

No. 836,766.

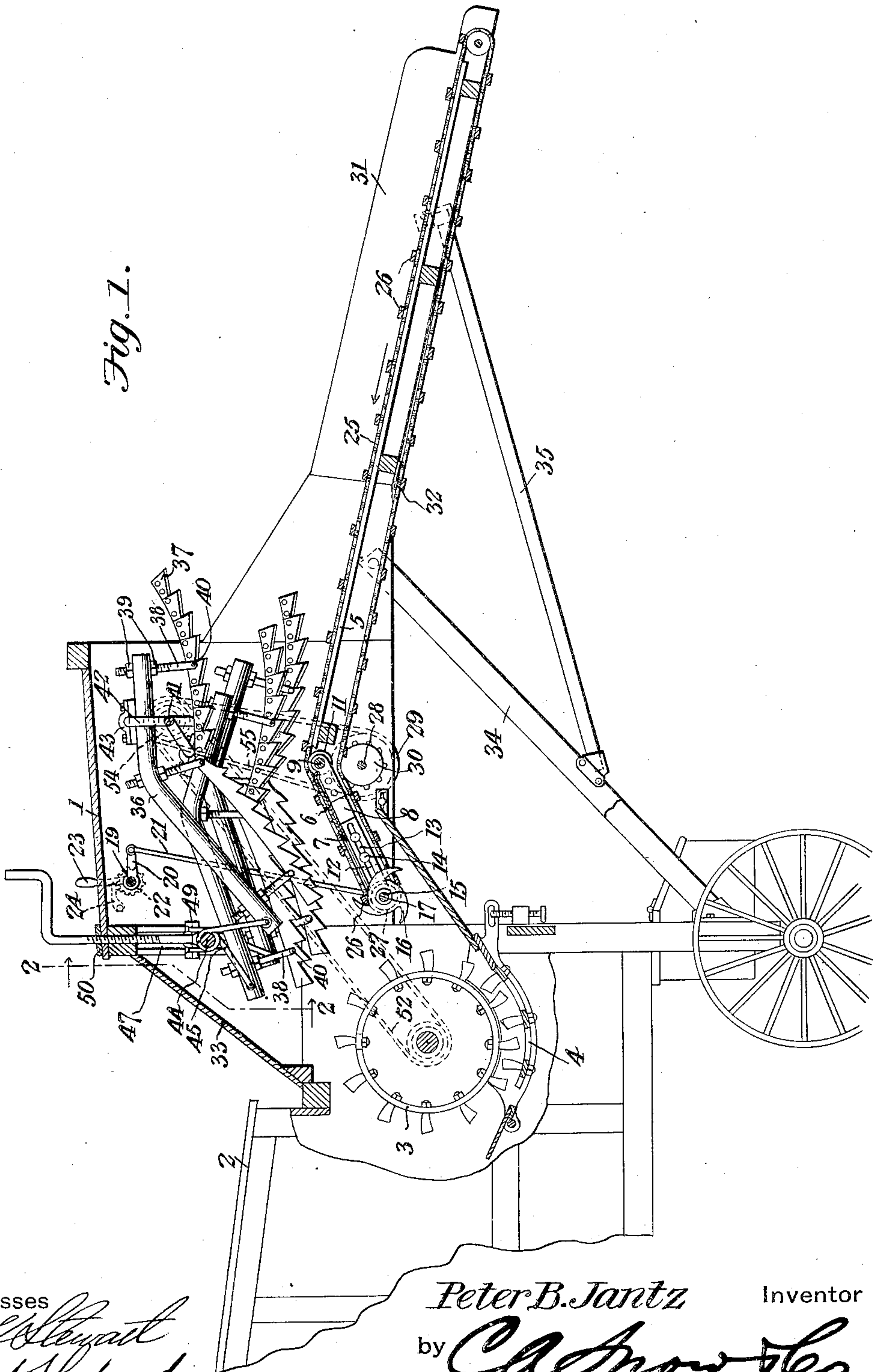
PATENTED NOV. 27, 1906.

