

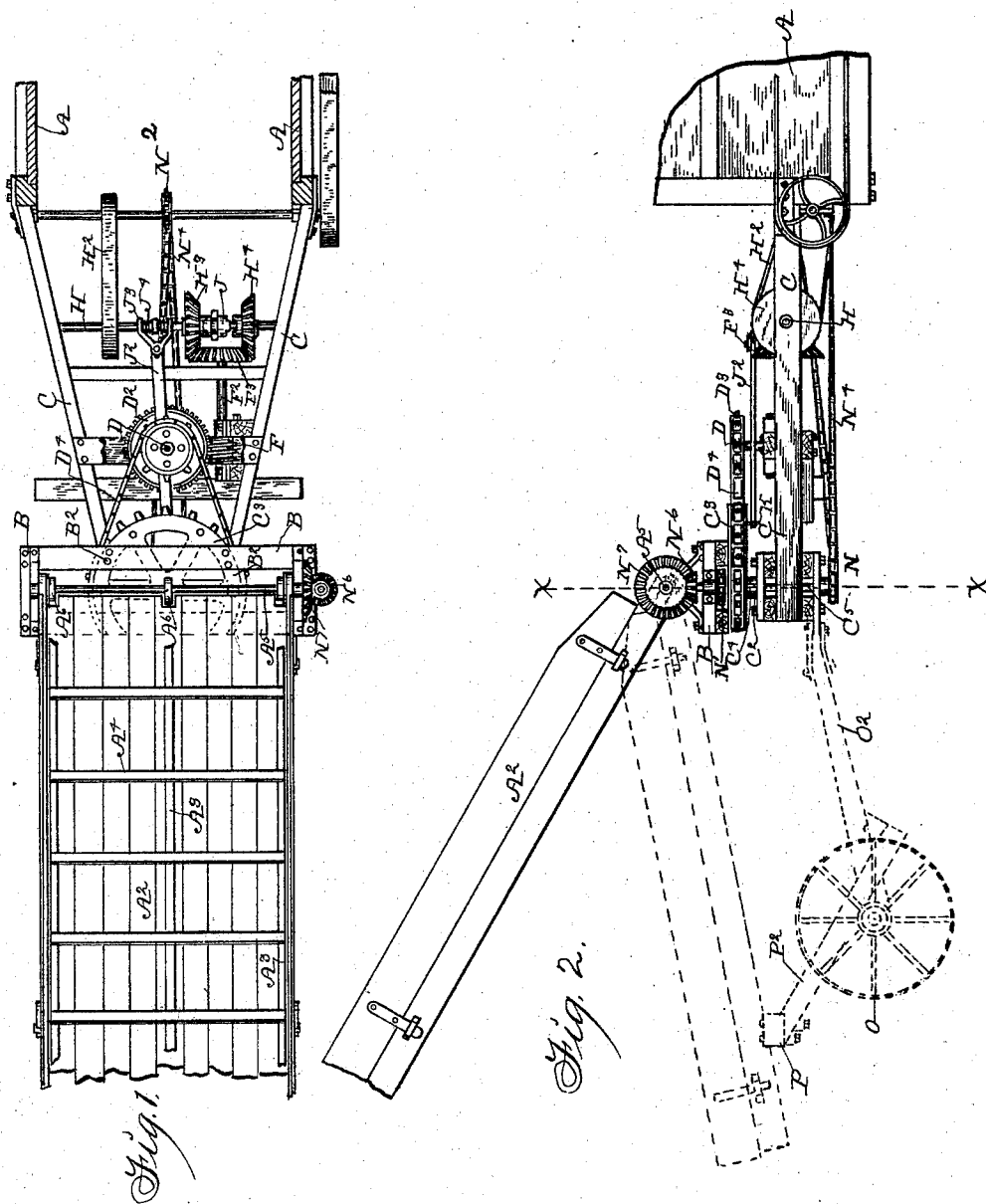
(No Model.)

