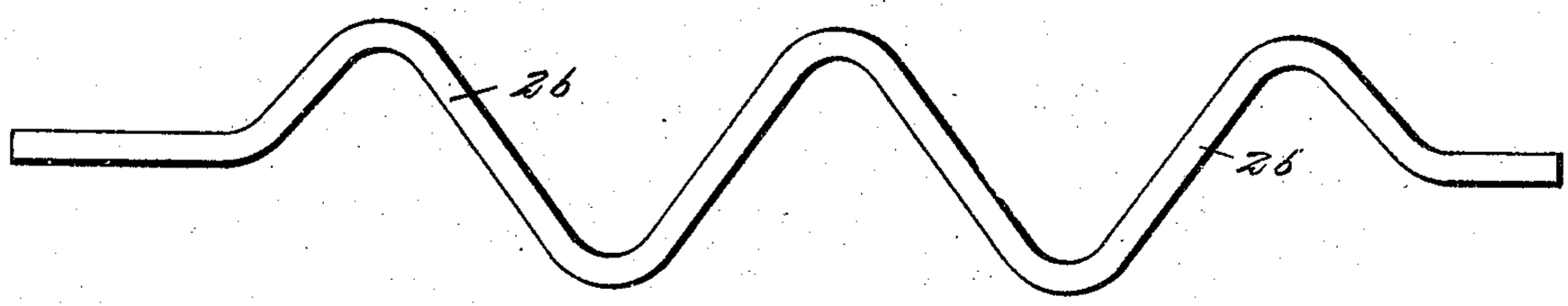


FIG. 3.

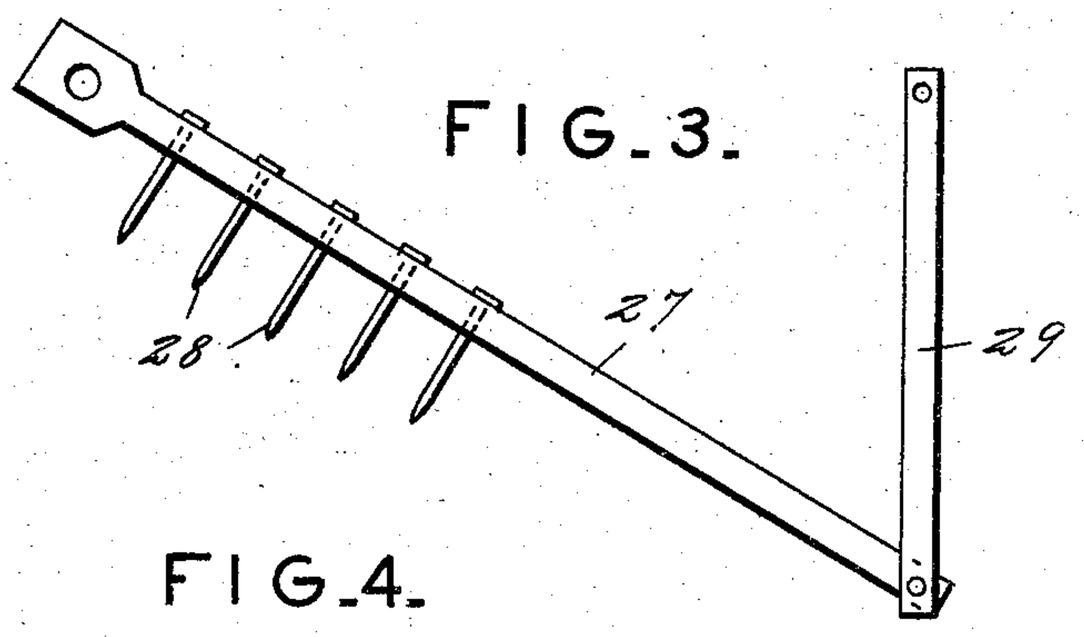


FIG. 4.

