

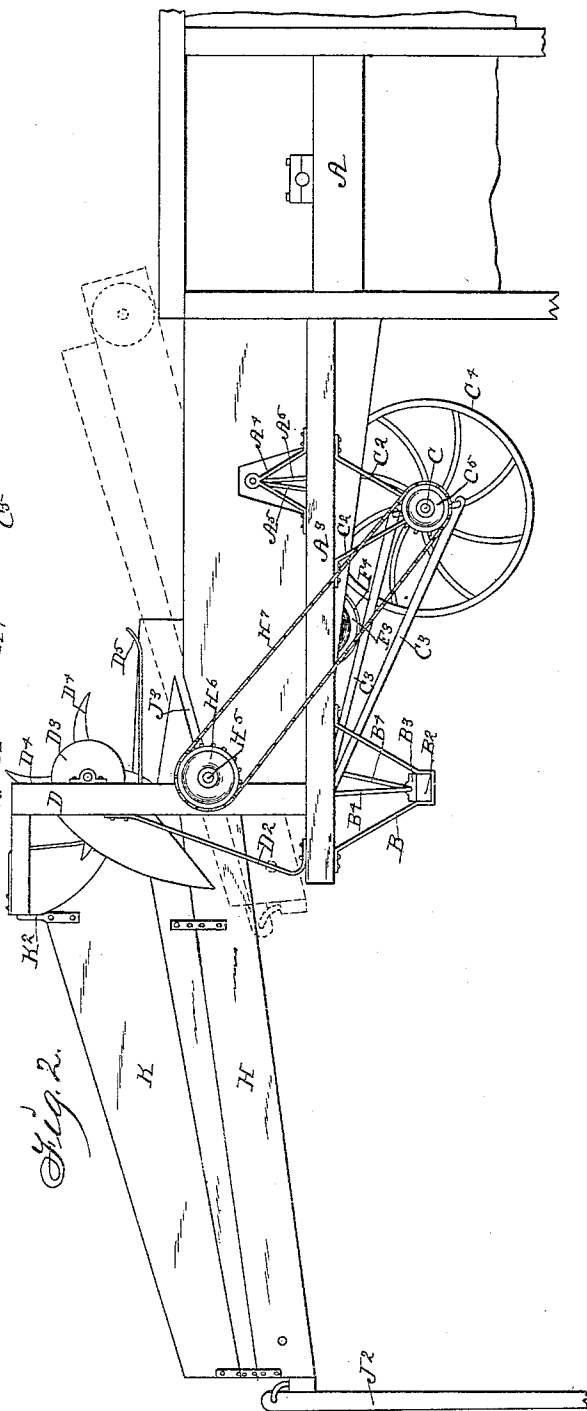
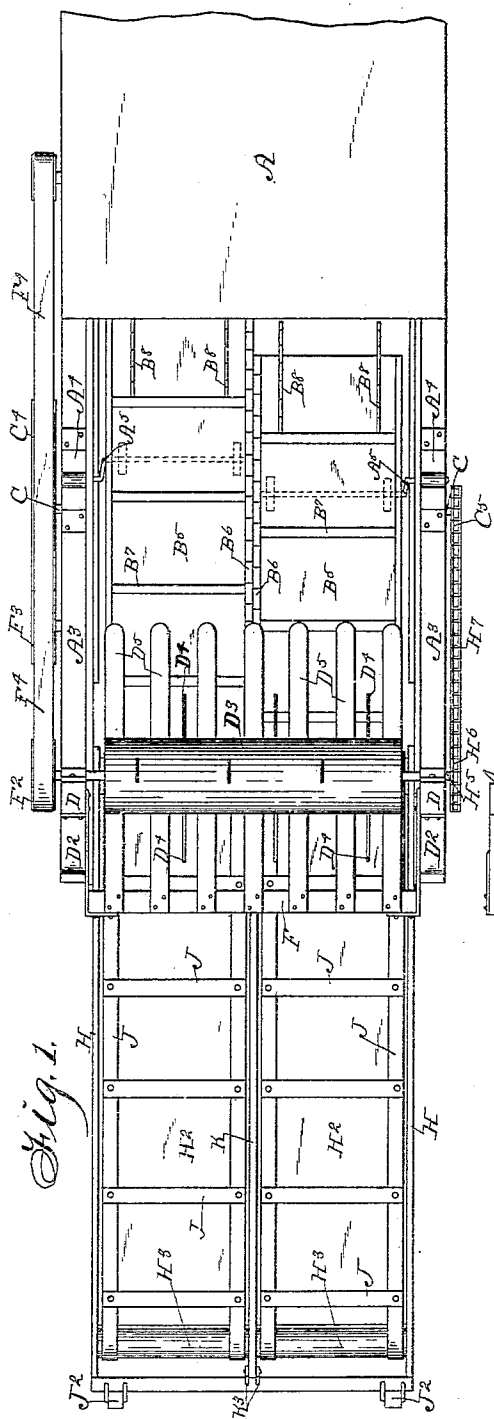
(No Model.)