2 Sheets—Sheet 1.

A. VANHOUELING.  
STRAW STACKER.

No. 518,637.

Patented Apr. 24, 1894.



Witnesses:  
H. A. Ballard.  
R. McOrwig

Inventor: Arthur Vanhouweling.  
by Thomas G. Orwig. and  
J. Ralph Orwig, his Attorneys

(No Model.)

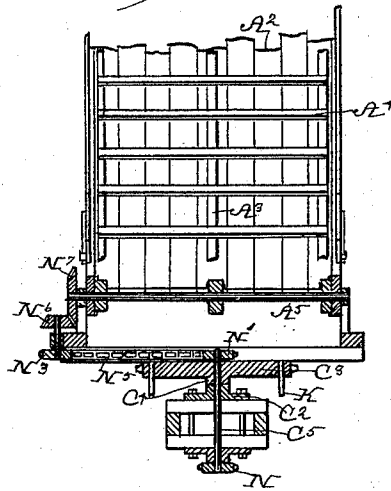
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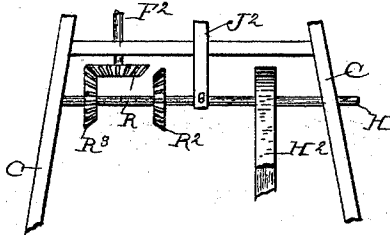
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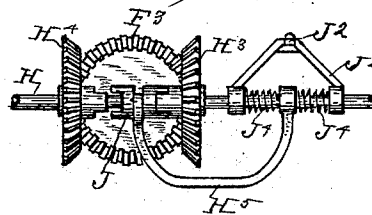
*Fig. 3.*



*Fig. 5.*



*Fig. 4.*



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Inventor: Arthur Vanhouweling,  
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J. Ralph Orwig, his Attorneys.

# UNITED STATES PATENT OFFICE.

ARTHUR VANHOUELING, OF OLIVET, IOWA.

## STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 518,637, dated April 24, 1894.

Application filed September 25, 1893. Serial No. 486,490. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR VANHOUELING, a citizen of the United States of America, residing at Olivet, in the county of Mahaska, State of Iowa, have invented an Improvement in Straw-Stackers, of which the following is a specification.

My object is to produce a simple and durable stacker that may be raised or elevated relative to the thrasher in the ordinary manner and be automatically oscillated as required to distribute the straw in a semi-circle.

To this end my invention consists first, in pivotally mounting a carrier of the ordinary kind upon a frame extended from a thrashing machine, and in the arrangement and combination upon said frame of means for moving the carrier in the segment of the circle and for automatically reversing the said movement when it has reached the limit of its stroke in both directions.

My invention consists further in certain other details of construction, arrangement and combination of the parts 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 a portion of the thrashing machine, and also a portion of a stacker with parts broken away to show the mechanism for operating the stacker. Fig. 2 is a side elevation of the same showing the carrier in position ready for transportation, in dotted lines. Fig. 3 is a vertical transverse sectional view through the line X X of Fig. 2. Fig. 4 is an enlarged detail view showing the device for reversing the motion of the stacker, and Fig. 5 is a detail view showing a modified form of mechanism for performing the same functions.

Referring to the accompanying drawings the reference letter A is used to designate a thrashing machine which is of the ordinary construction.

A<sup>2</sup> designates a carrier having endless belts A<sup>3</sup> provided with cross pieces A<sup>4</sup>, arranged to travel thereupon and carry straw from the bottom of the stacker to its top. A shaft A<sup>5</sup> at the bottom of the stacker is provided with belt wheels A<sup>6</sup> over which the belts A<sup>3</sup> are passed, so that when said shaft is rotated the cross pieces A<sup>4</sup> will be moved in the carrier.

B designates a frame having the said carrier mounted thereupon in such a manner that it may be capable of a movement in a vertical plane relative to said frame.

