

(No Model.)

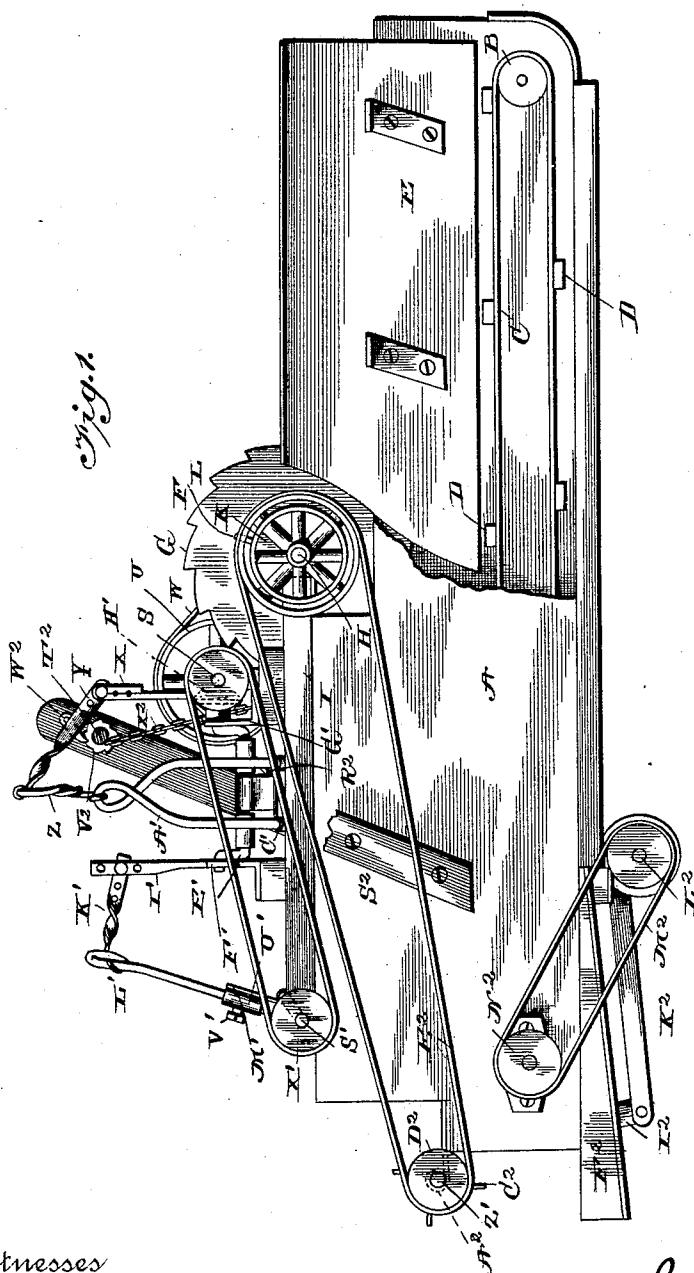
3 Sheets—Sheet 1.

J. W. TURNER.

BAND CUTTER AND FEEDER FOR THRASHING MACHINES.

No. 479,477.

Patented July 26, 1892.



Witnesses

John D. Irvine
Eugene T. Barrington

By his

Inventor
Jacob W. Turner
Attorney
Charles E. Adamson

(No Model.)