P. B. JANTZ.
BAND CUTTER AND FEEDER.

APPLICATION FILED OCT. 6, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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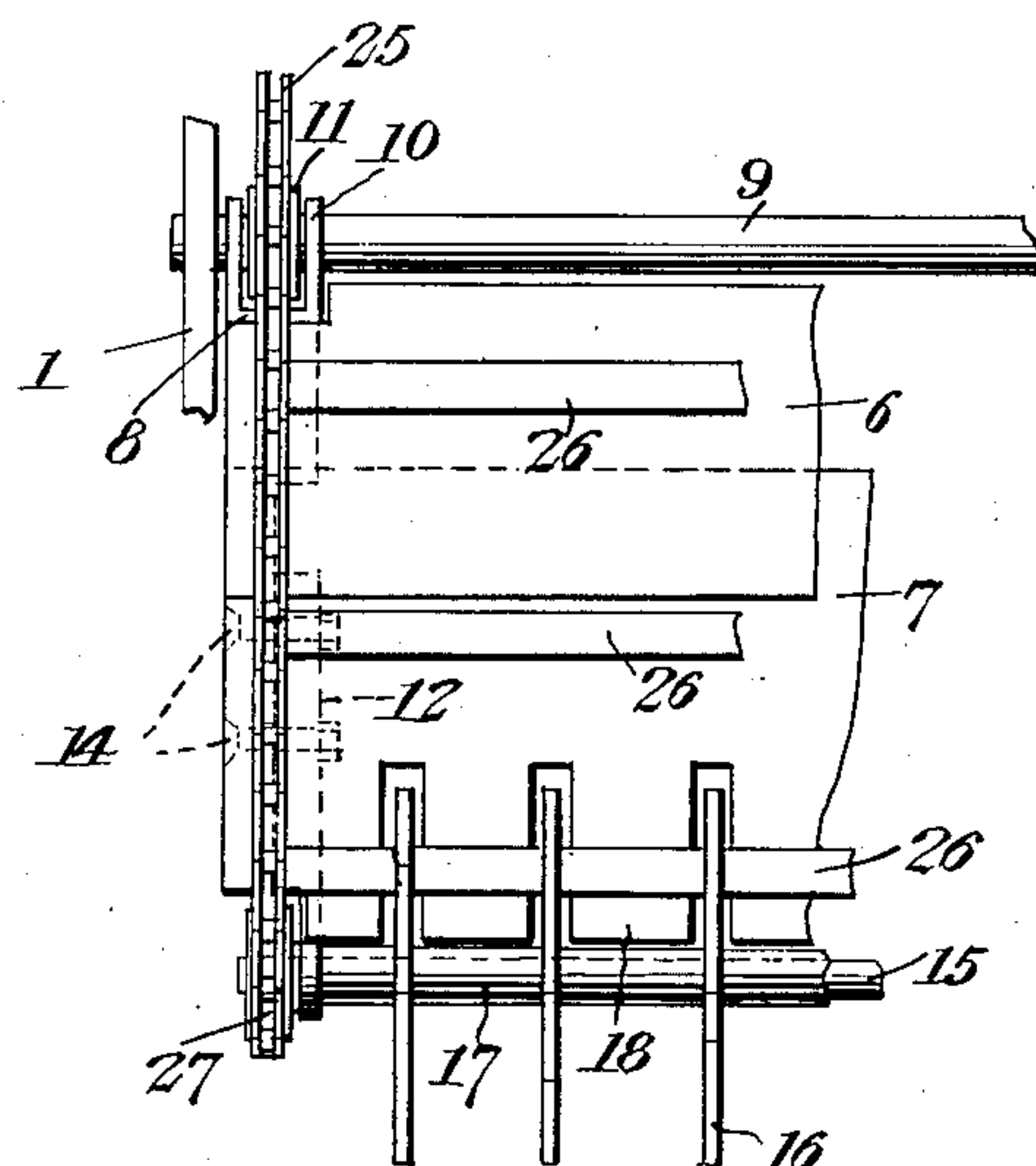
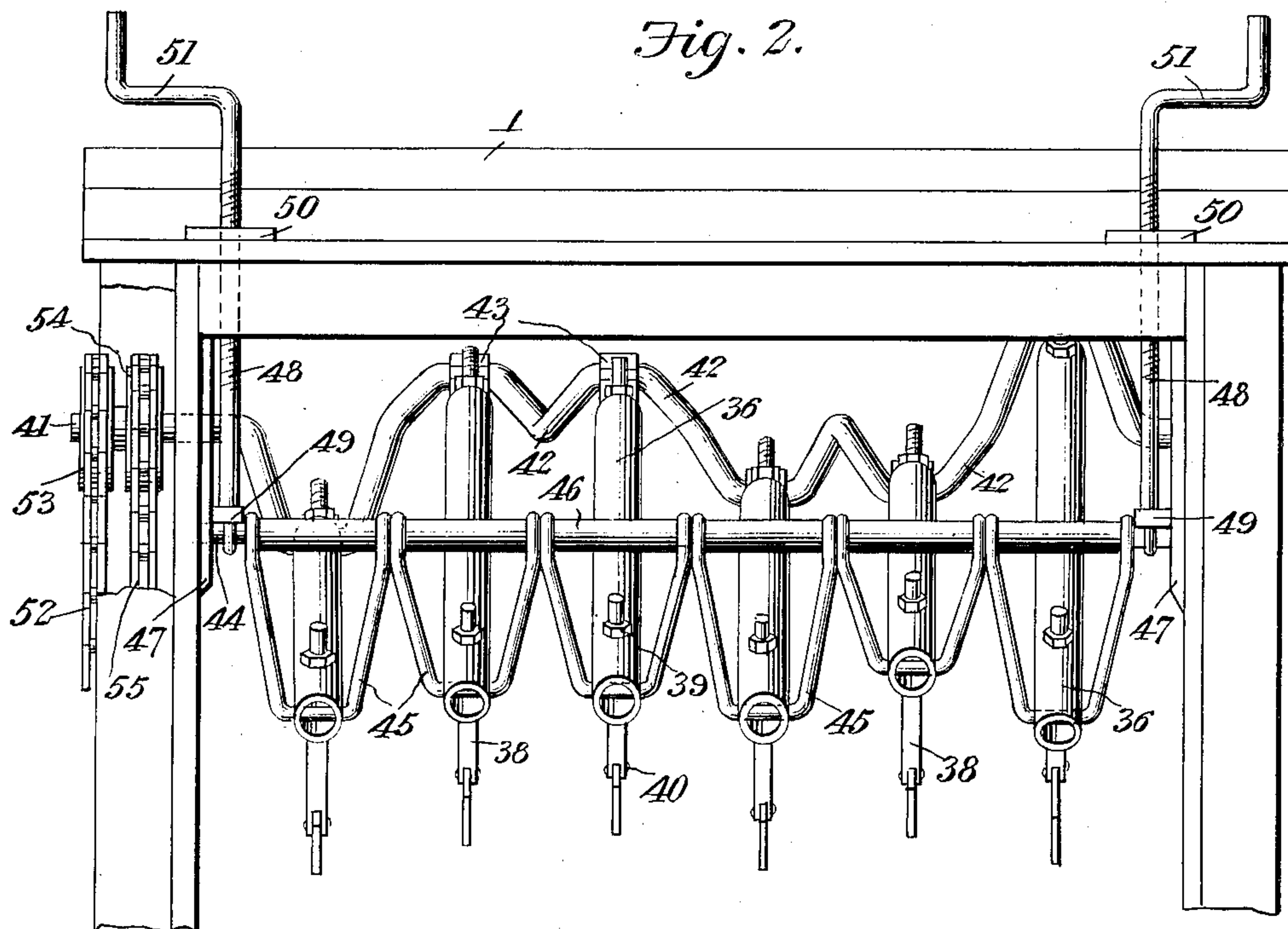
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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE.

