W. D. LINDSAY.

SELF FEEDING DEVICE FOR THRESHING MACHINES.

APPLICATION FILED JUNE 3, 1911.

1,190,564.

Patented July 11, 1916.

3 SHEETS—SHEET 1.

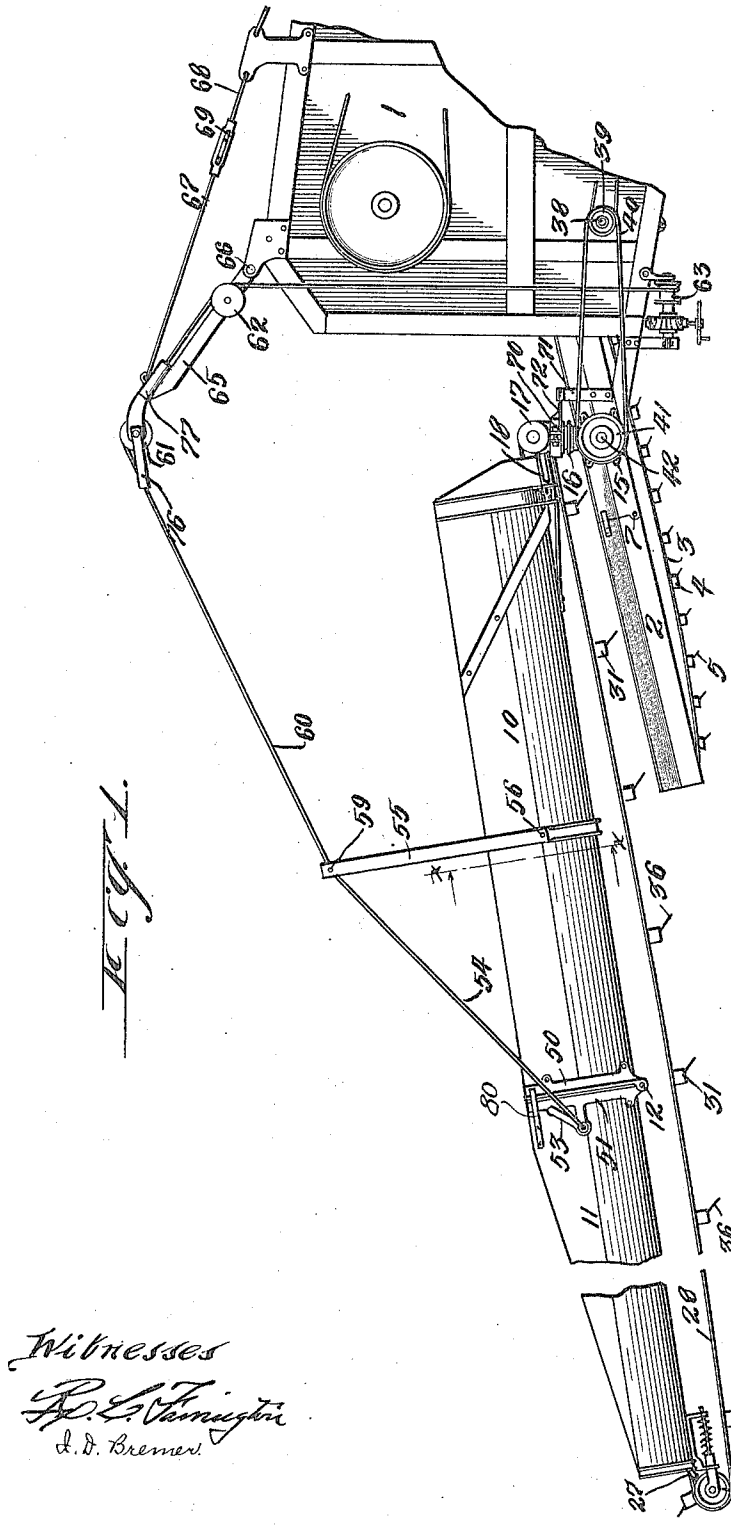


Fig. 1.