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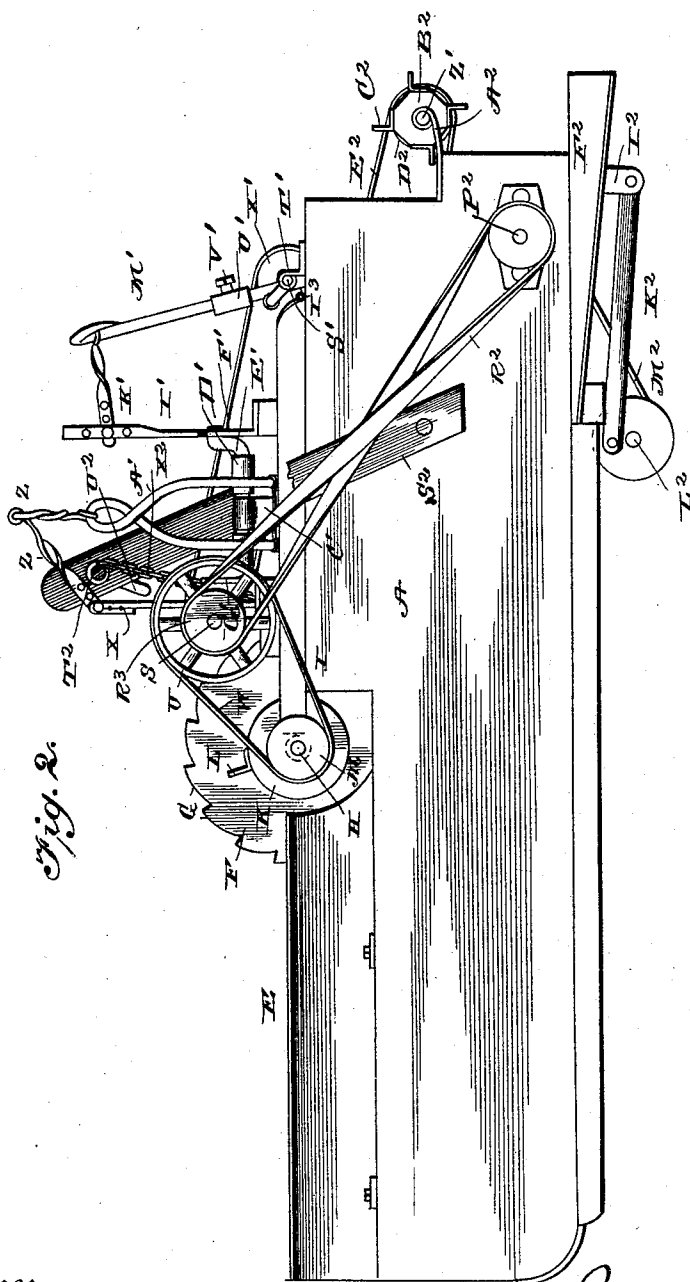


Fig. 2.

Witnesses

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(No Model.)