2 Sheets—Sheet 1.

C. H. EDWARDS.
AUTOMATIC BAND CUTTER AND FEEDER.

No. 504,715.

Patented Sept. 12, 1893.



Witnesses:
W. J. Saukey,
J. Ralph Orwig.

Inventor: Charles H. Edwards,
By Thomas G. Orwig, Attorney.

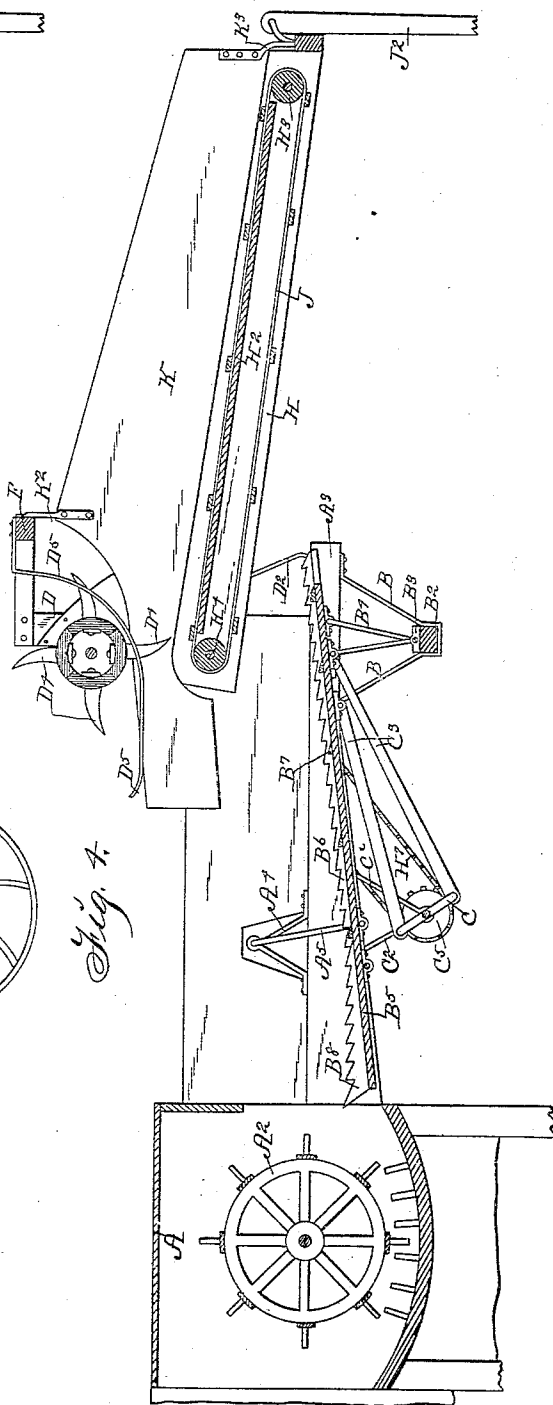
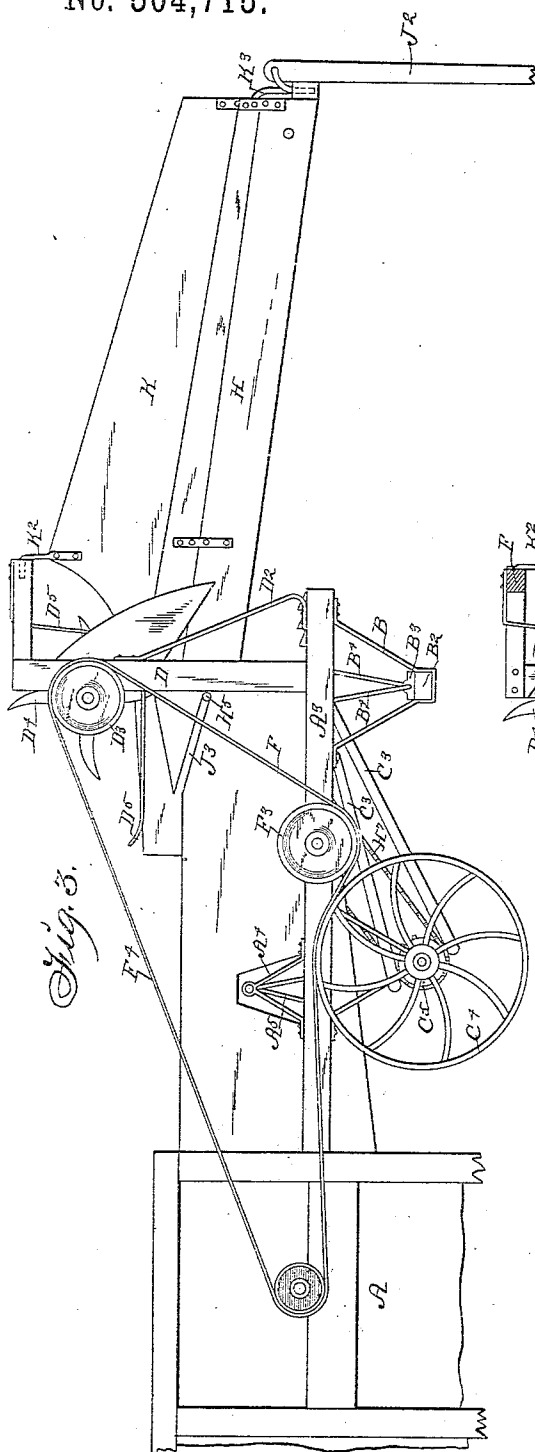
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UNITED STATES PATENT OFFICE.

