

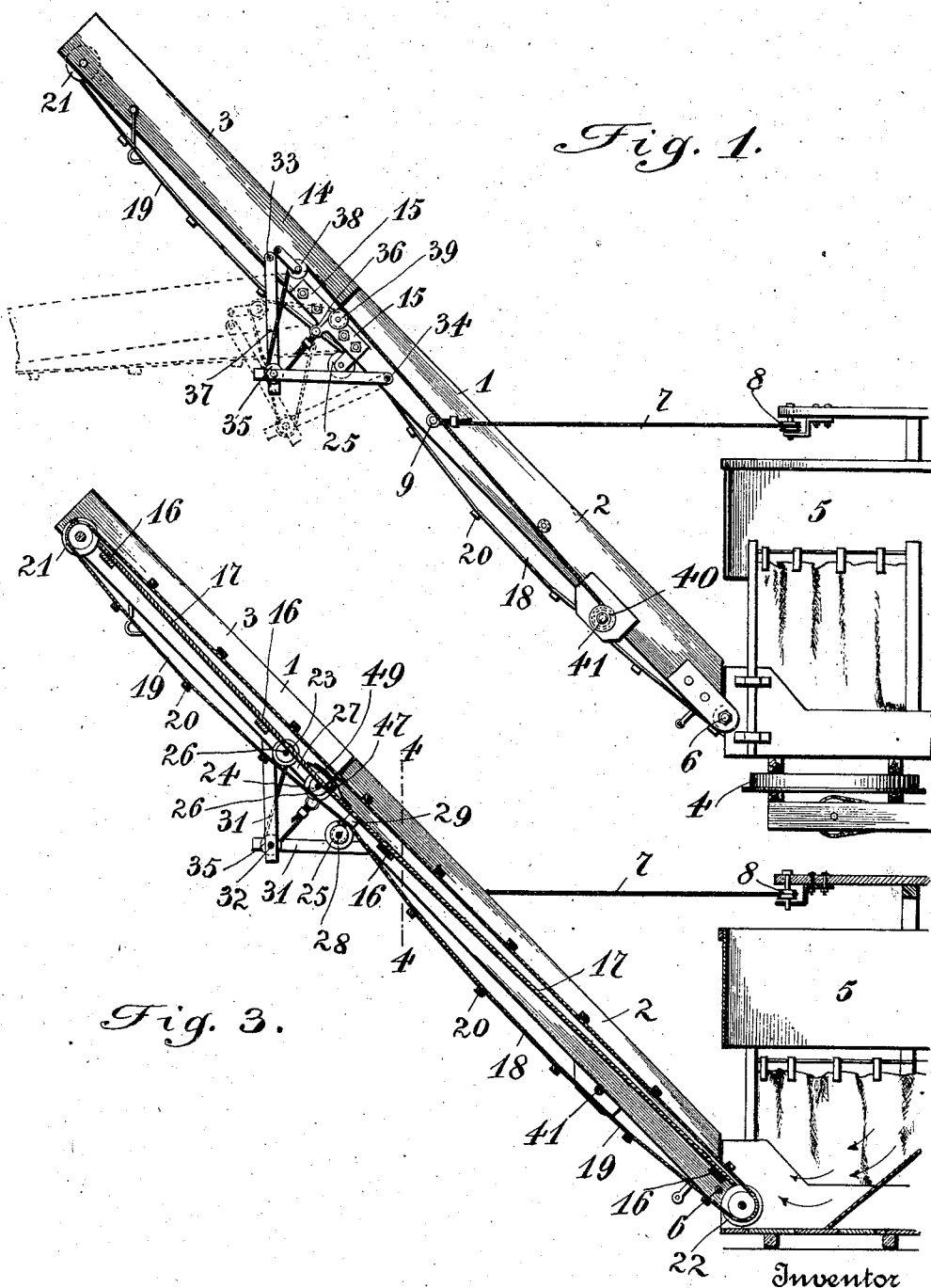
No. 785,241.

PATENTED MAR. 21, 1905.