PETER B. JANTZ, OF GALVA, KANSAS.

BAND-CUTTER AND FEEDER.

No. 836,766.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed October 6, 1905. Serial No. 281,659.

To all whom it may concern:

Be it known that I, PETER B. JANTZ, a citizen of the United States, residing at Galva, in the county of McPherson and State of Kansas, have invented a new and useful Band-Cutter and Feeder, of which the following is a specification.

This invention relates to band-cutters and feeders for use in connection with threshing-machines, and has for its object to provide certain new and useful improvements whereby the bands are promptly and effectually cut and the straw is regularly and evenly fed to the threshing-cylinder in a simple and entirely satisfactory manner.

A further object of the invention is to provide for the vertical adjustment of a portion of the carrier-floor so as to accommodate the device to the condition of the wheat, and thereby prevent choking of the machine.

It is proposed to have the retarders carried by the adjustable floor portion and to effect the stripping of the straw from the retarders, so as to prevent the latter from becoming choked by accumulations of straw thereon.

A still further object of the invention is to provide for the convenient vertical adjustment of the inner ends of the cutter-bars and also to give the latter a novel form for the purpose of preventing choking of the feeder at the lowermost limits of the bars.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a band-cutter and feeder embodying the features of the present invention in its operative relation with respect to a threshing-machine. Fig. 2 is an enlarged sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged fragmentary plan view of the adjustable floor portion of the feeder.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

As embodied in the accompanying drawings, it will be seen that the frame 1 is of conventional form and is fitted to the frame 2 of the threshing-machine in the usual or any preferred manner. The frame of the threshing-machine has been broken away to show the threshing-cylinder 3 and the usual concave 4. Within the front portion of the frame 1 is the stationary upwardly and inwardly inclined floor portion 5, in rear of which is a vertically-adjustable floor portion made up of overlapped metallic plates 6 and 7. The plate member 6 is provided at each side with a side bar 8, which is pierced at its upper end by a transverse shaft 9, the upper extremity of the side bar being bifurcated, as at 10, for the reception of a pulley or sprocket-wheel 11, carried by the shaft 9. Each side of the other floor member 7 is provided with a side bar 12, which overlaps the bar 8 upon its inner side and is provided with a longitudinal slot 13, in which is received the headed fastenings 14, preferably bolts, carried by the side bar 8, thereby to effect adjustment of the section 7 back and forth across the section or member 6. A transverse shaft 15 pierces the lower or outer ends of the side bars 12, in which said shaft is journaled, the ends of the shaft being terminated short of the sides of the frame in order that the shaft may be adjusted with the floor-section 7. The shaft 9 in addition to piercing the side bars 8 also passes through or is supported upon the side walls of the main frame 1 and constitutes a pivotal support for the adjustable floor portion 6, adapted to be swung vertically, as will be hereinafter described. Upon the shaft 15 there is a series of retarders 16, fixed to the shaft so as to rotate therewith and regularly spaced by means of spacing-sleeves 17, as best shown in Fig. 3 of the drawings. To accommodate the retarders, the lower edge of the floor-section 7 is provided with a series of bifurcations 18, which produce stripping-fingers between the retarders for the purpose of stripping therefrom such straw as may tend to wind around the retarder-shaft, whereby said retarder-shaft and retarders are cleared of any accumulation of straw, and thus prevented from becoming choked.

For the purpose of raising and lowering the adjustable floor portion of the feeder a rock-bar 19 is mounted transversely across the upper portion of the frame 1 in substantial ver-

tical alinement with the retarder-shaft 15. Upon each end portion of this rock-bar and within the main frame there is a crank-arm 20, from which depends a link 21, having its lower end connected to the adjacent side-bar of the adjustable floor portion. One end of the rock-bar is extended externally of the frame 1 and provided with a ratchet-wheel 22 and a crank-handle 23, there being a pawl or dog 24 mounted upon the frame in coöperative relation with the ratchet-wheel, so as to hold the rock-bar in any adjusted position. By manipulation of the crank-handle 23 the lower free end of the adjustable floor portion may be raised and lowered so as to accommodate the device to the condition of the material under treatment.

The advantage of having the retarder carried by the adjustable floor portion independent of the sides of the frame is that such arrangement avoids the formation of openings in the frame, through which the material under treatment may escape. Moreover, by having the retarder supported solely upon the adjustable floor portion there are no guideways liable to become choked, and thus interfere with the convenient adjustment of the floor portion.

The bundles or sheaves of wheat are delivered to the feeder by means of an endless conveyer 25, preferably including sprocket-chains and slats or cross-bars 26, each of said chains running over the adjacent pulley or sprocket 11 on the shaft 9 and a similar sprocket or pulley 27 upon the retarder-shaft 15, whereby the latter is driven directly by the conveyer, thereby dispensing with additional driving means for the retarder. Directly beneath the shaft 9 there is another shaft 28, which pierces one side of the frame 1 and is provided upon its outer end with a drive-pulley 29, there being a sprocket-wheel 30 upon the shaft 28 for each of the conveyer-chains 25, whereby the conveyer is driven from the shaft 28 and the latter is driven through the medium of the pulley 29. The front portion of the conveyer 25 is carried by a supplemental frame portion 31, which is hinged at its forward end and upon its under side to the rear end of the main frame 1, as shown at 32, in order that the conveyer may be folded back beneath the frame when not in use.

The main frame 1 of the feeder has a rear hooded extension 33 to rest upon the open top of the frame 2 of the threshing-machine, so as to lie above the threshing-cylinder, there being the usual prop 34 between the threshing-machine and the front portion of the frame of the feeder and a brace 35 between the prop and the supplemental frame portion 31, which carries the conveyer.