CHARLES H. EDWARDS, OF ALTA, IOWA.

AUTOMATIC BAND-CUTTER AND FEEDER.

SPECIFICATION forming part of Letters Patent No. 501,715, dated September 12, 1893.

Application filed December 13, 1892. Serial No. 455,015. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. EDWARDS, a citizen of the United States of America, residing at Alta, in the county of Buena Vista and State of Iowa, have invented an Automatic Band-Cutter and Feeder, of which the following is a specification.

My object is primarily to provide a simple, strong and durable duplex conveyer adapted to carry two sheaves in parallel planes at the same time toward the band cutting device and be positive and direct in its operation and readily detached from the machine, for ease and convenience in transportation, storage, and also readily adjusted and folded on top of the machine to be carried thereon, and I accomplish the results contemplated as hereinafter set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of the complete band cutter and feeder attached to a thrashing machine, a portion only of which is shown. Fig. 2 is a side elevation of the same. In this figure the dotted lines show the position that the conveyer will be placed in when not in use to facilitate storage and transportation. Fig. 3 is an elevation of the same taken from the opposite side, and Fig. 4 is a vertical longitudinal sectional view of same.

Referring to the accompanying drawings, the reference letter A is used to designate the thrashing machine of which A² is the cylinder. A³ designates a frame secured to the machine in juxtaposition to the cylinder. In the opposite sides of this frame near the machine are fixed the brackets A⁴ each of which supports a hanger A⁵ in such a manner as to allow the hanger to freely swing in either direction. Near the outer end of said frame are secured brackets B which depend therefrom and support a cross piece B². Mounted upon the said part B² are bearings B³ to support the cranks B⁴, B⁴ and allow them to move in the segment of a circle.

B⁵ designates two feeding pans having raised serrated portions B⁶ on their meeting edges, bars B⁷ extending transversely of their top portions and the raised serrated portions B⁸ at their inner ends, to aid in advancing the grain to the cylinder.