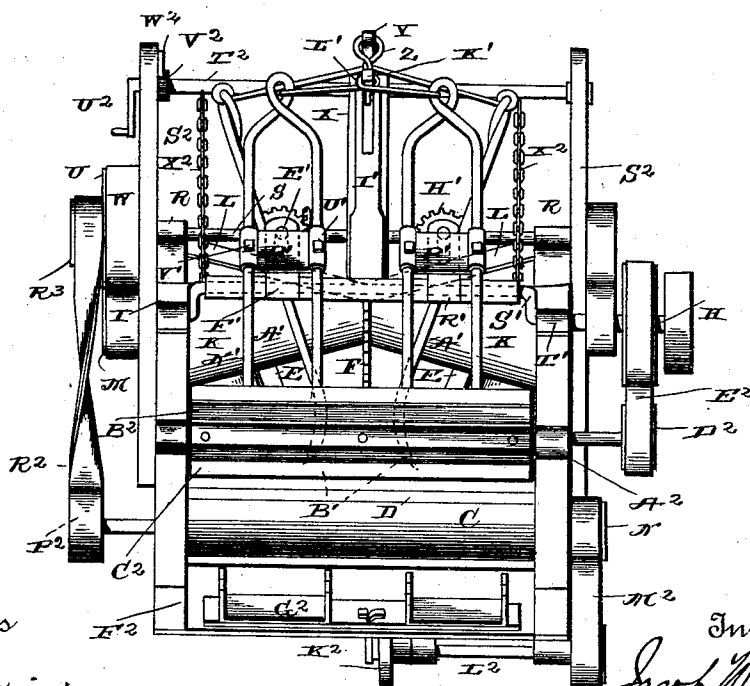
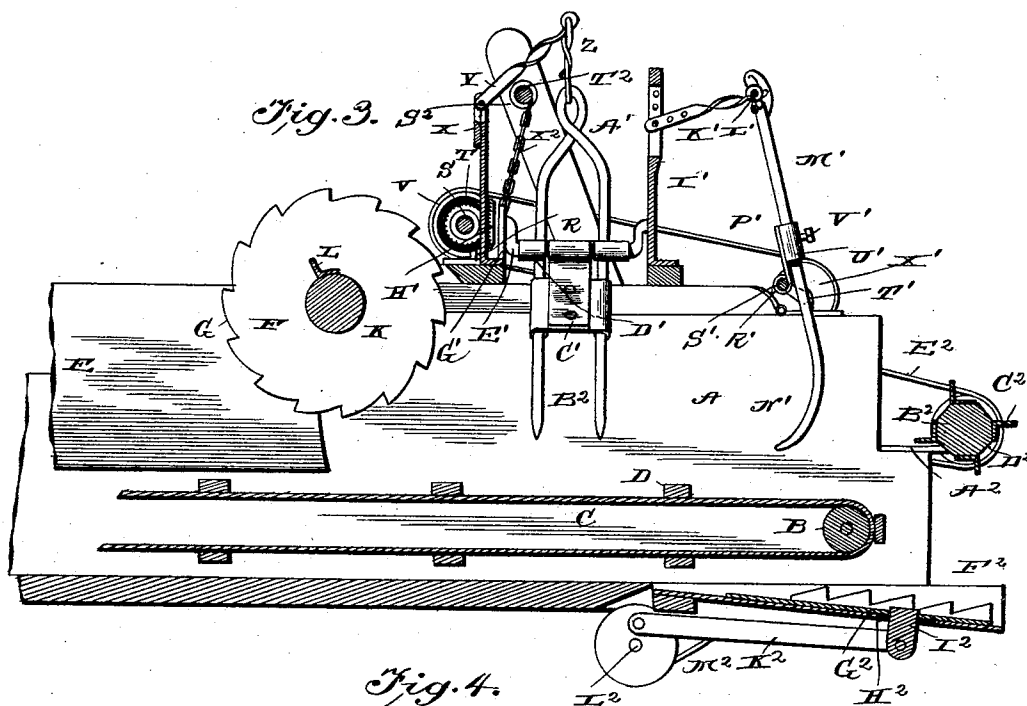
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UNITED STATES PATENT OFFICE.

JACOB W. TURNER, OF VAN WERT, OHIO, ASSIGNOR OF ONE-HALF TO
THEODORE CLAPPER.

BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 479,477, dated July 26, 1892.

Application filed January 26, 1891. Serial No. 379,109. (No model.)

To all whom it may concern:

Be it known that I, JACOB W. TURNER, a citizen of the United States, residing at Van Wert, in the county of Van Wert and State of Ohio, have invented certain new and useful Improvements in Band-Cutters and Feeders for Thrashing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in feeding apparatus for thrashing-machines; and it has for its objects to provide for feeding the sheaves of straw forward, cutting the bands which bind the sheaves, spreading the straw after the bands have been cut, and distributing the same properly to the cylinder of the thrashing-machine or carrier which conveys the straw and grain thereto, as more fully hereinafter explained. The above-mentioned objects are attained by the means illustrated in the accompanying drawings, in which—

Figure 1 represents an elevation of one side of my improved feeding apparatus; Fig. 2, an elevation of the opposite side thereof; Fig. 3, a central longitudinal sectional view of the apparatus, and Fig. 4 a front elevation of the same.

The letter A indicates a rectangular trough of suitable dimensions, in the lower portions of which, near each end, are journaled rollers B B, over which passes an endless carrier or belt C, having transverse ribs D on its outer surface, as shown. The said trough at one end is provided with inclined guide-plates E, which are adjustably secured within its walls, so as to be set at any convenient angle, the said plates converging slightly from the end of the trough into which the sheaves are fed to a point about midway between its ends, so as to compress the bundles or sheaves of straw as they pass to the band-cutter.