T. D. ULRICH.
STRAW STACKER.

APPLICATION FILED AUG. 8, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

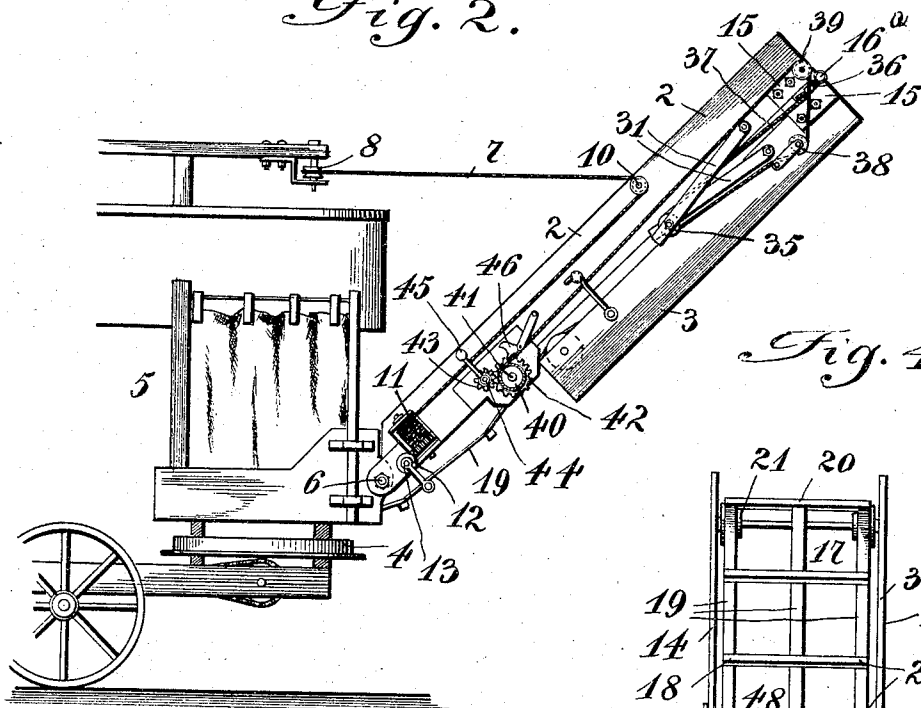


Fig. 4.

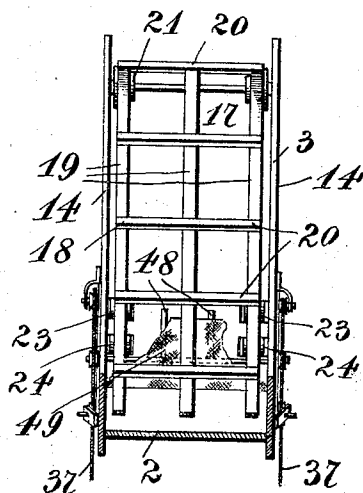


Fig. 5.

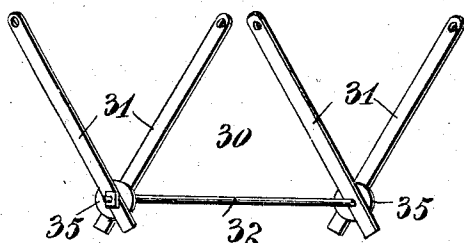
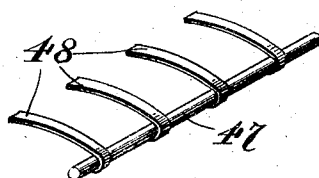


Fig. 6.



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UNITED STATES PATENT OFFICE.

TOMEY D. ULRICH, OF MARION, OHIO.

STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 785,241, dated March 21, 1905.

Application filed August 8, 1904. Serial No. 220,052.

To all whom it may concern:

Be it known that I, TOMEY D. ULRICH, a citizen of the United States, residing at Marion, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Straw-Stackers; and I do 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.

My invention relates to improvements in folding straw-stackers for threshing-machines, and more particularly in the means for mounting and adjusting the upper or outer vertically-swinging section of straw-stackers of that class in which the straw is carried upon an endless conveyer.

The object of my invention is to improve and simplify the construction and operation of devices of this character, and thereby render them more efficient and durable in use and less expensive to manufacture.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is an elevation of one side of a straw-stacker embodying my invention, the sections of the same being shown in their extended position in full lines and in a partially-folded position in dotted lines. Fig. 2 is a similar view of the opposite side of the device, the stacker-sections being folded in the position they assume when it is desired to transport the threshing or other machine upon which the stacker is mounted. Fig. 3 is a vertical longitudinal sectional view through the device. Fig. 4 is a transverse sectional view taken on the line 4-4 of Fig. 3. Fig. 5 is a detail perspective view of the toggle-levers for operating the outer section of the stacker, and Fig. 6 is a detail perspective view of the hinged finger-bar for supporting the covering for the joint of the two sections of the stacker.