Witnesses
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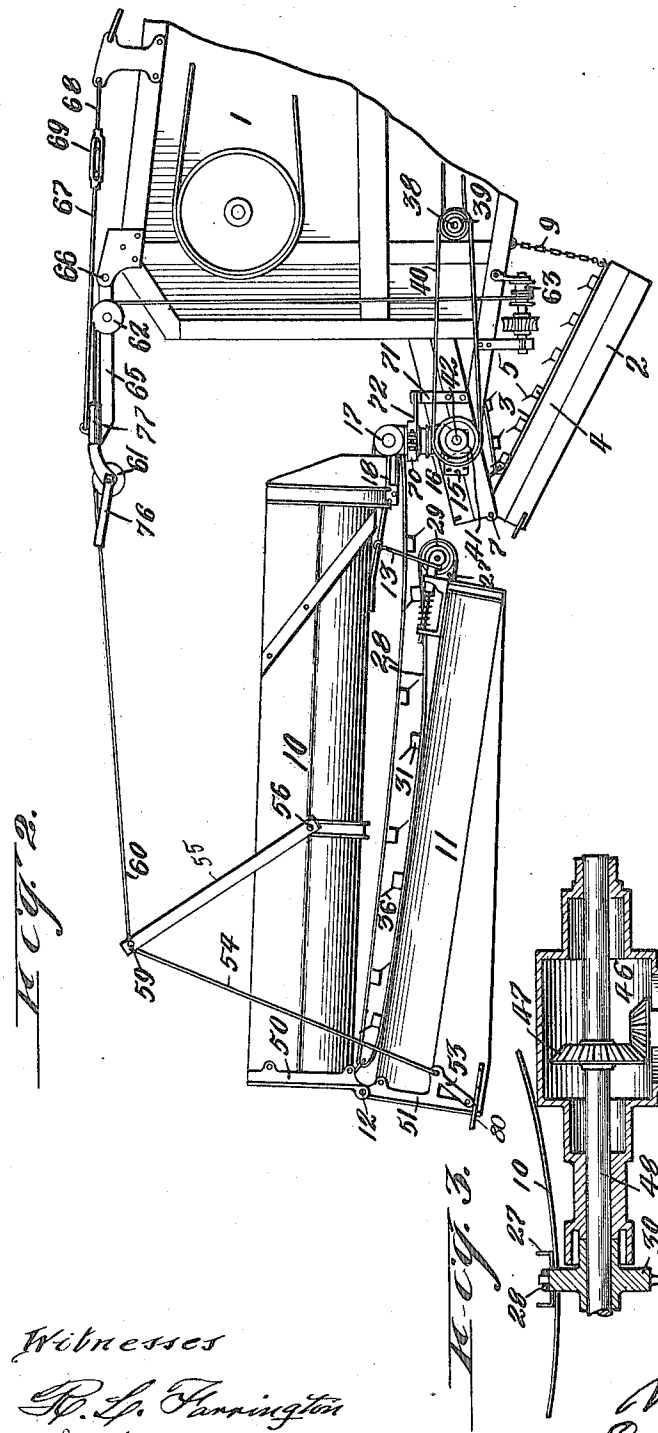


Fig. 2.

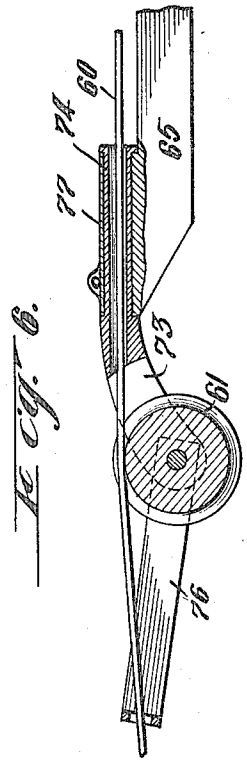


Fig. 6.