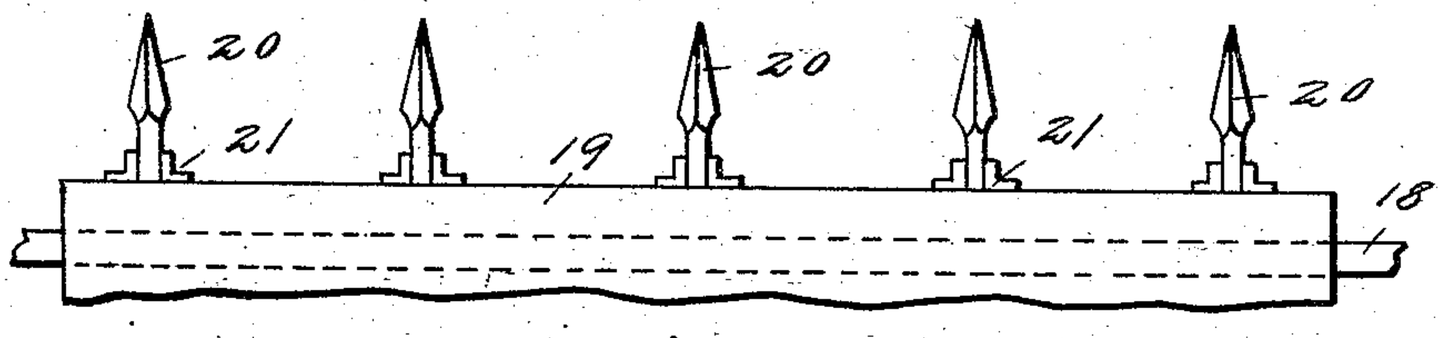


FIG. 5.

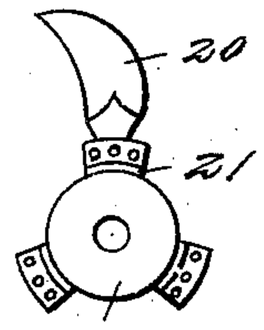


FIG. 6.

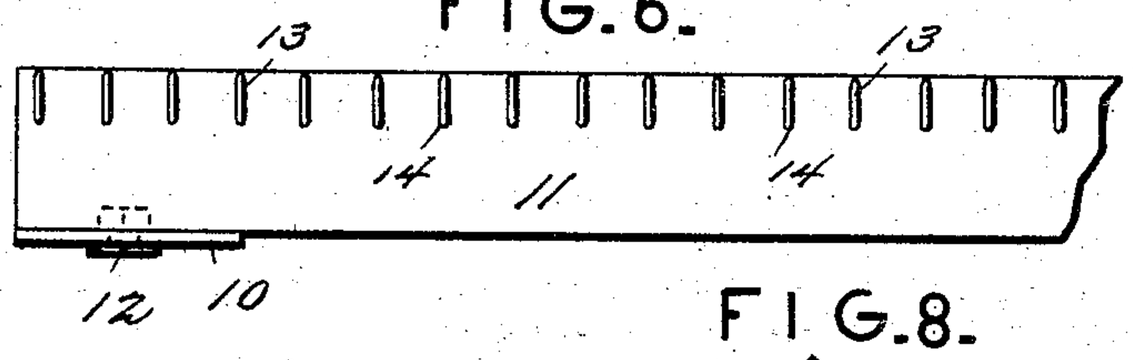


FIG. 7.

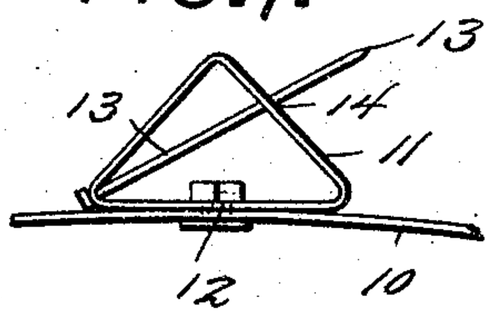
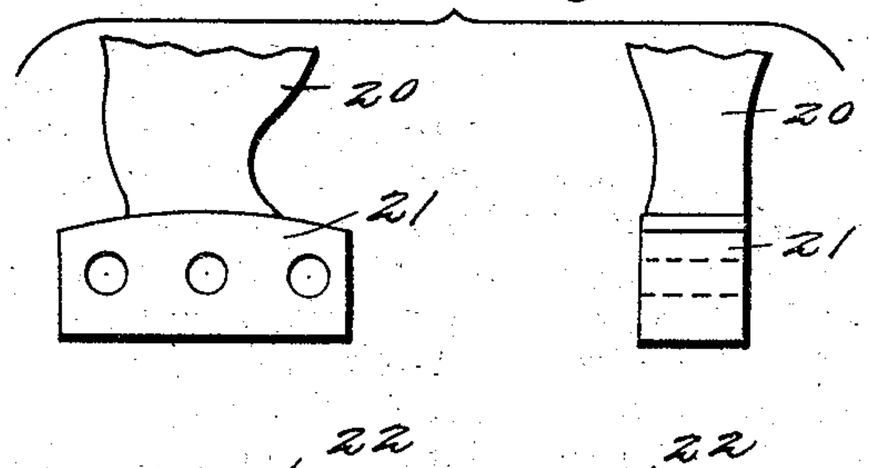
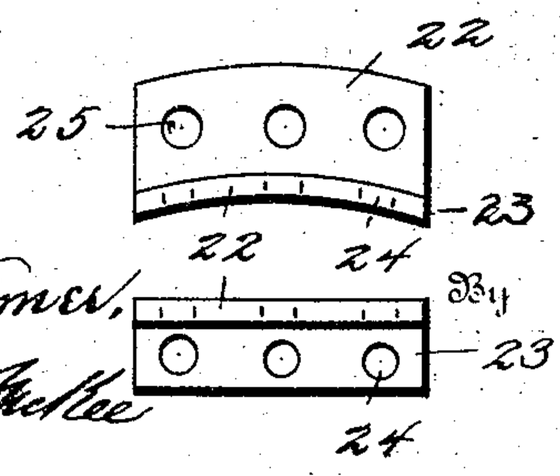