Referring to the drawings by numeral, 1 denotes a stacker comprising lower and upper swinging sections 2 and 3, carried by a

turn-table 4, which is mounted upon a threshing or similar machine 5. The turn-table 4, which is adapted to swing in a horizontal plane, may be of any suitable construction and mounted in any desired manner. The stacker 1, which may consist of two or more sections, has its lower section pivotally secured, as shown at 6, to the turn-table 4 to permit the stacker to be swung in a vertical plane. Any desired means may be provided for adjusting the stacker vertically; but, as illustrated in the drawings, I have provided a cable 7, which is passed about a guide-pulley 8, suitably mounted upon the upper portion of the threshing machine 5. One end of said cable 7 is secured, as at 9, upon one side of the section 2 adjacent to its upper end, and the other end of said cable, after being passed around a guide-pulley 10, mounted upon the opposite side of said section 2, is wound about a drum 11, mounted upon one side of the section 2 adjacent to its lower end. As shown in Fig. 2 of the drawings, the shaft of said drum is provided with a worm-gear 12, which meshes with the worm upon the crank-shaft 13, so that when the crank-handle upon said shaft is rotated the cable 7 is wound or unwound upon the drum 11 to swing the stacker angularly in a vertical plane.

The stacker-section 3 is pivotally connected to the outer end of the section 2, to permit the same to swing in a vertical plane independent of the section 2. This pivoted connection is preferably effected by securing upon the sides 14 of said sections hinged plates 15, which are pivotally connected by a pintle or bolt 16. The sides 14 of said sections are connected by cross-bars 16, upon which a suitable flooring 17 is secured. Mounted to travel upon the stacker is an endless conveyer 18, which may be of any suitable construction and mounted in any desired manner. As shown, said conveyer comprises a series of endless belts 19, connected by cross-slats 20. The conveyer passes around suitable guide-pulleys 21 and 22, mounted at the outer end of the upper section 3 and the lower end of the lower section 2. The upper stretch of the conveyer also passes over two sets of pulleys 23 and 24, disposed adjacent to the inner or hinged end

of the upper section 3, and the lower stretch of the conveyer passes over a set of pulleys 25, disposed adjacent to the upper end of the lower section 2. Said pulleys 23 and 24 are
 5 formed with flanges and are secured adjacent to the opposite ends of the transverse shafts 26, mounted in plates 27, secured upon the inner faces of the sides 14 of the said section 3. The pulleys 25 are also flanged and are secured
 10 upon a shaft 28, mounted in plates 29, secured upon the inner faces of the sides of the section 2. When the stacker is in its straightened position, the upper stretch of the conveyer is out of engagement with the pulleys 23 and 24 and the floor 17 of the stacker-sections; but when
 15 the outer section 3 is adjusted angularly with respect to the section 2 the said upper stretch of the conveyer will coact with said pulleys 23 and 24, as will be readily understood. The pulleys 25, which support the lower stretch of the conveyer, are so disposed that they take up and pay out the same when the upper section 3 is adjusted.

In order to adjust the upper section 3 angularly with respect to the section 2, I provide a toggle connection 30, which, as clearly shown in Fig. 5 of the drawings, comprises two pairs of toggle-levers 31, connected by a cross-bar 32. The levers of each of said pairs have one
 30 of their ends pivotally connected, as indicated at 33, to one of the sides 14 at a suitable distance from the pivot of said sections, and the opposite ends of said levers are pivoted, as shown at 34, adjacent to one end of the cross-bar 32 and upon opposite sides of a guide-pulley 35, which is loosely mounted upon said cross-bar.