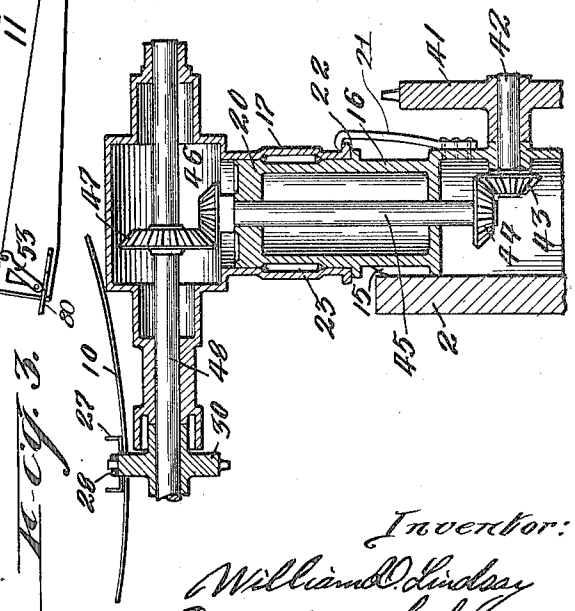


Fig. 5.

Witnesses

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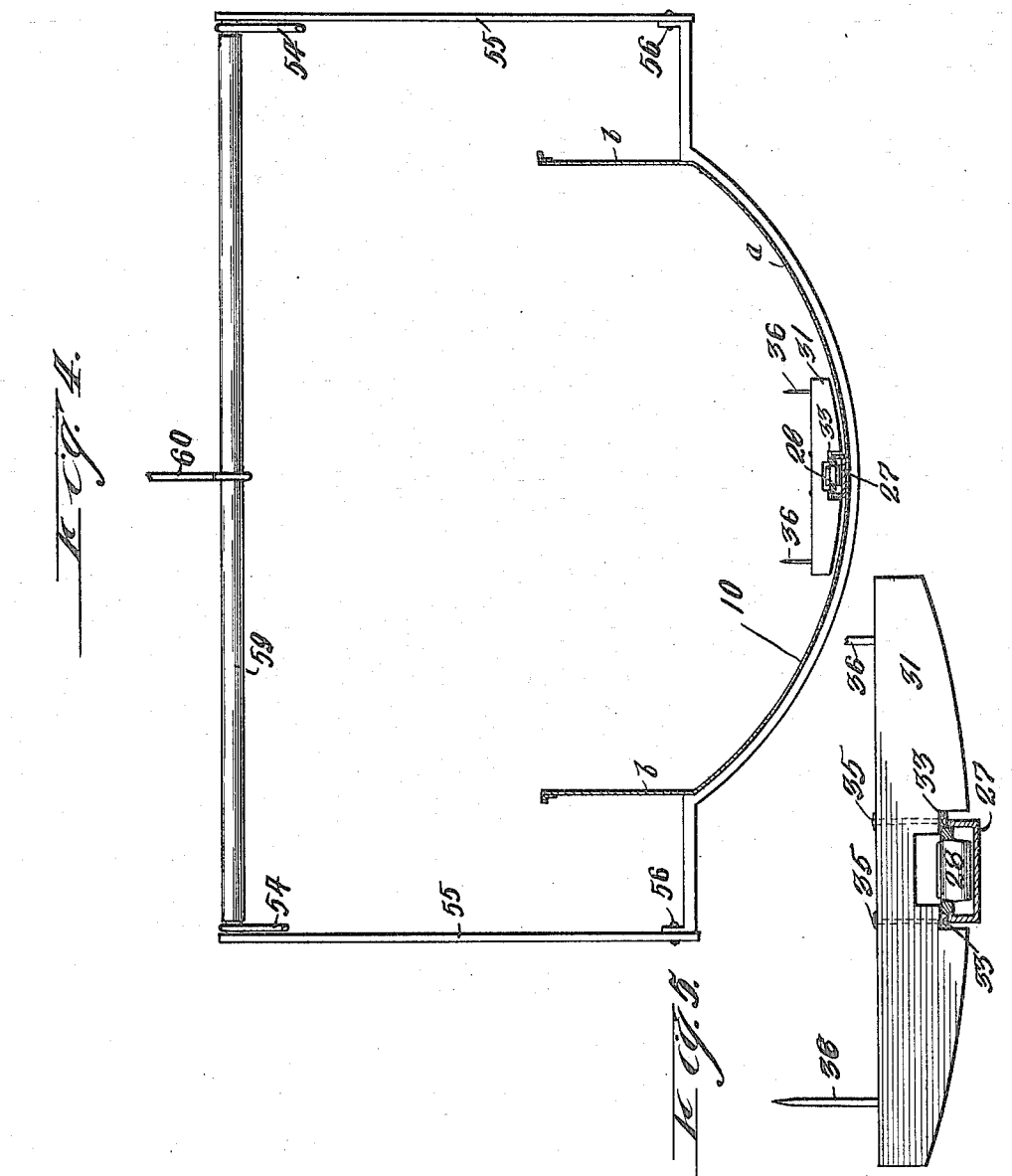