The letter F indicates the band-cutter, which consists of a disk or circular plate of metal having curved cutting-teeth G at its periphery and mounted upon a transverse shaft H, having its bearings in a frame I, hinged or adjustably connected to the upper edges of the trough at I³ for the purpose here-

inafter explained. The said cutter is mounted midway between the ends of the shaft, and to the said shaft at each side of the cutter are secured two cone-frustums K with their smaller ends adjoining the sides of the cutter. To these frustums and extending longitudinally along the same are secured the feed-blades L, the object of which is to bind against the sheave at the time the cutter is in operation in order to carry the sheave forward positively while the cutter is severing the band, so as to insure the forward movement of the straw through the apparatus. The shaft H projects beyond its bearings and is provided with pulleys M N P on its projecting ends for the purpose hereinafter explained.

To one of the cross-bars of the frame I are secured the vertical standards R, having bearings at their upper ends for the transverse shaft S, which has mounted on it two miter cog-wheels or pinions T. The ends of said shaft extend beyond its bearings, and upon the said ends are mounted the pulleys U and V, the pulley U being connected by a belt W with the pulley M on the shaft H, before mentioned. The said cross-bar midway between its ends is provided with a vertical standard X, the upper end of which is slotted and has fulcrumed in said slot a lever Y, which is provided with a series of fulcrum-apertures, by means of which it may be adjustably secured in said slot. To one end of said lever is loosely secured a link Z, having lateral extensions, which are loosely secured to the eyes of two rocking frames A', the lower ends of which are constructed in the form of curved fingers B', extending laterally toward each side of the conveying-trough A of the apparatus. The said rock-frames are secured to plates C', which are provided with sleeves D', fitting loosely over the cranks of two shafts E', journaled in bearings in the standards F' G', secured to the parallel cross-bars of the adjustable frame I, before mentioned. The ends of the said shafts E' contiguous to the miter cog-wheels or pinions T are provided with similar miter cog-wheels or pinions H', which intergear therewith and give a lateral spreading motion to the rocking frames and their fingers when the machine is in operation.

To the forward cross-bar, or that nearest the delivery end of the feed-trough and midway between its ends, is secured an upright standard I', which is slotted to form a seat for a lever K'. The said lever is provided with a series of fulcrum-apertures, by means of which it may be adjustably fulcrumed in its seat, and at one end is loosely connected to the eye of a link L', having lateral extensions connecting loosely with the eyes of two frames M', which at their lower ends are formed with curved holdback-fingers N'. The said frames are adjustably secured to plates P', which are provided with sleeves R', loosely oversetting a common crank of the shaft S', having its journal-bearings in standards secured to supporting blocks or brackets T', attached to the forward or delivery end of the sides of the trough A. The said plates are provided with sleeves U' at each side, through which the sides of the frames M' extend and on which they are adjustably held by means of set-screws V'. The shaft S' at one end is provided with a pulley X', which is connected by a belt with the pulley M on the shaft H and derives motion therefrom.

The letter Z' indicates a transverse shaft, which is journaled in bearings in the standards A³, secured to the upper edges of the sides of the trough at the rear or delivery end of the same. Upon the said shaft is mounted a polygonal drum B², to the alternate faces of the periphery of which are secured longitudinal blades or beaters C², the object of which will be hereinafter explained. The said shaft has its journal projecting beyond its bearing at one end, and at said projecting end is provided with a pulley D², which connects by means of a belt E² with the pulley N on the main driving-shaft of the apparatus.

To the lower edges of the sides of the trough A, at the delivery or rear end of the same, are secured the sides F² of an inclined chamber, upon the upper surface of the bottom of which is arranged to reciprocate longitudinally to the trough A a plate G². The bottom of the chamber is slotted, as shown at H², and through the slot extends and is adapted to travel a projecting arm or hanger I², secured to the bottom of the plate G². To the lower end of the said projection or hanger is loosely connected one end of a pitman K², the other end of the said pitman being connected to a wrist-pin secured to one face of a disk mounted upon a transverse shaft L², journaled in hangers secured to the bottom of the trough A, before mentioned. The said shaft at one end projects beyond its bearing and is provided with a pulley which connects by means of a belt M² with a pulley N² on one end of the shaft over which the conveyer-belt of the trough extends. The other end of said shaft is provided with a pulley P², which connects by means of a belt R² with the pulley R³ on the shaft S. To the upper face of the plate is secured a series of serrated carriers having the edges of their teeth in the direction of

their movement to the rear or delivery end of the machine arranged in a vertical plane, and their opposite edges arranged in an oblique plane, so that in the movement of the plate and the carriers the loose straw and grain will be moved toward the delivery end and prevented from being drawn back by the return movement of the conveyer-belt of the trough A, and thus clogging the apparatus.