Secured, as at 36, upon each of the pivots of the sections 2 and 3 or at any other suitable point upon the latter are the ends of flexible cables or other flexible connections 37, which are passed around the pulleys 35, carried by the toggle-levers, and also about pulleys 38 and 39, mounted upon the hinged plates 15
 45 upon each side of the stacker. The opposite ends of said cables 37 are wound around drums 40, secured upon opposite ends of a transverse shaft 41. Said shaft 41 is journaled in suitable bearings provided upon the sides of the section 2 adjacent to its lower end, and it may be rotated to wind and unwind said cable by any suitable means. As shown, I have secured upon said shaft 41 a gear 42, which is in mesh with the pinion 43, secured upon the shaft 44, which is provided with a crank-handle 45, by means of which it may be rotated. In order to lock the shaft 41 against rotation to hold the section 3 at any adjusted position, I provide a pivoted pawl 46, which is adapted
 60 to engage the teeth of the gear 42; but any other suitable means may be provided for accomplishing this object.

In order to prevent the straw or the like upon the conveyer 18 from falling through the opening at the joint of the sections 2 and

3, I pivotally mount upon the section 2 a transversely-disposed finger-bar 47, the fingers 48 of which are slightly curved, as shown in Fig. 6 of the drawings, and adapted to rest upon the floor of the section 3. Said fingers
 70 span the space between the floors of the two sections and support a flexible covering 49, which has one of its ends secured to the floor of the section 2 in advance of the finger-bar 47, and its other end is loose to permit it to adjust itself upon the floor of the section 3 when the latter is adjusted with respect to the section 2.

The operation and advantages of my invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. It will be seen that by operating the crank 45 the cables 37 may be wound or unwound upon said drums in order to open or close the pairs of toggle-levers 31, which swing the section 3 angularly with respect to the section 2. This construction is simple and powerful and by means of it the sections 2 and 3 may be held rigidly in alignment with each other or in any angular
 90 position.

While I have shown and described the preferred embodiment of my invention, it will be understood that I do not wish to be limited to the precise construction herein set forth, since various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. The combination with two pivotally-connected sections of a straw-stacker or the like, of pairs of toggle-levers having their respective members respectively pivotally connected to the said sections, a cross-bar pivotally connecting the members of the toggle-levers, a cable attached to the said cross-bar, a direction element on one of said sections and engaged by said cable, and means to operate the said cable to adjust said sections, substantially as described.

2. The combination with two pivotally-connected sections of a straw-stacker or the like, of toggle-levers connecting said sections, a winding-drum, guide devices carried by said toggle-levers and said sections, a flexible connection passed about said guide devices and having one of its ends fixed and its other end wound upon said drum, and means for operating said drum, substantially as described.

3. The combination with two pivotally-connected sections of a straw-stacker or the like, of a pair of toggle-levers pivotally connected together and to said sections upon opposite sides of their pivot, a guide-pulley carried by the connected ends of said levers, a guide-pulley upon each of said sections, a drum upon
 130

one of said sections, a cable passed under said pulley upon said levers and over said pulleys upon said sections; one end of said cable being fixed and its other end being wound around said drum, and means for rotating said drum, substantially as described.

4. In a straw-stacker or the like, the combination of a lower section, an upper section pivoted thereto, a pair of toggle-levers connecting said sections upon each side of the same, a cross-bar uniting said pairs of toggle-levers and forming a pivot for the same, guide-pulleys upon said cross-bar, guide-pulleys upon said sections, a transverse shaft mounted in said lower section, a cable upon each side of said sections passed around said guide-pulleys and having one of its ends fixed adjacent to the pivot of said sections and its other end wound upon one end of said shaft, and means for operating said shaft to wind or unwind said cables, substantially as described.

5. The combination with two angularly-adjustable sections of a straw-stacker or the like, of a supporting-frame pivotally connected to one of said sections and adapted to loosely engage the other, and a flexible covering upon said frame, having one of its ends attached to

one of said sections and its opposite end free to cover the opening between said sections, substantially as described.

6. The combination with two hingedly-connected sections of a straw-stacker or the like, of a finger-bar pivotally mounted upon one of said sections, and a flexible covering supported upon said finger-bar and adapted to close the opening between the joint of said sections, substantially as described.

7. In a straw-stacker or the like, the combination of two pivotally-connected sections, an endless conveyer mounted upon said sections, two sets of guide-pulleys disposed adjacent to one end of one of said sections to support the upper stretch of said conveyer, and a set of guide-pulleys disposed adjacent to one end of the other of said sections to support the lower stretch of said conveyer, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

TOMEY D. ULRICH.

Witnesses:

JOHN J. CRAWLEY,
ED. K. CLARK, Jr.