Fig. 4.

Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM D. LINDSAY, OF MILWAUKEE, WISCONSIN.

SELF-FEEDING DEVICE FOR THRESHING-MACHINES.

1,190,564. Specification of Letters Patent. Patented July 11, 1916.

Application filed June 3, 1911. Serial No. 631,116.

To all whom it may concern:

Be it known that I, WILLIAM D. LINDSAY, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Self-Feeding Devices for Threshing-Machines, of which the following is a specification.

My invention relates to improvements in self feeding devices for threshing machines, with especial reference to that class of such devices in which side feed carriers are employed.

The object of my invention is to provide a form of carrier which is peculiarly adapted to be folded in a position for transportation, or supported in a folded position convenient for passing the threshing machine through a door way without having parts of the carrier or its supports strike the lintel. Also to provide a form of carrier construction which will have maximum strength and durability for a given weight, and in which but little manual effort is required for the folding and unfolding operations, all but the initial movement being substantially automatic.

In the following description, reference is had to the accompanying drawings, in which—

Figure 1 is a side elevation of the front end portion of a self feeding attachment for threshing machines, showing my improved side feed carrier connected therewith in position for use. Fig. 2 is a side elevation of the same, showing the carrier and a portion of the self feeding conveyer in folded position. Fig. 3 is a detail view of the means for supporting and actuating the side feed carrier from its inner end. Fig. 4 is a transverse sectional view of the side feed carrier, drawn on line *x*—*x* of Fig. 1, and Fig. 5 is a detail view of one of the conveyer flights, showing the conveyer chain and track in cross section. Fig. 6 is a fragmentary view, partly in section, showing the pulley yoke 73 and its connection with sleeve 77.

Like parts are identified by the same reference characters throughout the several views.

The housing 1 of an ordinary type of self feeding device, partially incloses a conveyer feed way 2, provided with an ordinary conveyer belt or apron 3, having cross slats 4 and bundle engaging projections 5 of any ordinary type. The feed way 2 is formed in sections having hinge connection with each other at 7, whereby the outer section may be folded as shown in Fig. 2, and be supported from the housing 1 by a chain 9. (Fig. 2).

The side feed carrier also has a feed way composed of sections 10 and 11, having hinged connection with each other at 12 and adapted to fold as shown in Fig. 2, with the outer or front section supported from the rear end portion of the inner section by a hook 13. This feed way is supported from the inner section of the feed way 2 by means of a bracket 15 bolted to the feed way 2, and a tubular post 16 which serves as part of a gear casing for the power transmitting mechanism. Another member 17 of this gear casing is connected by arms 18 with the section 10 of the carrier feed way. This member 17 of the casing is rotatively mounted upon the member 16. Said member 16 is provided with a tubular extension 20, which telescopes into the member 17, and said member 16 is provided with a shoulder 22 at the base of the extension 20, whereby the upper member of the casing is supported vertically and permitted to rotate upon the lower member 16 of the casing. The member 16 is also provided with a spring latch 21, which engages the member 17 to prevent the latter from lifting. The feed way is provided with a cylindrically concave bottom *a*, and vertical side walls *b*, (see Fig. 4) and a channel iron 27 extends longitudinally along the central portion of the concave bottom *a*, and is secured thereto at intervals. This channel iron 27 has side flanges which project upwardly and serve as supporting ribs for the feed way and also provides a channel or track way for a conveyer chain 28, which extends over sprocket wheels 29 and 30, at the front and rear ends of the feed way. At intervals, this conveyer chain 28 is provided with bundle conveying flights 31. These flights are preferably formed of wood. They are secured to the chain in any suitable manner, preferably by providing the chain with laterally extending ears 33, and connecting the flights thereto by bolts or rivets 35. The bottom surface of these flights is rounded in substantial conformity to the curvature of the bottom *a* of the feed way, and upwardly projecting spines 36