FIG. 8.





Witnesses

Harry L. Ames,

Edwin G. McKee

Inventor

Perl G. Gifford.

By

Herbert D. Lawson

Attorney

No. 782,497. Patented February 14, 1905.

UNITED STATES PATENT OFFICE.

PERL GEORGE GIFFORD, OF BRAINERD, MINNESOTA.

BAND-CUTTER AND FEEDER.

SPECIFICATION forming part of Letters Patent No. 782,497, dated February 14, 1905.

Application filed June 18, 1903. Serial No. 162,120.

To all whom it may concern:

Be it known that I, PERL GEORGE GIFFORD, a citizen of the United States, residing at Brainerd, in the county of Crow Wing and State of Minnesota, have invented certain new and useful Improvements in Band-Cutters and Feeders, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in band-cutters and feeders, and more especially to the feed mechanism used in connection therewith; and its object is to provide a conveyer of novel construction which may be adjusted vertically to a desired inclination during the operation thereof.

A further object is to provide a novel arrangement of feed-arms and knives and to employ means whereby material may be readily carried by the conveyer.

With the above and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, in which—

Figure 1 is a section through the rear portion of a threshing-machine, showing my improved feed mechanism in elevation. Fig. 2 is a detail view of the crank-shaft upon which the feed-arms are adapted to be mounted. Fig. 3 is a detail view of one of the feed-arms and its hanger. Fig. 4 is an elevation of a portion of the cutting-cylinder, showing a set of knives in position thereon. Fig. 5 is an end elevation of said cylinder with all but one set of the knives removed therefrom. Fig. 6 is a front elevation of one of the bars of the conveyer-apron. Fig. 7 is an end elevation thereof. Fig. 8 shows views in detail of the base of a knife and the means for securing the same in position upon its cylinder.

Referring to the figures by numerals of reference, 1 is the rear portion of the threshing-machine, having a cover 2 of the usual form and a hood 3 extending rearward therefrom and pivoted to the side walls of the threshing-machine upon a rod 4, which extends transversely thereof. This rod also serves as a bearing for a cylinder 5 and for skeleton frames 6, which are triangular in form and arranged at opposite ends of the cylinder. A brace-rod 7 extends from rod 4 upward to the rear portion of the machine and is connected to the outside thereof in any suitable manner. Rods 8 also project outward from these triangular frames, and a roller 9 is journaled between the outer ends thereof, and this roller, as well as the cylinder 5, before referred to, serves to support an endless apron 10, having a series of conveyer-bars 11 thereon. These bars, as illustrated in Figs. 6 and 7, are formed of sheet metal bent into triangular form and secured, by means of rivets 12 or other suitable means, to the outer surface of the apron. Spikes 13 project through apertures formed in the rear lower corner of each bar and through similar apertures 14, formed within the front face of the bar adjacent to the upper edge thereof. It will thus be seen that the spikes are held at an inclination and will readily engage any material with which they are brought into contact. A brace-rod 15 connects each triangular frame 6 with one of the rods 8, and a cable 16 or other flexible device is also fastened to each rod 8 and passes upward over a pulley 17, arranged at the top of the thresher, and thence to a motor of suitable form. (Not shown.)