An alternate reciprocating movement is imparted to these feeding pans by means of the following mechanism. The inner end of the pans are pivotally attached to the hangers A⁵ and the outer ends to the cranks B⁴ thereby allowing reciprocal movements to the pans. C designates a crank shaft supported by brackets C² beneath the frame A³. C³ C³ designate pitmen pivoted to the oppositely disposed cranks of the crank shaft C and hinged to the under sides of the feeding pans B⁵ so that a rotary motion applied to the crank shaft C will alternately reciprocate the feeding pans B⁵. C⁴ designates a belt wheel fixed to one end of the crank shaft C and C⁵ a sprocket wheel fixed to its other end. At the outer end of this frame A³ are two uprights D supported by the braces D² and at the upper end of these uprights is rotatably mounted a cylinder D³ with which the knives D⁴ are detachably connected. Said knives are curved and sharpened on their forward edges as required to produce a drawing cut. The cutting edges are preferably serrated. F designates a bar extending parallel with the cylinder D³ and supported by the uprights D and fixed to this bar are a plurality of flat spring metal fenders which curve downwardly under the cylinder D³ and have their end portions bent upwardly. Their function will be explained hereinafter. F² designates a belt wheel fixed to one end of the cylinder D³ and F³ an idler in juxtaposition to the belt wheel C⁴. F⁴ is a belt passed over a belt wheel connected with the operative mechanism of the thrashing machine over the belt wheel C⁴ under the idler F³ and around the belt wheel so that both the feeding pans and the cutting cylinder are thereby operated in concert with the thrashing machine.

The carrier frame is constructed as follows—H designates two parallel side pieces and H² a solid bottom piece. H³ H³ designate two rollers loosely mounted upon a shaft supported between the side pieces H near the outer end of the bottom piece H². H⁴ designates a single roller fixed to a rotatable shaft H⁵ at the inner end of the bottom piece. H⁶ designates a sprocket wheel fixed to one end of the shaft H⁵ and connected with the sprocket wheel C⁵ by means of the sprocket chain H⁷ to provide means for rotating the roller H⁴.

J J designate two endless carriers composed of flexible belts and cross pieces fixed thereto. These carriers are extended around the aforesaid rollers and also above and below the bottom of the conveyer frame so that when the rollers are operated the belts will carry any article placed thereon upwardly. The outer end of this frame is supported by means of the uprights J² which have a pivotal connection with the said frame, so that they may be swung upwardly parallel with the frame. Means are also provided whereby this frame may be detachably connected with the frame that is fixed to the machine as follows—

J³ J³ are slots formed in the side pieces of the frame and extensions are formed on the ends of the axle of the roller H⁴ adapted to enter said slots. The supports of the carrier frame are first folded upon the frame, then the outer end thereof is extended through the space between the cutting cylinder and the feeding pans until the aforesaid extensions enter the slots J³. This it will be seen provides a readily detachable connection with the frame of the band cutter and supports the endless carrier some distance above the feeding pans. By means of these journal bearings in the form of rearwardly extending open slots J³ adapted to receive the journals H⁵, the carrier frame is pivotally connected with the machine so that it can be raised and lowered at its free front end and also readily moved rearwardly under the band cutting cylinder D³ to be placed in position as indicated by dotted lines in Fig. 2 for the purpose of economizing space in storing the machine and also for facilitating moving the machine.

K designates a detachable partition in the conveyer composed of a flat board having its inner end adapted to enter between the cutter cylinder and the end of the carrier frame and its other end extended to the outer end of the carrier frame. It is supported by means of the rods K² K² adapted to enter bores in the ends of the fender supporting cross piece and by the bars K³ K³ adapted to enter bores in the cross piece at the outer end of the carrier frame. By thus detachably connecting the partition with the adjustable carrier frame and the frame to which the carrier frame is pivotally connected, the partition serves to brace and support the carrier frame and to aid in producing two distinct carriers for advancing grain, and when the partition is detached the carrier can be readily adjusted and placed in position, as indicated by dotted lines in Fig. 2, to facilitate transportation, to aid in bracing and supporting the pivoted carrier frame when in use and also to produce two parallel passage ways for grain carried on the two parallel endless carriers in said carrier frame.