mounted upon the flights are adapted to enter the bundles and cause them to be carried rearwardly by the chain, to the rear or inner end of the feed way, and deliver them therefrom to the main conveyer feed way 2. By using the channel iron 27, a feed way is provided of great strength and rigidity, irrespective of the strength or thickness of the material composing the walls *a* and *b* of the feed way, and this channel iron not only provides a rib or backbone for the feed way, but also provides a channel for the conveyer chain 28, so that the bundles of straw cannot crowd the chain laterally.

The chain 28 is actuated from a cross shaft 38, connected with the band cutting mechanism inclosed in the housing 1. From this cross shaft 38, motion is transmitted to the chain 28 through a pulley or sprocket wheel 39, belt or chain 40, pulley or sprocket wheel 41, shaft 42, (see Fig. 3) bevel gear wheels 43 and 44, vertical shaft 45, bevel gear wheels 46 and 47, and shaft 48, upon which the driving sprocket wheel 30 is mounted. The members 16 and 17 of the supporting casing heretofore described, serve as housing members for the bevel gearing and portions of the transmitting shafts.

It will be understood that the channel iron 27 is formed in sections corresponding to the sections 10 and 11 of the carrier feed way. At the meeting ends of these sections, they are provided with reinforcing bows 50 and 51 which are hinged together at 12, whereby the outer or front section may be folded upon the inner one, as heretofore explained. Similar bows may be provided at intermediate points. The reinforcing member 51 is provided on each side with a forwardly extending arm 53, connected by a flexible stay 54 with the swinging posts 55. Said posts are pivotally connected at 56 with the respective side walls of the feed way section 10, whereby said posts are permitted to occupy a vertical position as shown in Fig. 1, or an inclined position as shown in Fig. 2. The posts 55 are connected with each other by a cross rod 59. (See Fig. 4). A flexible stay or rope 60 is connected to the cross rod 59, and extends over pulleys 61 and 62, to a winding drum 63, mounted on the side of the housing 1, whereby said drum may be actuated to wind or unwind the stay 60, and thus raise or lower the sections 10 and 11. An arm 65 supports the pulleys 61 and 62 respectively. This arm is pivoted to the housing 1 at 66, and the arm, together with the pulleys 61 and 62, is supported from the housing 1 by a suitable rod formed in sections 67 and 68, connected by a turn buckle 69, whereby the arm 65 may be supported in any desired position. The position shown in Fig. 1 is the preferred position for ordinary purposes, as the pulley 61 is then substantially in the vertical line of shaft 45, projected. But when it is desired to move the machine into and out of a doorway, the arm 65 may be lowered as shown in Fig. 2, whereupon no portion thereof, or of the posts 55, will extend materially above the higher parts of the threshing machine. This is of considerable importance, for the reason that the ordinary threshing machine is calculated in its vertical dimensions to substantially fit the ordinary barn door-way, leaving only sufficient clearance to permit the machine to be moved into and out of the barn.

It will be observed that the casing sections 16 and 17, illustrated in Fig. 3, allow the carrier feed way to be swung upon the vertical pivot post formed by the telescoping casing extension 20. When the carrier is swung laterally to the desired position, it may be secured in such position by a clamping collar 70, supported from the feed way 2 by a bracket 71, having an arm 72 connected with said clamping collar. When the carrier feed way is thus swung laterally, the stay 60 is retained in engagement with the pulleys 61 and 62 by a tubular guide 77, connected with the pulley supporting arm 65. The pulley 61 is supported from the arm 65 by a pulley yoke 73, having a tubular shank 74 socketed in sleeve 77 carried by the arm 65. A member 76 is pivoted to the pulley shaft and provided with an eye at its outer end through which the stay 60 passes. When the carrier feed way is swung laterally, as above explained, the pulley yoke is rotated,—the shank 74 turning in sleeve 77,—thus tilting the pulley and preventing the stay 60 from unshipping.