The letter S² indicates two inclined standards secured to the outer sides of the trough A. These have seats at their upper ends in which the journals of the transverse shaft T² has its bearings. The shaft at one end is provided with a crank U² and between its bearings with a ratchet-wheel V², with which is adapted to engage a panel W². The said shaft is connected by chains or bands X² with the frame I, so that when said frame is elevated it may be held in such position until it is desired to release it.

The pulley P on the main driving-shaft H is the driving-pulley and may be connected by means of a suitable belt with a pulley of any suitable prime motor.

The operation of my improved apparatus is as follows: The apparatus being properly arranged in connection with a thrashing-machine, the sheaves are fed in endwise between the inclined guide-plates and are carried by the carrier-belt and blades on the cone-frustums to the cutter which severs the binding-band. The straw of the sheaves is then carried below the spreading-fingers which distribute it laterally over the carrier-belt, which conveys it to the holdback-fingers, the said fingers retarding its motion and loosening the straw preparatory to its final delivery. After leaving the holdback-fingers the straw passes under the beater to the serrated carriers, by means of which it is finally delivered to the thrashing machinery and any back draft of the straw or grain is prevented from the action of the carrier-belt of the feeder.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a band-cutter and feeder, the combination, with the carrier-belt and cutter, of the lateral distributors A', disposed over each side of the carrier-belt and suspended from a link Z, freely mounted in one end of an adjustable lever Y and carrying plates C', provided with sleeves D', fitting loosely over crank-shafts E', journaled in bearings on the feeder-frame, and gearing for rotating said crank-shafts, substantially as described.

2. In a band-cutter and feeder, the combination, with the carrier-belt and cutter, of lateral distributors, each consisting of a frame A', formed at its lower end with curved teeth B' and suspended by a link Z from a vertically-adjustable lever Y, a plate C', secured to each of said distributors and provided with a sleeve D', crank-shafts mounted in bearings on the feeder-frame, and gearing for actuating said crank-shafts, the sleeves D' being

loosely mounted on said crank-shafts, whereby a reciprocatory vibrating movement in a line transverse to the carrier-belt is imparted to the distributors, substantially as described.

5 3. The combination, with the carrier-belt and cutter, of the lateral distributors A', suspended over each side of the carrier-belt by a link Z, carried by a vertically-adjustable lever Y and having secured thereto plates C',
10 provided with sleeves D', loosely mounted on crank-shafts E', journaled in bearings on the feeder-frame, the holdback-fingers M', suspended transversely over carrier-belt by a link L', carried by a vertically-adjustable lever K' and having secured thereto plates P',
15 provided with sleeves R', loosely mounted on a crank-shaft S', journaled in bearings on the feeder-frame, and gearing for rotating said crank-shafts for imparting a reciprocatory vibrating movement to said distributors and
20 holdback-fingers, substantially as described.

4. The combination, with the carrier belt and cutter, of the spreading-fingers, each consisting of two curved arms united at their tops by an eye and connected together in pairs by a
25 link engaging said eyes, said link being loosely connected at its center to one end of an adjustable lever, plates secured to said curved arms and provided with sleeves, rock-shafts
30 secured in bearings on the feeder-frame and passing through said sleeves, and gearing for rotating said rock-shafts, whereby each pair of spreading-fingers has imparted to it a reciprocatory vibrating movement, substantially as shown and described. 35

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

JACOB W. TURNER.

Witnesses:

GEO. E. WELLS,
ENOCH CONNER.