The practical operation of the device is as follows. When prepared for storage transportation, &c., the conveyer frame is preferably placed with its one end resting upon the thrashing machine proper and its other end upon the frame which supports the band cut-

ting machine, as indicated by dotted lines in Fig. 2. When it is desired to use the device, the carrier and its longitudinal partition are placed in position in the manner before stated. The machinery is then set in operation by means of the operative mechanism of the thrashing machine and sheaves of grain may be fed upon both of the endless carriers to be thereby elevated and carried under the spring metal fenders and held in position while their bands are severed by the curved knives. The said endless carrier preferably terminates directly beneath the knives so as to prevent the device from becoming clogged. It will be seen however that if either of the endless carriers should become clogged the other will still carry sufficient grain to the thrasher to feed the same. After the bands of the sheaves have been severed the feeding pans will aid in holding the straw straight and feeding them gradually in the thrashing cylinder.

Having thus described the construction and function of each part of the device, what I claim as my invention, and desire to secure by Letters Patent of the United States therefor, is—

1. In a band cutter and feeder, the combination of the following elements to wit; a frame permanently attached to a thrashing machine, a rotatable cylinder, having knives, supported by said frame and adapted to sever the bands of sheaves of grain, means for advancing the grain from said cylinder toward the thrashing cylinder, and a conveyer for advancing bundles of grain to the said band-cutting cylinder, comprising suitable carrier mechanism in a frame adapted to pass between the said band cutting cylinder and the mechanism for advancing the grain to the thrashing cylinder, and, when not in use to be moved forward between the said cylinder and feeding mechanism and rest upon the top of the thrashing machine and the frame for supporting the band cutting cylinder, for the purposes stated.

2. In a band cutter and feeder the combination of the following elements, to wit; a frame A⁸ permanently attached to a thrashing machine, uprights D at the outer end of said frame, a cylinder D³, having knives D⁴, supported by said uprights, an endless carrier frame composed of the parts H and H², a roller mounted in the outer end of the frame, a rotatable shaft H⁵ extended transversely of the inner end of the carrier frame with its ends extended beyond the sides thereof, rollers H⁴ secured to said shaft, endless carriers passed over the rollers H⁴ and the roller at the outer end of the frame, a sprocket wheel H⁰ secured to one end of the shaft H⁵ to provide means whereby it may be rotated and the slots J³ J³ in the sides of the frame A⁸ to admit the ends of the shaft H⁵, all arranged and combined substantially as and for the purposes stated.

3. In a band cutter and feeder, the combination of a fixed frame having a rotating band cutter in its top portion, a carrier frame pivotally and detachably connected with the said

fixed frame in a plane below the rotating band cutter in such a manner that it can be moved rearward under the band cutter, and a partition adapted to be detachably connected with the said fixed frame and also with the movable carrier frame for the purposes stated.

4. In a band cutter and feeder a frame having two endless carriers mounted thereon in parallel position, a frame having a rotating cutter mounted thereon to extend across said carrier in a plane above the carrier and rearwardly inclined open slots or bearings in its sides to admit the ends of a shaft or journals extending outward from the sides of the frame that supports the carriers as shown and described to pivotally connect the carrier frame with the fixed frame and also to allow longitudinal movement of the carrier frame, relative to the fixed frame and a partition adapted to be detachably fixed to the said frames to separate the two parallel carriers, arranged and combined to operate in the manner set forth for the purposes stated.

5. In a band cutter and feeder, a fixed frame adapted to support a rotating band cutter at its top portion and the sides of the frame provided with open slots J³, and a carrier frame having journals H⁵ extended outward and adapted to enter and traverse said slots, ar-

ranged and combined so that the carrier frame can be raised and lowered at its free front end and also moved longitudinally underneath the rotating band cutter in the manner set forth for the purposes stated.

6. An improved band cutter and feeder for thrashing machines, comprising a frame having rearwardly extended open slots or bearings in its sides adapted to support the ends of a rotating shaft, a rotating band cutter mounted across the top portion of said frame and vibratory pans in the lower portion thereof, a movable carrier frame having a rotating shaft at one end and the ends of the shaft extended to enter said bearings in the frame that supports the cutter, two rollers at the other end and endless carriers on the said shaft and two rollers, a detachable partition between the two carriers, an adjustable support at one end of the said movable carrier frame, and mechanism for operating the rotating band cutter, the vibrating pans, and the endless carriers, arranged and combined to operate in the manner set forth for the purposes stated.

CHARLES H. EDWARDS.

Witnesses:

J. A. AHRENS,

J. E. PICKERING.