A shaft 18 is journaled between the frames 6, at the outer ends thereof, and upon this shaft is secured a cylinder 19, upon which is fastened, preferably, three series of knife-blades 20. The cutting edges of these blades are preferably convex, and each blade is provided with a base 21. This base is adapted to be clamped in position upon the cylinder by means of ears 22. The ears are provided with concave flanges 23 at the lower edges thereof, which are adapted to be secured upon the cylinder 19 by means of bolts or other suitable devices adapted to be inserted into apertures 24, formed within the flanges. Apertures 25 are also formed in the ears for the reception of bolts which are adapted to be passed through the base 21 of a blade and fasten it to the ears.

The inner ends of the frames 6 serve as bearings for a shaft 26, having a series of cranks formed integral therewith and each of which

forms a bearing for a feed-arm 27, having spikes or teeth 28 projecting downward therefrom. The other end of each arm 27 is connected, by means of a hanger 29, to the upper portion of the thresher-frame. Suitable means (not shown) are employed whereby the shaft 26 and the cylinder 19 are revolved simultaneously.

The shafts 18 and 26 extend through slots 30 and 31, respectively, formed in the sides of the machine, and it is therefore obvious that when the cable 16 is drawn upward the rods 8 and frames 6 will be swung backward upon rod 4 as a fulcrum and said shafts 18 and 26 will be permitted to move therewith longitudinally within the slots 30 and 31. Any suitable means (not shown) may be employed for transmitting power to the cylinder 5 and from said cylinder to either shaft 18 or 26, and rollers 32 and 33 are journaled at points below cylinder 5 and receive motion therefrom, and mounted upon these rollers is an apron 34, which is adapted to conduct material from the inner end of the conveyer 10 to a shaker 35, slidably mounted upon the upper end of a concave 36, which projects under a threshing-cylinder 37. This shaker receives motion from the lower roller 33 by means of a pitman 38, and it is guided at its rear end in slots 39, formed in the sides of the machine.

A suitable brace-rod 40 may extend from the inner portion of the machine to the rod 4 to prevent the same from sagging outward under the pressure exerted thereupon.

In operation material is carried inward to the machine by the conveyer 10 and is chopped by the knives 20, extending from cylinder 19. The feed-arms 27 are then brought successively into engagement with this material and after tearing the same throw it downward upon apron 34, by which it is conveyed to the shaker and thence to the threshing-cylinder. If it is desired to raise the conveyer 10 during the operation of the machine, it is merely necessary to draw back upon the cable 16. As the frames 6 are rigidly connected with said conveyer, it is obvious that the shafts 18 and 26 will always remain in the same relation thereto.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes and alterations as fairly fall within the scope of my invention.

Having thus fully described the invention, what is claimed as new is—

1. In a band-cutter and feeder, the combination with a central rod, of skeleton frames pivotally mounted thereon, shafts journaled between said frames, a series of knives upon one of the shafts, feed-arms upon the other shaft, rods extending from the frames and movable therewith, cylinders journaled between the rods, a conveyer upon the roller, and means for swinging the conveyer and shafts in unison.

2. In a band-cutter and feeder, a feed device comprising a central rod, skeleton frames pivoted thereon, a shaft journaled between the frames, knives extending therefrom, a crank-shaft journaled between the frames, hangers, feed-arms pivotally connected to the hangers and crank-shafts, rods extending from, and movable with, the skeleton frames, cylinders journaled between said frames, a conveyer mounted upon the rollers, and means for swinging the conveyer and frames in unison upon the central rod.

3. In a band-cutter and feeder, the combination with a central rod; of skeleton frames pivotally mounted thereon, shafts journaled between said frames, a series of knives upon one of the shafts, cranks upon the other shaft, feed-arms pivoted to the cranks, a hanger pivoted to each feed-arm, teeth depending from the arms, and a conveyer.

4. In a band-cutter and feeder, the combination with a central rod; of skeleton frames pivotally mounted thereon, shafts journaled between said frames, a series of knives upon one of the shafts, cranks upon the other shaft, feed-arms pivoted to the cranks, a hanger pivoted to each feed-arm, teeth depending from the arms, rods extending from the frame, a conveyer mounted between the rods, inclined material engaging devices upon the conveyer, and means for swinging the conveyer and shafts simultaneously.

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

PERL GEORGE GIFFORD.

Witnesses:
J. M. ELDER,
KIT A. LIGHTFOOT.