When the carrier feed way sections are extended in position of use, or as shown in Fig. 1, the stays 54 will pull upon the section 11 along a line which passes above the hinge 12, whereby the stays 54 and stay 60 will tend to hold the outer carrier section in extended position with the swinging posts 55 substantially perpendicular to the inner carrier section. The posts 55 and cross rod 59 serve to maintain the stays 54 at substantially the same angle with reference to the carrier, regardless of the angle at which the carrier may be vertically adjusted. The pull of these stays upon the outer carrier section, when the latter is in different positions of use, will therefore not vary sufficiently to materially interfere with the manual operation of folding or opening the carrier. But by manually pulling down upon the outer end of carrier section 11, said section may be swung downwardly upon the hinge 12,—the hinge yielding upwardly in a buckling movement. As soon as the hinge 12 passes above the stays 54, the pull of the latter assists in folding the section 11 inwardly to its position underneath section 10. Owing to the

fact that the posts 55 are permitted to swing forwardly, an effect is secured equivalent to a lengthening of the stays 54 to permit the folding movement of carrier section 11, and said stays are also brought more nearly to a position perpendicular to the folded carrier section 11, thus rendering the stays more effective as supports for this section in such position. It is advisable, however, to use the supporting hook 13 to prevent this section from vibrating when the machine is being transported from one place to another.

I attach great importance to the use of the posts 55, and also to the fact that they are permitted to swing, since by this means, the carrier section may not only be folded with the same facility from any angular position of adjustment,—(the pressure at the joint being substantially equal at all times),—but I am also enabled to extend the carrier from folded position with equal facility. It is merely necessary to unfasten the hook 13, and give the section 11 a comparatively light downward push, to cause it to automatically swing downwardly, outwardly, and then upwardly to an extended position. This is due to the fact that the arrangement of the stays 54 and their connection with the posts 55, enables me to hold the section 11 in either the folded or unfolded positions with nearly the same tension, and at just sufficient tension to support the normal load. Latches 80 may secure it in such position.

While I have shown and described my invention as applied to auxiliary or side feed carriers, it will be understood that it may, if desired, be also applied to the main feeding conveyer or carrier, particularly that part of my invention which is embodied in the swinging support formed by a post or posts 55, with stay connections between such support and the frame of the band cutting a feeding mechanism and between such support and the outer carrier section.

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

1. The combination with a main feeding conveyer for a threshing machine, of an auxiliary feeding conveyer arranged to deliver material to the main conveyer and adjustably supported in operative relation thereto, said auxiliary feeding conveyer comprising a feed way having a cylindrically curved bottom, a channel iron longitudinally disposed in said bottom and rigidly secured thereto, an endless chain conveyer arranged to travel in said channel iron, and provided with bundle engaging flights, extending above and laterally from said channel iron in the bottom portion of the feed way, and means for actuating said chain conveyer.

2. The combination with a main feeding conveyer for a threshing machine, of an auxiliary feeding conveyer arranged to deliver material to the main conveyer and adjustably supported in operative relation thereto, said auxiliary feeding conveyer comprising a feed way having a cylindrically curved bottom, a channel iron longitudinally disposed in said bottom and rigidly secured thereto, an endless chain conveyer arranged to travel in said channel iron, and provided with bundle engaging flights, extending above and laterally from said channel iron in the bottom portion of the feed way, and means for actuating said chain conveyer, said flights being each connected with a link of said conveyer, and the connecting member being arranged to bear upon the side margins of the channel iron to support the flights, with their end portions out of contact with the feed way walls.

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

WILLIAM D. LINDSAY.

Witnesses:
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I. D. BREMER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."