C designates a frame extended rearwardly from the thrashing machine and having at its outer end a plate C<sup>2</sup>.

C<sup>3</sup> designates a segmental sprocket wheel having a plate C<sup>4</sup> formed on its lower end to engage the plate C<sup>2</sup> to provide for the rotation of the sprocket wheel relative to the frame C.

C<sup>5</sup> is a rod fixed to the sprocket wheel and passed downwardly therefrom and having a sprocket wheel fixed to its lower end for purposes hereinafter explained. The aforesaid frame B is firmly fixed to the double flange wheel C<sup>3</sup> by means of bolts B<sup>2</sup> so that the carrier and the sprocket wheel C<sup>3</sup> will also be rotated synchronously.

D designates a vertical shaft, mounted in suitable bearings in approximately the central portion of the frame C and having fixed thereto a gear wheel B<sup>2</sup> and a sprocket wheel D<sup>3</sup>, D<sup>4</sup> being a chain gearing the sprocket wheels C<sup>3</sup> and D<sup>3</sup> together. This shaft D is arranged to be driven by a worm gear F fixed to a shaft F<sup>2</sup> that is extended horizontally and is provided with a beveled gear wheel F<sup>3</sup> at its rear end.

H designates a shaft rotatably mounted in the rear portion of the frame C and adapted to be driven by means of a belt H<sup>2</sup> connected with the thrashing machine mechanism.

H<sup>3</sup> and H<sup>4</sup> are beveled gear wheels loosely mounted upon the shaft H and both normally in engagement with the bevel gear wheel F<sup>3</sup>.

J designates a clutch device slidably but non-rotatably mounted upon the shaft H between the wheels H<sup>3</sup> and H<sup>4</sup>. This clutch is connected with the lever J<sup>2</sup> that is pivoted to the shaft D by means of the connecting bar H<sup>5</sup>. The connection is preferably made by means of a fork end J<sup>3</sup> on the lever J<sup>2</sup>, both ends of which are adapted to encircle the shaft H and coil springs J<sup>4</sup> are interposed between the said fork ends and the connecting rods of the clutch so that the lever may be moved a slight distance before the motion of the shaft H is changed so as to produce an easy reversal of the said movement and prevent shocks and jars in the mechanism.

K designates downwardly projecting pins fixed to the sprocket wheel C<sup>3</sup> at opposite sides thereof to engage the forward end of the lever J<sup>2</sup> when the carrier is at either extreme of its movements as required to throw the clutch device J in and out of engagement with the wheels H<sup>3</sup> and H<sup>4</sup>.

The mechanism for driving the endless belts in the carrier is of common construction and arrangement and comprises the sprocket wheels N N' fixed to the opposite ends of the shaft C<sup>5</sup>, a sprocket N<sup>2</sup> attached to and operated by the thrashing machine, a sprocket N<sup>3</sup> attached to a shaft at the side of said frame, the chain N<sup>4</sup> for connecting the sprockets N' and N<sup>2</sup>, a chain N<sup>5</sup> for connecting the sprockets N and N<sup>3</sup> and bevel gears N<sup>6</sup> and N<sup>7</sup> for imparting motion to the shaft A<sup>5</sup> of the carrier.

In practical operation it will be seen that when the machine is started the shaft H will be rotated by the belt H<sup>2</sup>. This motion will be transmitted to the sprocket wheel C<sup>3</sup> in such a manner as to move the carrier in the segment of a circle in the manner hereinbefore indicated. Then when one of the pins K contact with the forward end of the lever J<sup>2</sup> it will be obvious that the friction clutch J will be thrown into engagement with the opposite one of the wheels H<sup>3</sup> and H<sup>4</sup> whereby the motion is reversed and the carrier again started to move in the opposite direction. This oscillating movement of the carrier is of course continual during the operation of the machine.