Before subjecting the bundles or sheaves of wheat to the threshing-cylinder it is of course necessary to sever the bands around

the sheaves, so as to scatter the latter into a comparatively thin layer, and this is accomplished by means of a series of band-cutting devices. Each cutting device includes a longitudinally-disposed beam 36, preferably in the nature of a metallic tube, which is disposed within the upper portion of the frame and is arched where it crosses the highest portion of the floor of the feeder. Beneath this beam is a cutter-bar 37, which is bowed to correspond with the beam and is hung from the latter by a plurality of hangers, each of which consists of a threaded rod 38, adjustably piercing the beam and held thereon by means of nuts 39 above and below the beam. The lower end of each hanger is bifurcated to straddle the cutter-bar, and the latter is fixed to the hanger by means of a fastening 40, piercing the bar and the hanger. The teeth of the cutter-bar are preferably in the nature of individual sickle-edged sections riveted or otherwise secured to the cutter-bar, the blades upon the front portion of the bar being disposed reversely to those upon the rear portion of the bar and arranged to have their longer sharp cutting edges sever the bands of the sheaves or bundles of wheat when the latter are being carried over the stationary floor portion 5 by the conveyer 25 and during the forward movement of the cutter-bar. It will thus be understood that the front series of blades are intended to cut or sever the bands upon the sheaves or bundles of wheat, and the rear series of teeth are designed to spread and feed forward the straw after the bundles have been released from the bands. The rear portions of the beams 36 are carried and driven by a shaft 41, which is provided with a series of cranks 42, to which the beams are successively connected by means of bearing-boxes 43, whereby the cutting devices are successively worked back and forth by the drive-shaft. For the support of the rear ends of the beams 36 there is a cross-bar 44, from which hangs a series of bail-shaped links 45, which engage the forward ends of the respective beams and have their upper ends loosely engaging the cross-bar 44. The sides of each link are held apart by a spacing-sleeve 46. Each end of the cross-bar 44 works in a vertical guideway 47, provided upon the frame of the feeder, and said end of the cross-bar is suspended from the top of the frame by means of an adjusting-rod 48, upon the lower end of which is a swivel boxing or bracket 49, in which the cross-bar is supported. The upper portion of the rod 48 is threaded and passes through a threaded opening in the metallic plate 50, secured upon the top of the frame, the upper end portion of the rod being provided with a crank-handle 51 for convenience in turning the rod, so as to raise and lower the cross-bar 44, and thereby adjustably elevate the forward ends of the beams 36.

With the feeder supported in connection with a threshing-machine, as shown in Fig. 1 of the drawings, power is taken from a pulley upon one end of the shaft of the threshing-cylinder by means of a belt 52, which engages a pulley 53 upon one end of the drive-shaft 41 of the band-cutting mechanism. Another pulley 54 is provided upon the drive-shaft 41, and from this pulley a belt 55 extends to the pulley 29 upon the shaft 28 for the purpose of driving the conveyer 25.

When the apparatus is in operation, the bundles or sheaves of wheat are deposited upon the conveyer 25 and are thereby carried forwardly into the rear portion of the feeder, where the bands are severed by the action of the blades upon the rear portions of the cutter-bars, the wheat of course being carried onward by the conveyer and spread out into a comparatively thin layer by the action of the rear series of teeth. It will here be explained that the band-cutting devices operating upon the top of the wheat work much faster than the retarders which operate upon the under side of the wheat, whereby the forward series of teeth of the band-cutters are tearing off and feeding the upper portion of the wheat to the threshing-cylinder instead of permitting the entire bulk of wheat to be directly fed to the cylinder, and thus choking of the latter is prevented.

Should the straw be damp and tough or matted, the cutter-bars may be set down closer to the conveyer and the retarder raised so as to decrease the space through which the grain passes, thus producing more thorough distribution of the bundles or masses of grain. On the other hand, should

the straw be dry and more easily distributed, as in headed grain, the cutter-bars can be raised and the retarder lowered, thus admitting of a free flow of straw to the threshing-cylinder, this adjustment being accomplished while in operation.

Having fully described the invention, what is claimed is—

1. A band-cutter and feeder having overlapped floor-sections, one of the sections being pivotally supported, the other section being slidably adjustable upon the pivotal section and provided in its free end with a series of bifurcations, a series of rotatable retarders carried by the slidable section and working in the respective bifurcations, and means to adjustably swing the sections as a whole upon the pivotal support of the pivoted section.

2. In a band-cutter and feeder, the combination with a frame, of a vertically-tiltable floor-section provided at its forward end with a series of bifurcations, a shaft carried by the front portion of said floor-section, rotary retarders carried by the shaft and working in the bifurcations, the floor portions between the bifurcations constituting strippers for the retarders, pulleys upon the shaft, and an endless feed-conveyer embracing the tiltable floor-section and engaging the pulleys upon the shaft for actuating the retarders.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

PETER B. JANTZ.

Witnesses:

JNO. P. O. GRABER,
J. J. RUTH.