I have provided the following means for carrying the carrier when the machine is being transported, as follows: O designates a truck connected with the frame C by means of a tongue O<sup>2</sup> and P is a cross piece secured to a frame P<sup>2</sup> that is fixed to the aforesaid truck and tongue and the carrier is adapted to rest upon a cross piece P, its forward end being connected with the shaft A<sup>5</sup> hereinbefore stated.

In the modified form of gearing shown in Fig. 5 the lever J<sup>2</sup> is connected with the shaft H so that when the lever is moved laterally, the shaft H will be moved longitudinally. R designates a bevel gear wheel fixed to the shaft F<sup>2</sup>, and R<sup>2</sup> and R<sup>3</sup> are bevel gear wheels fixed to the shaft H and adapted to be brought into engagement with the gear wheel R when the shaft H is moved longitudinally. In this instance the mechanism for reversing the lever is, of course, the same as before shown.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States therefor, is—

1. An improved automatically oscillating straw stacker comprising the following elements to wit; a suitable frame adapted to be attached to a thrashing machine, a segmental

sprocket wheel rotatably mounted in the outer end of said frame, a frame mounted upon said sprocket, a carrier connected with said frame and capable of a movement in a vertical plane relative thereto, means for operating said carrier by power derived from the thrashing machine, a vertical shaft also mounted in said frame a sprocket wheel thereon, a chain gearing the said sprocket with the aforesaid segmental shaft, a worm gear in mesh therewith and fixed to a suitable shaft, mechanism adapted to rotate said shaft in either direction, two pins projecting from the said segmental sprocket, a lever fulcrumed to a suitable support and adapted to be engaged by said pins and means whereby a reversal of said lever operates the mechanism for reversing the aforesaid worm gear, and means for operating the device from the thrashing machine, substantially as, and for the purposes, stated.

2. In combination with a thrashing machine, a carrier composed of the parts A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>, A<sup>5</sup> and A<sup>6</sup>, frame B having the shaft A<sup>5</sup> mounted therein, a frame C fixed to the thrashing machine, a plate C<sup>2</sup> mounted in the outer end of the frame C, a segmental gear wheel C<sup>3</sup> having a plate C<sup>4</sup> at its under side to mate with the plate C<sup>2</sup>, means for fixing the frame B to the top of said segmental sprocket C<sup>3</sup>, a shaft D rotatably mounted in the approximate central portion of the frame C, a gear wheel D<sup>2</sup> fixed to said shaft, a sprocket wheel D<sup>3</sup> also fixed to said shaft, a chain D<sup>4</sup> connecting the wheels C<sup>3</sup> and D<sup>3</sup>, a worm F, a shaft F<sup>2</sup> connected therewith, a beveled gear F<sup>3</sup> on the end of said shaft, a shaft H adapted to be driven by power from the thrashing machine, the gear wheels H<sup>3</sup> and H<sup>4</sup> rotatably mounted on said shaft H, a clutch J arranged to be placed in engagement with either of the wheels H<sup>3</sup> and H<sup>4</sup>, a lever J<sup>2</sup> pivoted in a suitable support, a fork J<sup>3</sup> at the rear end of said lever J<sup>2</sup>, springs J<sup>4</sup> interposed upon the shaft H between the ends of the fork J<sup>3</sup> and bar H<sup>5</sup> connecting the said clutch J with the springs J<sup>3</sup> for the purposes stated, pins K downwardly projecting from the segmental sprocket wheel C<sup>3</sup> to engage the lever J<sup>2</sup>, as set forth, a shaft C<sup>5</sup> extended vertically through the forward end of the frame C, sprocket wheels N, N', fixed to the opposite ends thereof, a chain N<sup>4</sup> for connecting the lower sprocket wheel with the thrashing machine and the gearing devices N<sup>5</sup>, N<sup>6</sup> and N<sup>7</sup> for driving the mechanism of the carrier, all arranged and combined, substantially in the manner set forth, and for the purposes stated.

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Witnesses:

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